Lake Calumet Cluster Site Group

TECHNICAL MEMORANDUM:
Groundwater Assessment

Lake Calumet Cluster Site
Operable Unit 2

July 2017

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ACRONYMS AND ABBREVIATIONS

ATSDR	Agency for Toxic Substances and Disease Registry
AWQC	Ambient Water Quality Criteria
B(a)A	benzo(a)anthracene
B(a)P	benzo(a)pyrene
bgs	below ground surface
CDOE	City of Chicago Department of the Environment
COSR	Calumet Open Space Reserve
DO	dissolved oxygen
E&E	Ecology and Environment, Inc.
FFS	Focused Feasibility Study
FSP	Field Sampling Plan
HASP	Health and Safety Plan
HDPE	high-density polyethylene
HPT	hydraulic profiling tool
IAC	Illinois Administrative Code
IEPA	Illinois Environmental Protection Agency
IRM	Indian Ridge Marsh
ISWDS	Illinois State Water Survey Division
K	hydraulic conductivity
kg/ha-year	kilograms per hectare per year
LCCS Group	Lake Calumet Cluster Site Group
LNAPL	light non-aqueous phase liquid
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	mean sea level
NAVD88	North American Vertical Datum of 1988
NPL	National Priorities List
ORP	oxidation-reduction potential

OU1	Operable Unit 1
OU2	Operable Unit 2
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PEC	Probable Effects Concentration
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RSL	Regional Screening Level
SEPA	Sidestream Elevated Pool Aeration
SOW	Statement of Work
SVOC	semi-volatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TEC	Threshold Effects Concentration
TOC	total organic carbon
TSS	total suspended solids
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VAP	vertical aquifer profiling
VOC	volatile organic compound

EXECUTIVE SUMMARY

This Technical Memorandum presents the results of a comprehensive groundwater investigation conducted for Operable Unit 2 (OU2) at the Lake Calumet Cluster Site (the Site or LCCS). The Site is in a heavily industrialized area in Southeast Chicago, Illinois and is immediately bounded by the Land and Lakes #3 landfill to the west; Paxton II landfill to the northwest; Paxton I landfill to the north; the Norfolk Southern Railroad and Indian Ridge Marsh immediately to the east; and 122nd Street to the south.

The groundwater investigation was performed to characterize the nature and extent of constituents in groundwater entering and emanating from the Site. There were two primary objectives for the groundwater studies at the LCCS. The first was to obtain the data necessary to complete a comprehensive evaluation of the hydrogeologic setting and groundwater flow behavior within the fill deposits that constitute the water-bearing zone at the Site. The second objective was to assess the overall groundwater conditions at the Site by comparing the results of groundwater sampling and analysis to applicable water quality benchmarks to determine the potential likelihood of unacceptable human health or ecological risks associated with groundwater emanating from LCCS to Indian Ridge Marsh (IRM).

To accomplish these objectives, the groundwater investigation was conducted in three separate phases. The first phase consisted of the collection of soil boring data to determine the geologic stratigraphy at the Site and establishment of a network of piezometers to evaluate horizontal and vertical hydraulic gradients, and groundwater flow directions. During the second phase, both hydraulic profiling and vertical aquifer sampling were performed to identify and sample the zones of highest permeability at locations around the perimeter of the Site. The data collected from these first two phases were then used to determine the locations for groundwater monitoring wells. To account for potential seasonal variability in groundwater flow directions and gradients, water levels in the newly installed piezometers at the Site were gauged monthly for twelve months. Four rounds of quarterly groundwater samples were collected from the monitoring wells installed at the Site during the investigation.

The groundwater assessment also included a review of published information regarding the extent and nature of the historical infilling of the wetlands in the Lake Calumet Region. IRM is part of a series of open spaces in the Lake Calumet area that includes Big Marsh, Heron Pond, and Dead Stick Pond. IRM consists of two separate pools (North Pool and South Pool) that are hydraulically connected to the Calumet River. Historically, prior to development of the Calumet Area, these wetland areas were much more extensive and were directly connected to Lake Calumet. However, during the initial industrial development of the wetland areas in the late 19th century, large amounts of fill were used to raise low-lying areas, including slag from nearby steel mills, dredge spoils from the channelization of the Calumet River, demolition debris, and municipal and industrial wastes, resulting in accompanying historical impacts to water resources on a regional-wide basis. The historical fill activities altered hydrologic flow patterns in the Calumet Area and reduced the previous extensive wetland areas to smaller pools, such as IRM, that are interspersed with the primarily industrial and commercial development in the area. Surface water flow in IRM is affected by surrounding properties, including surface water runoff from the former Acme Coke Site (located immediately north of IRM) through an existing culvert. Runoff from the Paxton I Landfill formerly drained directly to IRM via three culverts.

A key question addressed by the groundwater investigation was whether a native sand unit, locally referred to as the Dolton Sand, was present at the Site. Historical information suggesting that the Dolton Sand may have been mined at the Site was confirmed by geologic observations during the soil boring sampling program which indicated that native shallow unconsolidated materials at the Site had been removed and replaced with fill or waste material. The fill materials encountered during this investigation consisted of solid and household wastes, varying from industrial/demolition debris (*e.g.*, slag, metal pieces, bricks) to household wastes such as newspaper and general refuse.

The shallowest native geologic unit at the Site is a low-permeability silty clay located immediately beneath the anthropogenic fill deposits. The silty clay unit was encountered at every soil boring location and extends to the maximum depth of all soil borings completed.

The primary water-bearing unit at LCCS is the municipal/industrial waste fill. Water within the fill materials at LCCS does not meet the definition of "groundwater" under 35 IAC 620 because it is not located within a geologic material. The low permeability, uniform composition, and significant thickness of this unit provide a barrier that prevents the vertical migration of water within the fill unit into deeper permeable units.

Based on the results of groundwater sampling and analysis conducted during the groundwater investigation, the quality of the groundwater entering the Site, including that from the adjacent Paxton I and II Landfill properties, is similar to the quality of groundwater emanating from the Site. For many constituents, the concentrations in groundwater entering the Site and surrounding the Site are higher than the concentrations in groundwater emanating from the Site. Overall, upgradient and downgradient groundwater conditions are generally similar, with some constituents detected at lower levels emanating from the Site than entering the Site.

The results of human health and ecological screening evaluations presented in this technical memorandum indicate that constituents in groundwater along the border of LCCS and IRM, as well as in IRM surface water and sediments, likely do not pose an unacceptable risk to human health or the environment. Additionally, those evaluations, together with the findings that the highest concentrations of virtually all constituents in IRM surface water and sediments do not occur near the boundary with LCCS, indicate that the Site does not appear to be a principal source of constituents to IRM, and further investigation of IRM for the purpose of evaluating potential risks to human health and ecological receptors is not necessary.

Finally, the Site investigations have adequately characterized the nature of the groundwater entering, in, and emanating from the Site in satisfaction of the requirements of the Statement of Work and RI/FS Work Plan. Additional on-site investigations are not necessary to evaluate groundwater conditions for the purposes of the OU2 RI.

1 INTRODUCTION

1.1 Overview

Arcadis U.S., Inc. (Arcadis) has prepared this Technical Memorandum for Operable Unit 2 (OU2) at the Lake Calumet Cluster Site (the Site) on behalf of the Lake Calumet Cluster Site Group (LCCS Group). Remedial activities at the Site have been divided into two operable units with OU2 focusing exclusively on groundwater entering the Site, at the Site, and emanating from the Site.

The OU2 remedial investigation (RI) is being conducted pursuant to the 2013 Administrative Settlement Agreement and Order on Consent (Settlement Agreement) and the accompanying Statement of Work (SOW). The scope of RI activities to fulfill the requirements of the Settlement Agreement and SOW was presented in the Revised Remedial Investigation and Feasibility Study (RI/FS) Work Plan, which was submitted to the U.S. Environmental Protection Agency (USEPA) on August 21, 2015 and approved on September 30, 2015.

The objectives of this Technical Memorandum are the following:

- Describe the results of the investigations conducted to characterize the nature and extent of constituents in groundwater entering the Site, at the Site, and emanating from the Site;
- Determine from available information and data if there are likely to be unacceptable human health or ecological risks associated with exposure to groundwater discharges emanating from the Site to Indian Ridge Marsh (IRM); and
- Assess whether additional investigations are needed to complete the evaluations of potential human health or ecological risk.

To accomplish these objectives, this Technical Memorandum examines not only the information developed in the RI Site characterization studies, but also data available from prior related studies. Soil, surface water, and groundwater sampling at the Site and adjacent areas has been conducted by USEPA, the City of Chicago Department of the Environment (CDOE), the Illinois Environmental Protection Agency (IEPA), and the U.S. Army Corps of Engineers (USACE). As described in this Technical Memorandum, data from these events were obtained in accordance with standard data quality assurance and quality control procedures accepted by or consistent with those employed by USEPA.

1.2 Site Characterization Objectives

As described in the 2015 RI/FS Work Plan, one purpose of the OU2 RI was to gather information to fill data gaps regarding the Site groundwater and related conditions. The Site characterization objectives of the RI are listed below:

- Establish a well network to evaluate horizontal and vertical hydraulic gradients, hydraulic conductivities, and groundwater flow directions;

- Evaluate the hydrogeological conditions needed to classify Site groundwater according to IEPA regulations;
- Evaluate the horizontal and vertical distribution of constituents in groundwater entering into and emanating from the Site;
- Evaluate the flux of constituents emanating from the Site through groundwater and potentially discharging to IRM; and
- Evaluate constituent contributions to groundwater entering the Site from off-Site sources, including the Paxton I and Paxton II landfills.

In addition, in response to Site conditions encountered, the scope of Site characterization studies was expanded to include an assessment of seeps along the Site perimeter and sampling of light non-aqueous phase liquid (LNAPL) observed at one monitoring well.

1.3 Report Organization

This Technical Memorandum has been organized into the following sections:

Section 1.0 – Introduction. The introduction addresses the purpose of the Technical Memorandum and details how the report is organized.

Section 2.0 – Site Background. The Site background section describes the location, land use, and physical setting of the Site, and Site and regional geology and hydrogeology. This section also provides a summary of historical operations and removal actions, as well as a discussion of previous groundwater investigations.

Section 3.0 – Site Investigations. The Site investigations section describes the RI field activities, including piezometer installation and gauging, hydraulic profiling tool (HPT) investigation, vertical aquifer profiling (VAP), monitoring well installation, and groundwater monitoring.

Section 4.0 – Physical Characterization. The physical characterization section discusses geology and hydrostratigraphy at the Site.

Section 5.0 – Groundwater Assessment. The groundwater assessment presents the results of the quarterly groundwater monitoring and evaluates how constituents are entering into and emanating from the Site.

Section 6.0 – Preliminary Evaluation of Recent LCCS and Historical IRM Data. This section compares Site groundwater data to relevant screening criteria and compares current data with historical IRM data patterns to focus any potential additional investigations.

Section 7.0 – Summary and Conclusions. This section summarizes the Site characterization findings and presents conclusions based on these findings.

Section 8.0 – References. This section lists documents that are cited or discussed in this report.

2 SITE BACKGROUND

This section summarizes existing Site conditions, Site and regional geology and hydrogeology, previously completed removal actions, and prior Site groundwater investigations.

2.1 Location and Surrounding Land Use

The Site is located in a heavily industrialized area in southeastern Chicago, Illinois, southeast of Lake Calumet and approximately two miles northeast of Hegewisch, Illinois (**Figure 1**). The Site consists of an aggregation of four separate parcels (*i.e.*, Alburn Incinerator, U.S. Drum, the Unnamed Parcel, and the Paxton Lagoons). The property is bounded to the west by Land and Lakes #3 Landfill, to the northwest by Paxton II Landfill, to the north by Paxton I Landfill, to the east by the Norfolk Southern Railroad right-of-way and IRM, and to the south by 122nd Street (**Figure 2)**. The current Site layout is shown on **Figure 3.**

2.2 Regional Geology

The Site is located within the Chicago/Calumet Lacustrine Plain, a glacially formed, low crescent-shaped flat surface that slopes gently towards Lake Michigan, located approximately three miles east of the Site. The Lacustrine Plain is primarily a wave-scoured ground moraine with fine lake silts and clays covering the surface in former back-barrier settings. Prominent depositional features on the Plain are sand and gravelly sand spits, mainland beaches, and beach-ridge/dune complexes. This lowland region drains into Lake Michigan.

At the Site, the fill materials are underlain by the Carmi Member of the Equality Formation. This soil is a lake silt and clay that is well bedded, soft, thinly laminated, and locally varved. Lonestones (isolated stones) and lenses of gravel, sand, diamicton, organic debris, and wood are present locally in the silt and clay [Illinois State Geological Survey (ISGS) 2017]. The Carmi Member can be overlain by unmapped Richland Loess, thin eolian sand, swamp deposits, peat, and/or alluvium. Swamp deposits are mucky peat and organic residues mixed with fine-grained mineral sediment in abandoned glacial meltwater channels, ice-block depressions, and other shallow depressions and poorly drained areas. Similarly, peat deposits are fibrous peat and decomposed organic residues with similar origins. The Equality Formation is generally less than 20 feet thick and ranges from 0 to 40 feet thick [Illinois State Water Survey Division (ISWSD) 1990].

The Carmi Member of the Equality Formation is underlain by a silty clay glacial till, of the Wadsworth Till Member of the Wedron Formation. The Wadsworth Till Member ranges from 15 to 40 feet thick. The Wadsworth is underlain by Lemont drift, a gravel and silt that is very hard and dense. The Lemont drift ranges from 10 to 60 feet thick. Beneath the Lemont drift is the Silurian dolomite bedrock.

The bedrock geology consists of Precambrian-age crystalline rock overlain by gently dipping Paleozoic sedimentary bedrock units. The uppermost bedrock consists of eastward gently dipping Silurian dolomite. The bedrock surface topography is an undulating plain as a result of glacial and some lake erosion in which scattered steep valleys and low bedrock hills occur. The bedrock is overlain by approximately 50 to 100 feet of unconsolidated Quaternary-age deposits, which are composed primarily of dark gray, silty clay till overlain by medium- to fine-grained sands. The till deposits are assigned to the

Wadsworth Formation of the Wedron Group, and the sands are assigned to the Carmi Member of the Equality Formation [U.S. Geological Survey (USGS) n.d.].

2.3 Site Geology

Shallow Site geology was expected to consist of fine-grained silty clays of the Wedron Formation and sands locally referred to as the Dolton Sand and interpreted on a state-wide basis as a component of the Carmi Member of the Equality Formation. Historical information suggests that the Dolton Sand unit may have been removed at the Site as part of historical development of the Calumet Region. Underlying these units are the Silurian bedrock deposits present at 50 to 100 feet below ground surface (bgs) regionally, followed by Ordovician and Cambrian units. None of these bedrock units are significant sources of potable water in the vicinity of the Site.

During Site investigations (as discussed further below), geologic observations indicated that native shallow unconsolidated materials at the Site had been removed and replaced with fill or waste material. The shallowest native geologic unit at the Site was a low-permeability silty clay, which was encountered immediately beneath anthropogenic fill deposits and extended to the maximum depth of all soil borings completed.

2.4 Indian Ridge Marsh Hydrology

The discussion presented in this section on the hydrology of IRM is based primarily on information presented in an assessment of the hydrology of the marsh completed by the Illinois State Water Survey (ISWS) (Roadcap *et al*. 1999) and the City of Chicago's Hydrologic Master Plan for the Calumet Area (V3 2006). IRM is part of a series of open spaces in the Lake Calumet area that includes Big Marsh, Heron Pond, and Dead Stick Pond (**Figure 4)** IRM consists of several separate pools (North Pool, South Pool, and the Eastern Pools) that are hydraulically connected to the Calumet River.

Historically, prior to development of the Calumet Area, these wetland areas were much more extensive and were directly connected to Lake Calumet. However, during the initial development of the wetland areas in the late 19th century, large amounts of fill were used to raise the low-lying areas for development. There have been a number of studies conducted to characterize the nature of the fill deposits in the Calumet Area. The main types of fill reportedly used in the Calumet Area included slag from nearby steel mills, dredge spoils from the channelization of the Calumet River, demolition debris, and municipal and industrial wastes (Roadcap *et al*. 1999; USGS 1997). As a result of the historical fill activities, hydrologic flow patterns in the Calumet Area were altered and the previous extensive wetland areas were reduced to smaller pools, such as IRM, that are interspersed with the primarily industrial and commercial development in the area.

Based on the results of a topographic survey completed by the ISWS in 1999, the total wetland area in IRM was estimated to be approximately 92 acres. At the time of the ISWS survey, the surface areas of the North Pool, South Pool, and combined Eastern Pools were 49, 26, and 17 acres, respectively. There is an inlet to the North Pool from the former Acme Coke Plant located directly to the north of IRM (V3 2006). At one time, there were three culverts located beneath the railroad tracks immediately south of 116th Street that conveyed surface water runoff from Paxton I Landfill to IRM (Roadcap *et al.* 1999). In the

2006 Calumet Area Hydrologic Master Plan, V3 indicated that those culverts had been abandoned. The specific date of abandonment was not reported.

IRM is located in an urbanized watershed and thus surrounding properties could be influencing the surface water flow of the marsh. Surface water flow in the marsh is from north to south. There is a main channel that runs along the western edge of the marsh adjacent to the Norfolk and Southern railroad tracks. The channel is approximately 50 feet wide and extends along the entire length of the marsh. The estimated area within the Calumet Area watershed boundary that drains to the North Pool of IRM is approximately 185 acres (V3 2006).

Discharge from the North Pool of IRM to the South Pool is controlled by an outfall structure consisting of an inlet box and attached 24-inch corrugated metal pipe culvert that runs under 122nd Street connecting the North and South Pools. Under normal and low-stage conditions, water flows from the South Pool of IRM into the Calumet River.

As part of the IRM restoration project completed by the USACE in 2015 (see section 2.8), debris was removed from the inlet box of the outfall structure in the North Pool and a water control structure was installed south of 122nd Street.

2.5 Historical Site Operations and Removal Actions

The Site has a long history of waste disposal activities dating back more than a century. Fill operations in the Calumet Region of Northwestern Indiana and Northeastern Illinois appear to have occurred before 1880 (USGS 1997). Several documents report that, in the Lake Calumet region, beginning in the early 1900s, nearby industries disposed of slag and other wastes that raised the ground surface to an elevation just above the water table. In describing the Site in its "National Priorities List (NPL) Site Narrative," USEPA states the following (USEPA 2010):

> The Site was originally a wetland. Various excavation, filling, and dumping activities occurred from the 1940's to the 1980's. The Site is now covered by as much as 30 feet of fill consisting of various materials, including steel mill slag and industrial, chemical, and municipal waste.

Historical operations and removal actions at each of the four parcels included in the Site are summarized below. The four parcels are shown on **Figure 2.** The boundary with Paxton I landfill on the north is virtually indistinguishable, with no clearly defined fence line, differential land use, or topographic inclination.

Alburn Incinerator: The Alburn Incinerator facility (9± acres) was located at 2200 119th Street and was operated as an industrial waste incinerator and storage facility (Agency for Toxic Substances and Disease Registry [ATSDR] 2009). Evidence of waste disposal operations dates from the period beginning in approximately 1958 and continues to approximately mid-1983.

In the 1950s through approximately 1962, an entity known as the "Southside Landfill" operated in an area that included what later became the area of operations of the Alburn Incinerator, and from approximately 1962 to 1972, the Cal Harbor Landfill conducted waste disposal operations in this portion of the Site. In the 1970s, Earth II began operating on the Alburn Incinerator area of the Site (PRC Engineering 1986). A February 1974 IEPA inspection report of the Earth II facility describes its operations as primarily a landfilling operation, but notes that some liquid wastes were being received (*e.g.*, waste solvents, waste

oils, wastewater) from various industries, and further notes that burnable material was being dumped into one of three 8,000-gallon open pits (IEPA 1974).

In January 1975, IEPA issued a permit to Earth II to operate an incinerator (IEPA 1975). In February 1977, Cal Harbor took over the operations of Earth II on the Alburn Incinerator area of the Site (IEPA 1977). In September 1978, Cal Harbor entered into a lease with Alburn, Inc. to take over the operations of the incinerator. In March 1979, Alburn, Inc. contracted with Chemical Incineration, Inc. to operate the incinerator, and Chemical Incineration, Inc. operated the Alburn facility until September 1979 (PRC Engineering 1986). By December 1979, Alburn, Inc. had terminated the Chemical Incineration contract and again taken over operation of the incinerator on the Alburn Incinerator area of the Site (Hagarty 1979; IEPA 1982). From 1980 to 1982, it appears that Alburn, Inc. continued to operate the incinerator (Pierard 1983). Available documentation shows that, as of a June 1983 USEPA Site inspection, another company, known as "American Incineration," was operating the incinerator at the Alburn Incinerator area of the Site.

In 1983, USEPA removed 36 bulk storage tanks, 6,000 drums, 239 five-gallon buckets, and 174,000 gallons of waste from a lagoon at the Alburn Incinerator Site. Surface soil was removed to a depth of 6 inches, and at least part of the Site was covered with a 2-foot clay cap (ATSDR 2009).

U.S. Drum: The U.S. Drum facility (5.6± acres) was located at 2400 119th Street. The beginning of waste disposal operations specific to the U.S. Drum portion of the Site is difficult to identify. The U.S. Drum portion of the Site had been used as a disposal area for municipal and industrial wastes since the 1940s (PRC Engineering 1986). Thereafter, it was used as a waste transfer and solvent recovery facility, and later as a temporary storage and transfer facility for waste drums (ATSDR 2009). By the early 1970s, some type of drum staging operation was occurring on the U.S. Drum area of the Site (Hagarty 1984).

By 1975, the Earth II company was operating a waste transfer and solvent recovery facility, and a fire occurred on July 4, 1975. Operations on the U.S. Drum area were abandoned shortly thereafter, leaving behind 1,000 to 1,750 drums on the Site (IEPA 1976). The storage and transfer facility was closed in 1979, at which time an estimated 34,100 gallons of waste were removed. In 1984, USEPA conducted an emergency removal at the U.S. Drum Site, which included the removal of 435 cubic yards of soil, 62,000 gallons of standing water, and 3,000 drums. The areas of waste removal were then capped with clay and topsoil (ATSDR 2009).

Unnamed Parcel: There is little information available regarding the history of the Unnamed Parcel (38± acres). It is suspected that this area was filled at various times with dredged materials from the Calumet River, slag wastes from nearby steel mills, demolition debris, and municipal wastes (ATSDR 2009).

Paxton Lagoons: The Paxton Lagoons parcel (13 acres) was used as an industrial disposal Site beginning in the 1950s (ATSDR 2009). By mid-1985, it appears that landfill activities at the Paxton Avenue Lagoons had been suspended (John Mathes & Associates, Inc. 1985). Beginning in 1989, IEPA conducted a removal action at the Paxton Lagoons in which the lagoons were drained and approximately 16,000 tons of impacted soil were excavated and processed through an on-Site mobile incinerator. USEPA conducted an emergency removal at the Paxton Lagoons area in 1990, removing 60 drums of waste materials and 2,200 cubic yards of acidic soil. IEPA subsequently placed an engineered clay cap atop the closed lagoons and fenced the Paxton Lagoon area in October 1993.

2.6 Operable Unit One

As indicated in Section 1.0, remedial activities at the Site have been divided into two operable units. Operable Unit 1 (OU1) is intended to provide source control related to impacted soils and buried waste materials present at the Site. OU1 also addresses potential human health and ecological exposure pathways related to direct contact and potential migration of constituents via surface water runoff and soil erosion. IEPA was the lead agency for the planning, design, and implementation of the remedy for OU1.

IEPA prepared a Focused Feasibility Study (FFS; Ecology & Environment, Inc. (E&E) 2006) to evaluate capping alternatives for OU1. Following completion of the FFS, IEPA issued a Proposed Plan and Record of Decision (ROD) for OU1 in September 2006 (IEPA 2006), which was approved by USEPA. The alternative selected by IEPA in the ROD consisted of placement of a low-permeability clay cap over the Site that meets the IEPA requirements for closure of a hazardous waste land disposal facility. IEPA initiated construction of the capping remedy in 2007, but stopped construction before completing the grading layer that was intended to establish slopes and serve as the subgrade for the final cover system.

2.7 Prior Groundwater Investigations

This section summarizes the available groundwater sampling results from the historical monitoring well network (shown on **Figure 5**). These wells were not available for the OU2 RI; in the meeting among the LCCS Group, USEPA, and IEPA representatives on July 7, 2012, IEPA indicated that existing monitoring wells at the Site were destroyed during the IEPA OU1 grading layer construction, and those monitoring wells no longer exist. There do not appear to be any logs that define how these wells were abandoned.

Groundwater investigations at the Site began in 1998, when E&E, on behalf of IEPA, collected three Geoprobe® water samples (GW1 through GW3). In April 1999, E&E, on behalf of IEPA, installed several monitoring wells (LC01 through LC07 and LC09 through LC13) to supplement an older monitoring network (P01 through P05) that previously had been installed at the Alburn Incinerator parcel, and monitoring well G21S, which had been installed at the U.S. Drum parcel. Monitoring wells LC02 and LC11 were screened completely within native soils. Monitoring wells LC01, LC03, LC06, LC10, LC13, and P02 were screened completely within fill material. The remaining wells (LC04, LC05, LC07, LC09, LC12, P01, P03, and P04) were screened across the fill/native soil interface. No boring logs are available for monitoring wells P05 and G21S. Three nested well pairs were created as part of the 1999 groundwater investigation using newly installed and previously existing monitoring wells. These well pairs are: P05/LC07, LC09/LC10, and LC11/LC12.

IEPA sampled 18 monitoring wells (P01 through P05, LC01 through LC07, LC09 through LC13, and G21S) in 1999 (E&E 1999). The groundwater samples were analyzed for a suite of constituents, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), total and dissolved metals, and nitrogen compounds (*i.e.*, ammonia, total cyanide, total Kjeldahl nitrogen, and nitrate-nitrite). The approximate locations of the Geoprobe® borings and monitoring wells sampled by E&E in 1999, which include monitoring well locations at the Site and at Paxton I and Paxton II landfills, are shown on **Figure 5**.

In 2002, IEPA performed a groundwater monitoring event that included many of the same wells sampled in 1999, in addition to several wells located on the Paxton I and Paxton II landfills. The groundwater samples were analyzed for VOCs; SVOCs; pesticides; PCBs; and a suite of inorganic parameters,

including total metals, nitrogen compounds, sulfate, phosphate, chloride, total dissolved solids, total suspended solids (TSS), and cyanide.

IEPA's contractor, E&E, conducted an additional groundwater monitoring event in March 2007. Groundwater levels were measured at 14 existing Site monitoring wells (LC05, LC06, G104, LC12, LC11, LC03, E, G20D, G20S, LC02, R21S, R21D, G21D, and G21S), and samples were collected at 12 of these wells (LC05, LC06, G104, LC12, LC11, LC03, E, G20S, LC02, R21S, R21D, and G21S). Collected samples were analyzed for VOCs, SVOCs, and selected metals.

2.8 USACE Indian Ridge Marsh Restoration Project

2.8.1 Site Setting and Description

IRM is an undeveloped, disturbed marshland that lies immediately to the east of the Site. It is bounded by heavy industrial sites across Torrence Avenue on the east, 116th Street on the north, Norfolk Southern Railroad tracks on the west, and the Sidestream Elevated Pool Aeration (SEPA) station on the south. The marsh, considered a Palustrine wetland in an urban watershed, occupies more than 185 acres on the southeast side of Chicago between Lake Calumet and the Calumet River. It was originally located adjacent to the shoreline of Lake Calumet and was a mixed wetland and sand prairie (Smalley *et al*. 2001). In the late 19th century, the marshes in the Lake Calumet region were filled to create dry ground. The fill included slag, river dredging spoils, cinders, fly ash, and other types of solid waste. Some records indicate that IRM may have been mined for sand (Smalley *et al*. 2001). Filling activities at IRM intensified after 1930 with materials including dredging spoils and construction debris.

Aerial photographs of IRM were reviewed from 1938, 1952, 1959, 1964, 1973, 1988, 1998, 2009, and 2012. These photos document filling operations at IRM going back to 1938, as described above. The marsh appears in its current configuration beginning in the 1988 photograph.

The USACE completed a restoration project in IRM in 2015 that involved vegetative habitat improvement, aquatic habitat improvements, hydraulic controls, and improved public access. Specifically, invasive plant species were removed using herbicides and prescribed burning, and new plants were established to improve a variety of habitats and provide stabilization and decrease sediment runoff for the upland areas. Leaf compost inoculated with mycorrhiza was also incorporated into select upland areas. The leaf compost increases the organic carbon in the soils to facilitate binding of metals, pesticides, and polycyclic aromatic hydrocarbons (PAHs). Hydraulic control measures undertaken included cleaning the culvert under 122nd Street and installing a water control structure south of 122nd Street within the ditch that connects with the Calumet River. Finally, the USACE removed 500 tons of debris including approximately 1,000 tires, improved the trail system, and constructed a boardwalk to link the IRM trail system to the SEPA station along the Calumet River. Results of sampling conducted by the USACE in IRM indicated that removal of sediments was not necessary to meet the goals of the ecological restoration project.

2.8.2 Indian Ridge Marsh Data

As part of the USACE restoration project, Tetra Tech assessed the potential ecotoxicity of environmental media (soil, surface water, sediment) in IRM on behalf of the USACE. Results are documented in the

Ecotoxicological Evaluation prepared by Tetra Tech in 2008 and in the 2009 Addendum to the report (Tetra Tech 2008, 2009). Surface water, sediment, and plant tissue data were collected in 1999, 2001, 2002, and 2009 (**Figure 6**).

Ecotoxicological benchmarks and background values were established for the Calumet area by the Calumet Ecotoxicology Roundtable Technical Team in 2007. Two different values were established for sediment and surface water -- Calumet Open Space Reserve (COSR) Threshold and Benchmark values. Relevant background concentrations were also established for the area. In the USACE evaluations, these concentrations were used to screen the data collected from IRM to evaluate whether constituent concentrations have the potential to adversely affect flora and fauna in the marsh (Tetra Tech 2008, 2009). Arcadis reviewed the surface water and sediment sampling data collected during the restoration projects for usability and found them to meet data quality objectives for characterization. This review included a Level IV validation of the 2009 sediment and surface water sampling data (**Appendix A)**. This data validation indicated that the USACE data met the data quality objectives for the project and were usable. These data are included in the comparisons discussed in Section 6.

3 SITE INVESTIGATIONS

The LCCS Group conducted RI activities at the Site between September 2015 and March 2017 to identify and evaluate the nature and extent of groundwater impacts. The principal objectives of the RI work were the following:

- Establish a well network to evaluate horizontal and vertical hydraulic gradients, hydraulic conductivities, and groundwater flow direction;
- Evaluate the hydrogeological conditions needed to classify Site groundwater according to IEPA regulations;
- Evaluate the horizontal and vertical distribution of constituents in groundwater at the Site;
- Evaluate the flux of constituents leaving the Site through groundwater and potentially discharging to IRM;
- Evaluate the constituent contributions to Site groundwater from off-Site sources, including the Paxton I and Paxton II Landfills;
- Inspect for the possible presence of seeps along the Site boundary, especially on the eastern side near the Norfolk Southern Railroad trails, and sample such seeps if found; and
- Characterize LNAPL encountered in monitoring well MW-12.

These objectives have all been met in the completed Site characterization studies. All RI activities were performed in accordance with the following USEPA-approved work plans and other documents:

- Revised RI/FS Work Plan transmitted via letter dated August 21, 2015;
- Health and Safety Plan (HASP) transmitted on July 17, 2015;
- Field Sampling Plan (FSP) transmitted via letter dated July 17, 2015 with errata sheet dated September 30, 2015;

- Quality Assurance Project Plan (QAPP) transmitted via letter dated July 17, 2015 with revised Worksheet #18 transmitted via email on September 10, 2015; and
- QAPP Addendum transmitted on January 26, 2017 to address LNAPL sampling.

USEPA approved the RI/FS Work Plan, FSP, and QAPP on September 30, 2015 and approved the QAPP Addendum on February 8, 2017. The sections below describe each stage of the field investigation.

3.1 Phase 1 Piezometer Installation

Variations observed in the potentiometric surfaces presented in historical reports prompted installation of a network of piezometers across the Site to determine groundwater flow direction. A total of 19 piezometers were installed during this phase of the Site investigation, and locations are shown on **Figure 3**. The piezometers were placed as follows:

- Five shallow downgradient piezometers along the eastern edge of the Site;
- Four shallow upgradient piezometers along the western property boundary;
- Five shallow piezometers in the central portion of the Site; and
- Five deep piezometers clustered with selected shallow piezometers.

The RI/FS Work Plan indicated that six deep piezometers would be installed; however, due to the depth of the clay at PZ-1S, a deep nested piezometer was not necessary.

Piezometer installation began on October 6, 2015 and continued through October 8, 2015. The piezometers were installed using direct-push technology drilling methods. The shallow piezometers were installed to intersect the water table and were screened in the fill unit. The maximum depth of the shallow piezometers was 25 feet bgs. The deep piezometers were paired with the shallow piezometers and were installed in the first sand unit encountered below the fill unit, with a maximum depth of 44 feet bgs. At each location, a continuous soil core was collected from ground surface to the maximum depth of the piezometer being installed. The soil cores were logged to characterize the lithology and determine the depth of the water table.

The piezometers were named PZ-XS or PZ-XD, where X is the number of the piezometer and S or D indicates shallow or deep, respectively. The logs and piezometer construction details are included in **Appendix B**.

The piezometers were constructed of 1-inch-diameter, Schedule 40 polyvinyl chloride (PVC), 10-slot well screen completed with a pre-packed sand filter. The screen was connected to a Schedule 40 PVC riser, which extends to approximately 3 feet above ground surface. Piezometer installation was completed by adding filter sand on top of the pre-pack to increase the sand level to a minimum of 1 foot above the top of the well screen. A hydrated bentonite seal was placed to fill the annulus around the riser to ground surface. The piezometers were capped with expandable well plugs and secured above-grade with a lockable steel surface completion.

Following installation, the piezometers were developed to ensure communication with the surrounding formation. The piezometers were pumped until the water was free of visible sediment, and the pH,

temperature, turbidity, and conductivity were stable within 10% for three consecutive readings. The piezometers then were surveyed to the State Plan Coordinates to establish horizontal locations and North American Vertical Datum (NAVD) 88 to establish elevations.

The piezometers were initially gauged two times following installation to allow evaluation of the potentiometric surface and groundwater flow direction. Gauging was completed on October 12 and 19, 2015. Additional monthly water level measurements were then collected between January 2016 and December 2016 to characterize flow directions and variability. Groundwater level data are included in **Table 1.** Groundwater contour maps were prepared and are included as **Figures 7** through **10** for each quarter of 2016 using the data from March, June, August, and December, respectively.

Groundwater flow is reasonably consistent throughout the year. In the eastern portion of the Site, flow is generally to the east toward IRM and gradients are relatively steeper. In the western portion of the Site, flow is more to the south and southeast and gradients are relatively flatter.

The direction of groundwater flow presented on **Figures 7, 9, and 10** where groundwater elevation contours were inferred was confirmed by vector flow analysis using water level data collected from monitoring wells MW-2, MW-3, and MW-4. An overlay of the vector analysis for these three wells is shown in blue on each of these groundwater elevation maps. The results of the vector analysis confirm that the direction of groundwater flow along the northern perimeter of the Site is in the southeasterly direction. **Figure 8** includes groundwater elevation measurements for both the piezometers and monitoring wells and the resulting contours are consistent with those on **Figures 7, 9 and 10.**

3.2 Phase 2 HPT/VAP Transects

Phase 2 of the investigation included a combination of HPT and VAP borings. The borings were placed based on the results of the piezometer gauging events, and locations are shown on **Figure 3**.

3.2.1 HPT Soundings

Twenty-four HPT borings were completed to determine relative permeability throughout the depth of materials investigated. The HPT is attached to the end of a Geoprobe® drill string that enables a continuously metered injection of a small volume of fluorescent dye and water mixture (50 to 300 milliliters per minute) during advancement of the probe. Simultaneously, the fluid back pressure from the injection into the formation is measured and logged at frequent intervals along with the injection flow data. After correcting for equipment head losses, the flow and pressure are plotted as a relative permeability (or hydraulic conductivity) curve by recognizing that hydraulic conductivity (K) is the constant of proportionality of flow divided by pressure. The resulting data (flow and pressure) from each location are comparable within the vertical profile at each location, as well as between soundings across transects. The logs for the HPT soundings are included in **Appendix C**.

Pneumatic hydraulic conductivity testing was attempted at HPT locations as a way of calibrating or correlating reported relative conductivity values from the HPT soundings to results from conventional slug test methods and quantifying conductivity in areas of high permeability. However, pneumatic slug tests in areas of high permeability generally yielded inconsistent results, and slug tests at direct-push locations were discontinued in favor of later slug testing at conventional monitoring wells.

Geoprobe® soil borings were completed at six of the HPT sounding locations. The detail obtained through classification of the cores retrieved from those soil borings was used to characterize the HPT responses to particular soil lithologies.

3.2.2 Vertical Aquifer Profiling

Prior to beginning VAP, the HPT data were evaluated, and more highly permeable zones were identified at each VAP sampling location. These permeable zones were targeted for collection of VAP samples because they represent the potential areas of highest groundwater flux at the Site. Approximately five samples were collected at each location, and the results are reported in **Table 2**. Each sample is named VAP-HPTX(Y-Z)-date, where HPTX indicates with which HPT location the VAP sample corresponds; (Y-Z) indicates the depth of the sample in feet bgs; and the date the sample was collected is shown as month, day, and year.

Groundwater samples were collected through the drilling rods, which were attached to a Geoprobe® screen-point sampling device. The screen-point sampler was driven to the bottom of the target interval, after which the drill string was pulled up approximately one foot to expose the screen to the target sample interval. A peristaltic pump was then used to purge the sample interval until the water was free of fine-grained material. Once purged, the flow rate was reduced for sample collection.

The VAP groundwater samples were analyzed for VOCs, total and dissolved metals, and ammonia. The laboratory reports and data validation report are included in **Appendix D.**

3.3 Phase 3 Monitoring Well Installation

The data collected during the first two phases of Site characterization were used to determine the locations for the installation of monitoring wells. The proposed locations for monitoring wells were discussed with USEPA and IEPA during a conference call on February 11, 2016. On February 22, 2016, USEPA and IEPA approved a plan to install 13 monitoring wells across the Site.

The wells were installed using hollow-stem auger drilling methods in accordance with the guidelines presented in Section 920.170 of the Illinois Administrative Code (IAC) (Monitoring Wells). The soil boring logs and monitoring well construction details are included in **Appendix E**. Following installation, the permanent monitoring wells were developed to ensure adequate hydraulic communication with the surrounding formation. Development included a combination of surging and pumping development methods and was considered complete when water was free of visible sediment and the pH, temperature, turbidity, and conductivity were stable within 10% for three consecutive readings. The monitoring wells were then surveyed to establish location and elevation.

3.3.1 Monitoring Well Sampling

To evaluate groundwater concentration trends in relation to seasonal changes, the Phase 3 monitoring wells were sampled quarterly for one year (*i.e.*, four sampling events). Sampling events were completed in April, July, and October 2016 and February 2017.

Prior to collecting groundwater samples, the groundwater elevation was measured at each well. Groundwater samples were collected using low-flow sampling methods, and samples were packed on ice

and shipped to the project laboratory in accordance with appropriate chain-of-custody procedures. The parameters analyzed in the groundwater samples were the following:

- Field parameters: dissolved oxygen (DO), pH, conductivity, turbidity, temperature, and oxidation-reduction potential (ORP);
- Target Compound List (TCL) VOCs, SVOCs, PCBs, and pesticides;
- Total and dissolved Target Analyte List (TAL) metals;
- Nitrogen compounds: ammonia-N, nitrate-N, and nitrite-N;
- Geochemical characterization parameters: sulfate, sulfide, TSS, and total organic carbon (TOC); and
- Dissolved gases: methane, carbon dioxide, oxygen, and nitrogen.

Table 3 shows the results of groundwater sampling. The laboratory reports and data validation memos are included in **Appendix F**.

3.4 Other Site Investigations

3.4.1 Seep Investigation

In January 2017, a seep investigation was conducted along the eastern and southeastern perimeters of the Site in response to a request from USEPA. The purpose of the investigation was to determine if there were any areas of water seepage evident along the slopes formed by the cover materials that had previously been placed on the Site by IEPA.

A preliminary Site reconnaissance visit was performed to determine the extent of clearing required for visual inspection of the side slopes. The Site reconnaissance confirmed that the side slopes along the eastern perimeter were overgrown with phragmites, a non-native invasive plant. Arcadis and its subcontractor Environmental Restoration LLC of South Holland, Illinois cleared the Site on December 21 and December 28, 2016 as needed to facilitate the seep inspection.

Two Arcadis field staff returned to the Site on January 19, 2017 to conduct the seep investigation. The inspection consisted of walking along the side slope of the cover materials that extends between the monitoring wells (MW-4 through MW-8, as shown on **Figure 3**) and the piezometers (locations PZ-1 through PZ-5). This slope connects a general area of higher elevation in the central part of the Site where IEPA placed soil cover materials to an area of lower elevation, approximately matching the surrounding grade off Site, near the monitoring wells. One Arcadis observer walked near the middle of the slope, and one walked near the bottom of the slope. A total of three seeps were observed during this inspection. At each seep, general observations regarding location and surroundings were recorded, and water samples were collected.

The samples from the seeps were delivered to TestAmerica Laboratories, Inc. in University Park, Illinois. They were analyzed for TCL VOCs, ammonia, and TAL metals. The results are presented in **Table 4**, and the laboratory report is included as **Appendix G**. There were no exceedances of IAC Part 302 Water Quality Standards or Illinois Derived Water Quality Criteria for any of the parameters analyzed in the seep samples.

Following the seep inspection, Arcadis reviewed the Landfill Cover – Phase 2 design drawings prepared by E&E on behalf of IEPA (E&E, 2009). Arcadis compared those drawings to the Site figure (**Figure 3**) and determined that the seeps appear to be located where the gas collection pipes and surrounding backfill, described on Drawing 8 and Drawing 15 of E&E's Landfill Cover drawings, are exposed. However, the lack of documentation regarding construction of the grading layer and Site infrastructure, combined with the incomplete nature of the cap construction, constitute significant uncertainty regarding the presence and configuration of potential drainageways or flow paths in surface and near-surface materials deposited as part of OU1 activities. The findings of the seep investigation are described in more detail in the March 3, 2017 Technical Memorandum titled December 2016/January 2017 Seep Investigation (Arcadis 2017).

3.4.2 LNAPL Sampling

During the second quarterly groundwater monitoring event in July 2016, LNAPL was observed in MW-12. The in-well LNAPL thickness observed was approximately 0.5 foot. Following this observation, the LCCS Group elected to sample the LNAPL to characterize its chemical composition. The presence of LNAPL had not been noted in prior groundwater sampling reports for the Site, and no LNAPL was observed in any of the other 12 monitoring wells in 4 sampling rounds.

A revised QAPP Addendum submitted to USEPA on January 26, 2017, included procedures for sampling and analyzing the LNAPL. USEPA approved the QAPP on February 8, 2017, and the LNAPL in MW-12 was subsequently sampled on March 2, 2017. The LNAPL was collected using a bailer to avoid any mixing of water and LNAPL. The sample was delivered to the project laboratory and analyzed for PCBs, SVOCs, and VOCs. Those results are included in **Table 5** and were submitted to USEPA on May 5, 2017. The laboratory report is included in **Appendix H**.

4 PHYSICAL CHARACTERIZATION

4.1 Site Geology

The geology at the Site was characterized using the lithologic logs collected during the various phases of the investigation. The geology consists primarily of fill overlaying a low-permeability native clay.

The uppermost unit encountered at the Site was a silty clay fill material placed by IEPA as part of grading layer construction related to OU1. The thickness of this grading layer material varies and was encountered down to a maximum depth of approximately 10 feet. Underlying the grading layer is a unit of fill consisting of solid and municipal wastes varying from industrial/demolition debris (*e.g.*, slag, metal pieces, bricks) to household wastes such as newspaper and rags. The fill layer had a maximum thickness of 22 feet based on the piezometer boring logs. At some soil boring locations, sand was observed within the fill layer; however, at each location where this material was observed, it was identified as fill and not native sand based on the presence of anthropogenic materials such as wood or glass within the sand layers.

Beneath the fill layer, a silty clay was encountered at each location. This clay was encountered at all deep borings that penetrated the entire thickness of the fill material and represents the only native material encountered in the stratigraphic profile. The composition of the clay indicated a very uniform and

very low-permeability material. The base of the clay layer was not encountered during drilling, but the clay was still present as deep as 44 feet bgs.

Native sand deposits were not encountered at any boring location on the Site. Detailed boring logs are included in **Appendices B and E.**

4.2 Site Hydrostratigraphy

The hydrostratigraphy at the Site is defined by the three primary units described in Section 4.1:

- The silty clay fill (grading layer);
- The combined thickness of the municipal/industrial waste fill, and
- The underlying clay.

The key hydrogeologic characteristics of each unit are summarized below:

- The silty clay unit (grading layer) is generally unsaturated and has low permeability.
- The primary water-bearing unit is the municipal/industrial waste fill unit. The highly variable composition of this unit results in a range of permeabilities, as shown in the HPT logs and slug test results, included as **Appendices C** and **I,** respectively. This variable permeability is consistent with the heterogeneity introduced during the placement of the fill material and the different composition of the fill.
- The clay unit underlying the fill material represents the vertical limit of groundwater flow originating at the Site. The low permeability, uniform composition, and significant thickness of this unit do not provide a pathway for groundwater to migrate vertically in to the deeper permeable units.

Water level measurements were collected from the piezometers on a monthly basis for a period of one year (**Table 1).** As previously noted in Section 3.1, groundwater contour maps were prepared and are included as **Figures 7** through **10** for each quarter of 2016 using the data from March, June, September, and December, respectively. The groundwater contour maps presented as **Figures 7** through **10** show that groundwater flow in the municipal/industrial waste fill unit is reasonably consistent throughout the year. In the eastern portion of the Site, flow is generally to the east toward IRM and gradients are relatively steeper. In the western portion of the Site, flow is more to the south and southeast and gradients are relatively flatter. A vector analysis was completed for wells MW-2, MW-3, and MW-4 that confirmed flow in the northeastern portion of the site is in the southeasterly direction.

As discussed in Section 3.4.1, the only seeps along the eastern side slopes of the Site appeared to be related to the partially constructed IEPA cap. Those discharges were all sampled and analyzed for VOCs, metals, and ammonia, and the results were all below IAC Part 302 Water Quality Standards and Illinois Derived Water Quality Criteria.

5 GROUNDWATER ASSESSMENT

This section presents the results of groundwater sampling conducted to determine the distribution of constituents in groundwater entering and emanating from the Site. This assessment is based on the

results of four rounds of quarterly groundwater sampling completed during the current investigation at newly installed monitoring wells MW-1 through MW-13 (**Figure 3**), as well as the results of sampling during previous groundwater investigations conducted at LCCS in 1999, 2002, and 2007. Overall, the results indicate that generally the concentrations of constituents detected in groundwater emanating from the Site along the eastern and southern perimeter are lower or similar to the concentrations of constituents detected in groundwater entering the Site along the western and northern perimeters. Also, many of the constituents were detected at concentrations below screening levels, as described in more detail in Section 6.

5.1 Nature and Extent of Constituents in Groundwater

The review of the groundwater sampling results in this section is presented by constituent groups, as well as by individual constituents chosen to best represent the distribution of important compounds at and adjacent to the Site.

Groups of constituents detected in groundwater include inorganics, PCBs, SVOCs, and VOCs.

For each constituent group, as well as the representative individual constituents, the presence and distribution are described by the following areas:

- Western perimeter of the Site adjacent to the Land & Lakes Landfill;
- Northern perimeter of the Site adjacent to the Paxton I and II Landfills;
- Eastern perimeter of the Site adjacent to the IRM;
- Southern perimeter of the Site adjacent to East 122nd Street; and
- Surrounding the Site (i.e. Paxton I and II Landfills).

As discussed in Section 4.2, groundwater flow in the eastern portion of the Site is generally to the east and in the western portion of the Site trends south to southeast. As such, the western and northern perimeters are generally hydraulically upgradient of most Site areas, and the eastern and southern perimeters are generally hydraulically downgradient.

Tables 6 to 9 present the results of the fourth quarterly monitoring event and use color gradation to illustrate the relative distributions of constituents within a constituent group. The results from all four quarters of data were very similar and the fourth monitoring event was chosen as a representative data set. Concentrations in the lowest 50th percentile are shaded blue; the lowest concentrations are dark blue, while those concentrations approaching the midpoint of all concentration data are light blue. Alternatively, data in the highest 50th percentile are shaded red; the concentrations near the midpoint are light red while the highest concentrations are dark red. In addition, the relative distributions for selected constituents and constituent groups are represented on areal maps (**Figures 11 to 18**). On these figures, the wells with generally high concentrations of constituents are red while wells with relatively low concentrations of those same constituents are blue. These figures also include previous data that show the Site groundwater concentrations in the context of the groundwater conditions surrounding the Site.

For certain constituents, the relative distribution is represented by the profiles in **Appendix J** for the western, northern, and eastern perimeters of the Site. Profiles were not prepared for the southern perimeter of the Site, where constituent concentrations in groundwater were generally low.

Inorganics

The inorganics are discussed below in three different groups: inorganics as a group, manganese, and ammonia. These groupings were chosen to best represent the distribution of inorganic constituents in groundwater entering and emanating from the Site.

Inorganics were detected in groundwater along the perimeter of the Site and surrounding the Site. During previous investigations in 1999, 2002, and 2007, inorganics were detected in the groundwater within and adjacent to the Paxton I Landfill, along the eastern perimeter of the Site and within the Site. **Figure 11** depicts the relative concentrations of inorganics at and surrounding the Site.

Most inorganics were detected along the western and northern perimeters of the Site as well as the eastern and southern perimeters of the Site. Furthermore, the same inorganics have also been detected within and adjacent to the Paxton I and II Landfills during the current Site investigation and previous sampling events. The highest metals concentrations were generally observed at wells MW-06 and MW-07. Overall metals concentrations in groundwater were similar along the perimeter of the Site and surrounding the Site (from current and previous sampling events) in the majority of well samples.

Manganese

Manganese was detected in groundwater along the perimeter of the Site and surrounding the Site. In addition, during the 1999 and 2002 sampling events, manganese was detected in groundwater within and adjacent to the Paxton I Landfill along the eastern and southern perimeters of the Site and within the Unnamed Parcel, within the Alburn Incinerator portion of the Site, and within the US Drum portion of the Site. **Figure 12** depicts the relative concentration of manganese at and surrounding the Site.

The relative ranges of manganese concentrations (in ug/L) by areas are summarized below:

Western Perimeter	Northern Perimeter	Eastern Perimeter	Southern Perimeter	Surrounding Site
ND to 2,600	ND to 1,700	ND to 2,400	ND to 8,520	ND to 13,700

Along the eastern perimeter, higher manganese concentrations were observed at well MW-04, and along the southern perimeter, higher manganese concentrations were observed at well MW-10. Higher manganese concentrations were also observed at MW-12 (Paxton Lagoon area). In contrast to other inorganics, lower concentrations of manganese were observed at wells MW-06 and MW-07. The highest (by an order of magnitude) manganese concentration was observed at LC01 (13,700 ug/L in 1999) within the Paxton Landfill. Manganese concentrations in the remaining groundwater samples are similar along the perimeters of the Site as well as surrounding the Site within and adjacent to the Paxton I Landfill including the eastern perimeter of the landfill adjacent to the IRM.

Ammonia-Nitrogen

As shown in **Table 6**, ammonia-nitrogen was detected in groundwater both entering and emanating from the Site. In addition, during the 1999 and/or 2002 sampling events, ammonia-nitrogen was detected in groundwater within and adjacent to the Paxton I Landfill, within the northern portion of the Paxton II Landfill, along the eastern and southern perimeters and within the Unnamed Parcel, within the Alburn Incinerator portion of the Site, and within the US Drum portion of the Site. **Figure 12** depicts the relative concentrations of ammonia-nitrogen at and surrounding the Site.

The relative ranges of ammonia- nitrogen concentrations (in milligrams per liter [mg/L]) by areas are summarized below:

Western Perimeter	Northern Perimeter	Eastern Perimeter	Southern Perimeter	Surrounding Site
19 to 440	14 to 98	5.3 to 870	19 to 140	1 to 800

Along the western, northern, and southern perimeters of the Site, the ammonia-nitrogen concentrations were generally low. Along the eastern perimeter, higher ammonia-nitrogen concentrations were observed at wells MW-06 and MW-07, which are on the southern end of the eastern perimeter, adjacent to the Unnamed Parcel. The lowest ammonia-nitrogen concentrations were observed at wells MW-04 (eastern perimeter, northern end adjacent to the US Drum parcel) and MW-10 (west side of southern perimeter). Overall, the highest ammonia-nitrogen concentrations observed at LC01 and G24D (Paxton I Landfill) are similar to the concentrations observed at MW-06 and MW-07. The remaining ammonia-nitrogen concentrations in groundwater are similar along the perimeters of the Site as well as surrounding the Site.

PCBs

As shown on **Table 7,** PCB Aroclors 1242 and 1254 were only detected in the groundwater along the eastern perimeter at wells MW-06 and MW-07 adjacent to the Unnamed Parcel. During the previous sampling event in 2002, total PCBs were detected along the eastern perimeter of the Unnamed Parcel, within the US Drum portion of the Site, within the Unnamed Parcel, along the eastern perimeter of the Paxton I Landfill adjacent to the IRM and within the Paxton I Landfill, and along the southern perimeter of the Site. **Figure 14** depicts the relative concentration of total PCBs at and surrounding the Site.

Overall, PCBs are sporadically detected at and surrounding the Site. The highest concentration of total PCBs observed in the study area, including the area surrounding the Site (11,000 ug/L) were detected at well G24D within the Paxton I Landfill.

SVOCs

SVOCs detected in the groundwater at and surrounding the Site include phenols, PAHs, phthalates, as well as other miscellaneous SVOCs. As shown in **Table 8**, SVOCs were detected in groundwater along the perimeter of the Site and surrounding the Site. During previous investigations in 1999, 2002, and 2007, SVOCs were detected in the groundwater within and adjacent to the Paxton I landfill, along the eastern perimeter of the Site and within the Unnamed Parcel, within the Alburn Incinerator portion of the Site, and within the US Drum portion of the Site. **Figure 15** depicts the relative concentration of SVOCs at and surrounding the Site.

Relatively higher concentrations of SVOCS were detected in the groundwater from well MW-13 along the western perimeter, wells MW-02 and MW-03 along the northern perimeter, and MW-07 along the eastern perimeter of the Site. Lower SVOC concentrations were observed at wells MW-01 (northern perimeter), MW-05 (eastern perimeter), MW-08 to MW-10 (southern perimeter), and MW-11 (western perimeter). In addition, higher SVOC concentrations were also detected in the groundwater from wells G24S and LC01 within the Paxton I Landfill. The highest groundwater concentrations (one to three orders of magnitude higher than other concentrations) were generally observed at well MW-12 (Paxton Lagoon area) and well LC01 (Paxton I Landfill). In the remainder of the wells, where detected, SVOC concentrations in groundwater were similar along the perimeters of the Site and surrounding the Site. Overall, SVOCs

were generally detected less frequently in the groundwater at and surrounding the Site compared to other constituents.

VOCs

VOCs were detected in groundwater along the perimeter of the Site and surrounding the Site. During previous investigations in 1999, 2002, and 2007, VOCs were detected in the groundwater within and adjacent to the Paxton I Landfill, along the eastern perimeter of the Site and within the Unnamed Parcel, within the Alburn Incinerator portion of the Site, and within the US Drum portion. **Figure 16** depicts the relative concentration of VOCs at and surrounding the Site.

Along the western perimeter of the Site, higher VOC concentrations were observed at wells MW-11 and MW-13. Along the northern perimeter of the Site, higher VOC concentrations were observed at wells MW-01 and MW-02. Along the eastern perimeter, higher VOC concentrations were observed at MW-04. Lower VOC concentrations were observed at MW-03 (northern perimeter) and MW-08 to MW-10 (southern perimeter). The highest off-Site VOC concentrations were observed at wells LC01 and G13S within the Paxton Landfill, and the highest VOC concentrations were observed at MW-13 (northern perimeter) and MW-12 (Paxton Lagoon area). The remaining VOC concentrations in groundwater are similar along the perimeters of the Site as well as surrounding the Site within and adjacent to the Paxton I Landfill.

Benzene, Toluene, Ethylbenzene, and Xylene (BTEX)

As shown in **Table 9** and on **Figure 17**, the relative distribution of BTEX is similar to the VOC distribution along the western (higher concentrations) and southern (lower concentrations) perimeters of the Site as well as within the Paxton I Landfill. However, along the northern perimeter, BTEX concentrations were generally lower than other VOCs and along the eastern perimeter BTEX concentrations were lower than other VOCs except at well MW-07 where higher BTEX concentrations were observed compared to VOCs. The highest BTEX concentrations were observed at MW-13 (northern perimeter) and MW-12 (Paxton Lagoon area). The remaining BTEX concentrations in groundwater are similar along the perimeters of the Site as well as surrounding the Site within and adjacent to the Paxton I Landfill. The relative ranges of BTEX concentrations (in ug/L) by areas are summarized below:

Western Perimeter	Northern Perimeter	Eastern Perimeter	Southern Perimeter	Surrounding Site
ND to 25,000	ND to 290	ND to1,800	ND to 2.8	ND to 1,800

Vinyl Chloride

As shown in **Table 9** and on **Figure 18,** the relative distribution of vinyl chloride at and surrounding the Site is different from the overall VOC distribution. The relative ranges of vinyl chloride concentrations (in ug/L) by areas are summarized below:

Western Perimeter	Northern Perimeter	Eastern Perimeter	Southern Perimeter	Surrounding Site
ND to 420	ND to 0.48	ND to 13	ND to 0.5	ND to 84

Along the western perimeter of the Site, higher vinyl chloride concentrations were observed at well MW-13. Along the northern and southern perimeters of the Site, vinyl chloride concentrations were low or non-detect. Along the eastern perimeter, higher vinyl chloride concentrations were observed at well MW-07 adjacent to the Unnamed Parcel in the southern portion of the Site. The highest vinyl chloride concentrations were observed at MW-12 (Paxton Lagoon area) and LC01 (Paxton I Landfill). Overall, vinyl chloride is sporadically detected at and surrounding the Site.

5.2 Summary

As demonstrated in the detailed evaluation of the frequently detected groundwater constituents, the following summarizes the nature and extent of these constituents in groundwater:

Metals: Antimony, cobalt, copper, mercury, and selenium were detected infrequently at low concentrations. When detected, the concentrations of these metals are the same along the perimeters where groundwater is entering the Site as well as in off-site wells surrounding the Site.

Arsenic, cadmium, chromium, lead, manganese, nickel, vanadium, and zinc were detected more frequently at higher concentrations. The higher concentrations are similar in perimeter wells monitoring where groundwater is entering the Site, as well as within and along the perimeters of the Paxton I and/or II Landfills.

PCBs: PCBs were detected infrequently at low concentrations that are significantly lower along the perimeters of the Site as compared to the surrounding groundwater conditions within the Paxton I Landfill. During the first quarterly groundwater sampling event, prior to the appearance of LNAPL in MW-12, PCBs were not detected in the groundwater sample collected from MW-12.

SVOCs: Phenols, PAHs, and several miscellaneous SVOCs were detected infrequently at low concentrations that are generally lower along the eastern perimeter of the Site as compared to the western and northern perimeters as well as within the Paxton I Landfill.

VOCs: Chlorinated VOCs, ketones, a few miscellaneous VOCs were detected infrequently at low concentrations that are lower or similar along the eastern perimeter of the Site as compared to the western and northern perimeters of the Site.

BTEX and vinyl chloride were detected more frequently than the other VOCs. The concentrations are lower or, in the case of benzene, similar along the eastern perimeters of the Site as compared to the western and northern perimeters as well as within the Paxton I Landfill.

These patterns suggest the area-wide presence of constituents surrounding the Site (*i.e.*, Paxton I Landfill, Paxton II Landfill) result in upgradient concentrations (background) entering the Site that are approximately equivalent to concentrations in groundwater emanating from the Site. For many constituents, the concentrations in groundwater entering the Site and surrounding the Site are higher than the concentrations in groundwater emanating from the Site. In addition, these

patterns indicate constituents are present along the eastern perimeter adjacent to the IRM both along the Site, as well as along the Paxton I Landfill (notably relatively higher metal concentrations at HPT-25 and well LC02 in Paxton I Landfill). The potential for groundwater to impact the IRM is discussed in Section 6.

6 PRELIMINARY EVALUATION OF RECENT LCCS AND HISTORICAL IRM DATA

This section presents the results of preliminary screening evaluations designed to determine if groundwater emanating from LCCS into IRM has the potential to pose a risk to either human health or the environment. Sections 4 and 5 of the RI/FS Work Plan for OU2 describe the approach to the Baseline Human Health Risk Assessment (BHHRA) and Baseline Ecological Risk Assessment (BERA), respectively. This section is not designed to replace either of those two assessments nor is it designed to replace any particular section of those assessments (such as the selection of constituents of concern (COCs)). Rather, its goal is to use methods available within the human health and ecological risk assessment paradigm to provide preliminary screening evaluations that show the likely findings of a BHHRA and BERA evaluating the potential risk associated with groundwater venting into IRM from LCCS. Developing a preliminary sense of the outcomes of the BHHRA and BERA will inform and expedite the process of completing the RI phase of the work.

The RI/FS Work Plan included a list of potential human health and ecological screening criteria. The screening evaluation presented in this Technical Memorandum includes comparisons of environmental media concentrations to those benchmarks. However, because some of those benchmarks are derived using exposure scenarios that are not representative of current and reasonably foreseeable futures uses of IRM (*e.g.*, use of either the groundwater emanating into IRM or IRM surface water as a potable water supply), concentrations are also compared to alternative IRM-specific benchmarks that are based on exposure scenarios consistent with current and reasonably foreseeable future uses (*e.g.*, recreational use of IRM). Screening evaluations are presented by environmental medium (*i.e.*, groundwater emanating into IRM, IRM surface water, IRM sediments). For each environmental medium, the human health screening evaluation is presented first, followed by the ecological screening evaluation. The conclusions of the screening evaluations also consider the spatial distribution of constituents in IRM and whether that distribution suggests that groundwater emanating from the LCCS could be a principal source of constituents to IRM.

The evaluation of the spatial distribution of constituents in IRM concludes that the LCCS is not a principal source of constituents to IRM and that any future investigation of IRM impacts should focus instead on other potential sources.

The results of the human health and ecological screening evaluations also do not support extending the scope of the RI work performed to date into IRM. This conclusion is further supported by the fact that the highest concentrations of virtually all constituents in IRM surface water and sediments occur at locations more distant from the LCCS. LCCS does not appear to be a principal source of constituents to IRM. These findings support the conclusion that further investigation of IRM for the purpose of evaluating potential risks to human health and ecological receptors is not necessary.

6.1 Comparison of LCCS Groundwater Data to Benchmarks

This section first compares concentrations of constituents in groundwater to several human health benchmarks, then compares constituents in groundwater to ecological benchmarks.

6.1.1 Human Health Benchmark Comparisons

Given that one of the purposes of the RI/FS is to evaluate groundwater emanating from the LCCS, and recognizing that IRM is the principal receptor, the human health screening evaluation is based on constituent concentrations measured in the five monitoring wells located along the border of the LCCS and IRM: MW-04, MW-05, MW-06, MW-07, and MW-08. The locations of these monitoring wells are shown on **Figure 3.** One set of screening evaluations uses the maximum constituent concentration reported in any quarterly sample from any of these five monitoring wells. This results in a very conservative evaluation of the potential for emanating groundwater to pose a human risk for at least two reasons. First, the human health benchmarks assume a chronic (*i.e.*, long-term) exposure. The single highest concentration measured in one quarter from these four wells is not representative of chronic exposure. Given that dilution of any groundwater venting to IRM is occurring, the screening comparison using the maximum concentration also overestimates the potential for acute exposures.

Second, using the maximum constituent concentration from any single well, or even the mean concentration from any single well, assumes that someone using IRM for recreation would contact only emanating groundwater from that well, a scenario that does not reasonably represent expected uses of IRM. The common border between LCCS and IRM is approximately 2,000 feet long. No reason exists to believe that a person using IRM would preferentially and consistently for many years contact emanating groundwater from a small portion of this common border. If anyone were using IRM for recreation for multiple years, and assuming that use is limited to the common border area, contact would be expected to occur along the entire 2,000 feet length of the border. Additionally, movement of surface water within IRM would result in any emanating groundwater being initially mixed within the portion of IRM along the LCCS and ultimately with surface water in the larger portion of IRM. Based on these considerations, the arithmetic average constituent concentration in LCCS monitoring wells bordering IRM was also compared to the screening benchmarks to better evaluate the potential for emanating LCCS groundwater to pose a risk to human health.

Several screening benchmarks are used to evaluate the potential for emanating groundwater to pose a risk to human health. The initial set of comparisons is based on the benchmarks listed in the RI/FS Work Plan. These include Illinois' Numeric and Derived Water Quality Standards (35 IAC 302.208, 302.210, and 302.407). Two of the Standards (35 IAC 302.208 and 302.407) include exposure through consumption of surface water as a drinking water supply. Because surface water in IRM is not suitable for use as a drinking water supply, these standards are not representative of current and potential future uses of surface water in IRM and are not discussed further in this Technical Memorandum; however, per the RI/FS Work Plan, the comparisons are shown in **Appendix K**. (Note as well, Table 1 of Appendix K presents a screening of all groundwater monitoring well data to Illinois Groundwater Quality Standards (35 IAC 620) and Illinois Tiered Approach to Corrective Action Objectives (TACO) Tier 1 Remediation Objectives (35 IAC 742) for both Class I and Class II groundwater for informational purposes. However, although subsurface water at the site is referred to as "groundwater" in this memorandum for simplicity, water within fill material at LCCS does not meet the definition of "groundwater" under 35 IAC 620 because

it is not located within a geologic material. Therefore, groundwater remediation objectives or groundwater standards provided in TACO or in 35 IAC 620 are not applicable to water present in Site monitoring wells, which are screened within fill material. Furthermore, the potable use of groundwater in the vicinity of the Site (and the entirety of Chicago) is prohibited by municipal ordinance and is not a realistic human health exposure pathway. Results of the comparison of groundwater monitoring well concentrations to groundwater screening criteria are not discussed further in this Technical Memorandum.

The third set of standards (35 IAC 302.210) is based on a recreational contact scenario. That scenario assumes incidental ingestion of small amounts of surface water (0.01 liter per day) during recreational activities and consumption of 20 grams per day of recreationally caught fish. Given the isolated nature of IRM, the assumed exposure frequency of 365 days per year is likely high and very conservative. Further, given the generally shallow nature of surface water in IRM, and particularly given its relatively small size, it is highly unlikely that anyone consumes as much fish from IRM as assumed by the standards.

The assumption of 20 grams of fish consumed for 365 days a year represents 7.3 kilograms of edible fish per year harvested from IRM by a single person. If a fish meal is equal to approximately 200 grams (or approximately a half pound), it represents approximately a fish meal every 10 days, or about 36 meals a year, every year, for a lifetime. Such a rate of consumption is unlikely, as outlined below.

First, many other fishable water bodies exist in the area (*e.g.*, Lake Calumet, Calumet River, Lake Michigan). These represent larger waters with greater productivity and a greater likelihood of catching more and larger fish.

Second, the ability of relatively small waters, such as IRM, to produce edible-sized fish sustainably is limited and precludes high rates of consumption of resident fish. Two pieces of information are necessary to estimate sustainable production of edible-sized fish: size of the waterbody in question and productivity of a waterbody per unit of water surface area (*e.g.*, acre or hectare). Based on an aerial view, North IRM has about 17 hectares of open water. A large-scale study of production data for 100 fish populations from 38 lakes and reservoirs in geographically diverse locations, including lakes that ranged from oligotrophic (poor in nutrients) to hypereutrophic (rich in nutrients), was used to determine fish population dynamics (Downing and Plante 1993). These authors reported that only small fractions of the standing fish biomass can be removed sustainably. The data evaluated indicated that more than 85% of the lakes had sustainable yields of less than 15% of the total mass of fish in the lake, that the majority of sustainable fish population yields in lakes were less than 1 kilogram per hectare per year (kg/ha-year), and more than 90% were less than 4 kg/ha-year. They concluded that sustainable yield generally appears to be approximately 10% of the fish production of a lake.

Based on this information, the range of sustainable productivity of IRM is between 17 and 68 kg of whole edible-sized fish per year. It is important to note, however, that this is the mass of whole fish that can be harvested and is not equivalent to the amount of fish that is consumed. USEPA (1989) guidance indicates that the edible portion of most fish is approximately 30% of the whole fish mass. If this fraction is applied to the total mass of fish that can be sustainably harvested from IRM, the result is a range of 5 to 14 kg per year of edible portions of fish. As an annualized daily average, which is the metric used to represent fish consumption rates when deriving the standards, this equates to between 14 and 56 g/day of edible fish tissue that can be sustainably harvested from IRM.

Applying the sustainable productivity estimated for the majority of lakes indicates that IRM could not support even a single person eating fish at the rate assumed by Illinois Derived Standards (estimated productivity of 14 grams per day versus an assumed consumption rate by the standard of 20 grams per day). Even using the 90th percentile of sustainable productivity indicates that IRM could support no more than three people eating fish at the rate assumed by the standards. If IRM is used for recreational fishing, it is highly unlikely that it is used by only one to three people, and that those people fish so often and thoroughly across the entire 17 hectares of open water than they harvest all the edible-sized fish sustainably produced by IRM. In other words, the fish consumption assumption of 20 grams of fish per day used to derive the Illinois Derived Standards is not representative of potential exposures associated with IRM surface water. Consequently, the human health screening evaluation, using the Illinois Derived Standards, is presented in **Appendix K** to meet the requirements of the RI/FS Work Plan, but is not discussed further in the remainder of this Technical Memorandum.

The RI/FS Work Plan also states that other appropriate benchmarks for the protection of human health may be used in the screening evaluation. One such set of benchmarks is USEPA's national human health ambient water quality criteria (AWQC). USEPA has two sets of AWQC. One set assumes that exposure occurs through use of surface water as a drinking water supply and consumption of 22 grams of fish per day, every day, for a lifetime. The second set assumes that exposure occurs only through consumption of 22 grams of fish per day, every day, for a lifetime. As described above, given its characteristics, the IRM cannot support either of those exposure scenarios. Therefore, USEPA's national AWQC are not discussed further in this Technical Memorandum; however, the results are presented in **Appendix K**.

As alluded to above, when describing the exposure scenarios included in the Illinois Derived Standards, the most likely current and possible future use of IRM is recreational. While the Illinois Derived Standards include only incidental ingestion of a small amount of surface water during recreational activity (as well as fish consumption), recreational use can also include dermal contact with surface water while a person is visiting IRM. To conduct a human health screening evaluation that better represents the potential exposures that might be associated with IRM, **Appendix L** derives conservative screening benchmarks protective of recreational exposures. Consistent with the Illinois Derived Standards, incidental ingestion of surface water is included. Additionally, the recreational benchmarks include dermal exposure to constituents in surface water (via dermal absorption). The assumptions used to derive the IRM-specific recreational benchmarks are presented in **Appendix L.**

Toxicity information from USEPA sources was available to derive IRM-specific benchmarks for 77 of 91 constituents detected at least one time in the monitoring wells along the border of LCCS and IRM. Maximum concentrations of six of the 61 constituents (arsenic, manganese, Aroclor-1221, Aroclor-1232, ethyl benzene, and vinyl chloride) in groundwater exceeded their respective IRM-specific benchmarks (**Table 10**). Arithmetic average concentrations of four constituents (arsenic, Aroclor-1221, Aroclor-1232, vinyl chloride) in groundwater also exceeded their respective IRM-specific benchmarks.

Comparison of concentrations of constituents measured in groundwater-to-surface water benchmarks is highly conservative, as it fails to account for mixing with IRM surface water. Any actual exposures in IRM surface water would be lower than the concentrations in groundwater emanating from LCCS. A rough estimate of mixing can be derived by comparing the concentrations of constituents measured in

monitoring wells closest to IRM (MW-04, MW-05, MW-06, and MW-07[1]) to the concentration of constituents measured in surface water along the border of IRM adjacent to LCCS. In 2009, the most recent IRM data available, surface water samples were collected from two such locations (SW-05 and SW-06; **Figure 6**). Paired data (at least one detected concentration in both groundwater and surface water) are available for nine metals and total ammonia nitrogen (**Table 11**). Dilution factors range from a low of 1.2 for manganese to a high of 111 for total ammonia nitrogen. Of the other metals, barium and iron have dilution factors of approximately 6, and the remaining six metals have dilution factors of between 19 and 45 (**Table 11**). These comparisons suggest that a conservative estimate of dilution for constituents in emanating groundwater would be approximately 10-fold.

If the human health screening evaluation is repeated, assuming that constituent concentrations in groundwater will be diluted 10-fold once the groundwater reaches IRM surface water, then only two of 61 constituents (Aroclor-1232 and vinyl chloride) have been detected at a maximum concentration that exceeds their respective IRM-specific recreational benchmarks, and only vinyl chloride has been detected at an arithmetic mean concentration that exceeds its recreational benchmark. Furthermore, both Aroclor -1232 and vinyl chloride were only detected sporadically along the eastern perimeter of the Site. Aroclor-1232 was only detected in one of four groundwater sampling events at wells MW-04 and MW-06. As shown on the profiles in **Appendix J**, although vinyl chloride was detected in the groundwater from wells MW-04, MW-06, and MW-07, the VAP sampling results indicate vinyl chloride is not detected in groundwater along most of the eastern perimeter of the Site at HPT-06, HPT-07, HPT-08, HPT-09, HPT-12, and HPT-14. In addition, PCB and vinyl chloride concentrations along the eastern perimeter of the Site are lower than area-wide groundwater concentrations along the western and northern perimeters of the Site as well as surrounding the Site as shown in Section 5.

The above described series of comparisons comprises a preliminary human health screening evaluation of potential exposures for LCCS groundwater emanating into IRM surface water. The goals of the evaluation were to both determine the potential for emanating groundwater to pose a risk to potential recreators using IRM and identify the constituents that may be the largest contributors to such potential risk. The series of comparisons begins with screening benchmarks that are based on exposure scenarios not representative and not appropriate for the IRM (*e.g.*, benchmarks that assume IRM surface water is used as potable drinking water supply, or that assume substantial recreational fish consumption) to more representative scenarios (*e.g.*, benchmarks that assume recreational use). The result of this progressively more representative human health screening evaluation indicates that, even using conservative benchmarks, no more than six constituents would be identified as requiring further evaluation in a human health risk assessment of LCCS groundwater emanating into IRM.

More importantly, when more representative but still conservative benchmarks and potential IRM surface water concentrations are used, only vinyl chloride is identified as a constituent that may require further evaluation in a human health risk assessment of IRM. However, as noted above, vinyl chloride concentrations along the eastern perimeter of the Site are lower than area-wide groundwater concentrations along the western and northern perimeters of the Site as well as surrounding the Site.

[1] MW-08 was not included in the estimation of dilution because it was further away from the IRM surface water sampling locations adjacent to LCCS than MW-04, MW-05, MW-06, and MW-07.

6.1.2 Ecological Benchmark Comparisons

As with the human health comparisons, this screening is based on constituent concentrations measured in monitoring wells located along the border of the LCCS and IRM (MW-04, MW-05, MW-06, MW-07, and MW-08). One set of ecological screening evaluations uses the maximum constituent concentration reported in any quarterly groundwater sample from any of those four monitoring wells to evaluate the potential for localized potentially acute effects. The second set of ecological screening evaluations uses the arithmetic average constituent concentration in LCCS monitoring wells bordering IRM to better evaluate the potential for emanating LCCS groundwater to pose a chronic risk.

Several screening benchmarks were used to evaluate the potential for emanating groundwater to pose a risk to ecological receptors in IRM. The initial set of comparisons is based on the benchmarks listed in the RI/FS Work Plan. These include Illinois' Numeric and Derived Water Quality Standards (35 IAC 302.208, 302.210, and 302.407-302.410). The RI/FS Work Plan also refers to comparisons to other appropriate ecological benchmarks. The screening evaluation presented in this Technical Memorandum also includes as benchmarks USEPA's acute and chronic national AWQC for protection of aquatic life and the COSR surface water Background, Threshold, and Benchmark values (**Appendix K**). The COSR Benchmarks represent different levels of protectiveness associated with chronic exposure, with the COSR Thresholds being more conservative than the COSR Benchmarks. As with the human health screening, benchmarks are compared to maximum and arithmetic average concentrations, and to better represent potential constituent concentrations in IRM surface water, to maximum and arithmetic average concentrations assuming a 10-fold dilution factor for groundwater that may emanate into IRM surface water. The full set of comparisons to ecological benchmarks is presented in **Appendix K**. **Table 12** presents a summary that includes the number of constituents for which benchmarks are available, how many constituents exceeded a benchmark, and the identity of those constituents.

The maximum groundwater concentration of between three and five constituents exceeds each set of acute benchmarks derived by IEPA and USEPA (**Table 12**). The COSR benchmarks are assumed to be protective of chronic and not acute exposures and are discussed below in the comparison to chronic standards. There is some overlap in the identity of constituents exceeding each set of benchmarks. For example, lead and zinc concentrations exceed both Illinois Numerical Standards and USEPA's national AWQC. Other constituent concentrations exceed only one set of benchmarks, primarily because only one regulatory program has derived benchmarks for those constituents. For example, Illinois does not have surface water quality standards for pesticides, but USEPA does have national AWQC for this constituent. Additionally, the maximum concentration of ammonia-nitrogen exceeds the Illinois water quality standard for Open Waters of Lake Michigan (**Table 12**); however, it is important to note that neither the LCCS nor the IRM falls within the regulatory definition of "open waters of Lake Michigan."

The maximum groundwater concentrations of between six and eight constituents exceed each set of chronic benchmarks derived by IEPA and USEPA (**Table 12**). The maximum concentrations of 18 constituents exceed the COSR Threshold, and of eight constituents exceed the COSR Benchmark (**Table 12**). The former is assumed to represent a more conservative chronic benchmark than the latter.

Comparison of maximum groundwater concentrations to chronic surface water benchmarks is highly conservative and not representative of the surface water concentrations to which most aquatic receptors will be exposed for several reasons: concentrations in groundwater emanating from LCCS change over time, most aquatic receptors in surface water are mobile and integrate concentrations over time, and

movement of surface water in IRM will reduce the maximum concentrations through mixing. For these reasons, the arithmetic average concentration of constituents in groundwater is a more representative concentration to use when comparing to standards or benchmarks derived to be protective of chronic ecological effects.

The arithmetic mean groundwater concentration of between zero and one constituent exceeds each set of acute benchmarks derived by IEPA and USEPA (**Table 12**). Additionally, the arithmetic mean concentration of ammonia-nitrogen exceeds the Illinois water quality standard for Open Waters of Lake Michigan. The arithmetic mean groundwater concentrations of four constituents exceed each set of chronic benchmarks derived by IEPA and USEPA. The arithmetic mean concentrations of eight constituents exceed the COSR Threshold and the arithmetic mean concentrations of three constituents exceed the COSR Benchmark.

As described above in the human health screening evaluation, concentrations of constituents in groundwater emanating from LCCS into IRM surface water will be diluted. Based on a comparison of recent LCCS groundwater concentrations and 2009 IRM surface water data, a conservative estimate of such dilution is 10-fold. When considering potential dilution, the maximum concentration of only chromium exceeds acute benchmarks derived by Illinois (**Table 12**). The maximum concentration of ammonia-nitrogen also exceeds the Illinois water quality standard for Open Waters of Lake Michigan, even accounting for dilution. The diluted maximum groundwater concentrations of between one and six detected constituents (aluminum, iron, lead, nickel, bis(2-ethylhexyl)phthalate, and ethylbenzene) exceed each set of chronic benchmarks derived by IEPA and USEPA. The diluted maximum concentrations of six detected constituents (ammonia, iron, lead, benzo[a]anthracene, benzo[a]pyrene, and pyrene) exceed the COSR Threshold, and of one constituent (iron) exceeds the COSR Benchmark. When arithmetic average concentrations are adjusted for potential dilution, the diluted average concentrations of almost all detected constituents with acute benchmarks derived by IEPA and USEPA are lower than such benchmarks. The exception is the diluted average concentration of ammonia nitrogen, which exceeds its Illinois standard. None of the diluted average concentrations exceed chronic benchmarks derived by IEPA and USEPA. The arithmetic mean concentrations of three constituents (ammonia, benzo[a]anthracene, and benzo[a]pyrene) exceed the COSR Threshold, while the arithmetic means of all constituents are below the COSR Benchmark values. However, benzo[a]anthracene and benzo[a]pyrene were only detected in one and two of four events, respectively, at only well MW-07 along the eastern perimeter of the Site. Further, ammonia is an area wide constituent that was observed throughout the Site including along the eastern perimeter as well as surrounding the Site.

This series of comparisons comprises a preliminary ecological screening evaluation of potential exposures for LCCS groundwater emanating into IRM surface water. The goals of the evaluation were to determine both the potential for emanating groundwater to pose a risk to aquatic receptors using IRM and to identify the constituents that may be the largest contributors to such potential risk. The comparisons incorporate several sets of acute and chronic benchmarks as well as maximum and arithmetic mean concentrations both without and with dilution. The results of the ecological screening evaluation indicate that several constituents carry the potential to pose a risk to ecological receptors using IRM surface water, but also find that the number of constituents that may require additional investigation decreases as more representative comparisons are conducted. Comparison of the diluted maximum concentration to acute benchmarks indicated that only iron and ammonia exceeded one or more of their respective benchmarks. Comparison of the diluted average concentrations found that no detected constituents

exceeded chronic standards derived by Illinois or USEPA, and that no detected constituents exceeded their respective COSR Benchmarks.

6.2 Spatial Comparisons of IRM Data

This section presents a brief evaluation of the spatial distribution of the concentrations of constituents in IRM surface water and sediments. The evaluation focuses on a comparison of constituent concentrations in sampling locations near the LCCS to concentrations in sampling locations distant from the LCCS. The comparisons are based on the IRM data collected by Tetra Tech in 2009. Surface water data are available from 10 locations in IRM, with two locations being adjacent to LCCS (SW-05 and SW-06; **Figure 6**). Surface water data are available for several metals, ammonia, and hardness (**Table 13**). Sediment data are available for two locations: one adjacent to LCCS (SD-06) and one in the northern portion of IRM distant from LCCS (SD-02). Sediment data are available for several metals and organic compounds (**Table 14**).

Spatial comparison of IRM surface water data reveals that the maximum concentrations of all except one constituent occur at a sampling location distant from the LCCS (**Table 13**). The one exception is thallium; its maximum concentration occurs at one of the sampling locations adjacent to LCCS and another location distant from LCCS. Notably, the thallium concentration at the other location adjacent to LCCS is one of the lowest concentrations measured in IRM. In general, for most constituents, the highest concentrations occur either in the northern portion of IRM (SW-01, SW-02, and SW-04) or in the south IRM (SW-07). Minimum concentrations occur more frequently in the southeast corner of IRM at SW-08 and SW-09. The latter two sampling locations exhibit distinct ammonia concentrations and hardness, suggesting that perhaps surface water in the southeast corner of IRM is isolated from the surface water in the remainder of IRM. If those locations are excluded from the spatial evaluation of surface water, the overall pattern changes little; most of the maximum concentrations continue to occur in the northern portion of IRM and in the south IRM. For most constituents, the two sampling locations adjacent to LCCS tend to exhibit low to intermediate concentrations (**Table 13 and Table 14**), suggesting that LCCS is not a principal source of constituents to IRM.

The sediment evaluation reaches the same conclusion that LCCS is not a principal source of constituents to IRM, albeit with a substantially smaller data set (two samples). The maximum concentrations of 30 of 31 constituents detected in either of the sediment sampling locations occurred in the location in the northern portion of IRM, distant from LCCS (**Table 15**). The single exception is diethyl phthalate, which had an estimated concentration of 0.5 milligrams per kilogram (mg/kg) at one sampling location adjacent to the LCCS but was not detected at the other sampling location nor was it detected in any monitoring wells along the perimeter of LCCS and IRM. Moreover, the concentrations of most constituents are at least 2-fold greater in the distant sampling location than in the location adjacent to LCCS, further indicating that LCCS is not a principal source of constituents to IRM.

Taken together, the 2009 surface water and sediment data provide no evidence that LCCS or groundwater emanating from LCCS is a principal source of constituents to IRM. To the extent that the human health and ecological screening evaluations presented elsewhere in this Technical Memorandum suggest that additional investigation and evaluation of select constituents in IRM may be necessary, the spatial evaluation of existing data presented herein suggests that such investigation and evaluation

should focus on other portions of IRM and sources of constituents to those portions of the IRM. LCCS should not be a focus of such investigations.

6.3 Comparison of IRM Surface Water Data to Human Health and Ecological Benchmarks

Another line of evidence to help determine whether surface water in IRM carries the potential to pose a risk to human health and ecological receptors, and to identify constituents that carry the greatest potential to pose such a risk, is a comparison of existing IRM surface water concentrations to the screening benchmarks described above in the screening evaluation of LCCS groundwater concentrations. The results of such a comparison, using the most recent data available for the IRM surface water (*i.e.*, those collected by Tetra Tech in 2009) are presented below. Unless otherwise specified, the comparisons are of all sampling locations collected by Tetra Tech, not just the two locations (SW-05 and SW-06) closest to LCCS.

6.3.1 Human Health Benchmark Comparisons

Surface water data are available for 17 metals and total ammonia-nitrogen (**Appendix K**). IRM-specific surface water screening benchmarks protective of potential recreational exposure are available for 14 metals. Of these 14 metals, 11 were detected in IRM surface water. Maximum concentrations of all 11 detected metals for which screening benchmarks are available are below such benchmarks, indicating that metals in surface water in 2009 did not pose a risk to people using the IRM for recreational purposes. Even if it is assumed that groundwater entering and emanating from the LCCS may have contributed to metals concentrations in IRM surface water in 2009, that contribution did not cause the maximum metals concentrations to exceed the screening benchmarks. Further, any metals concentrations in groundwater emanating from the LCCS should be lower now given that measures implemented as the remedy for Operable Unit 1 will have reduced runoff from LCCS, and any contribution related to LCCS groundwater emanating into IRM should be stable. Thus, comparison of IRM surface water to human health screening benchmarks indicates that additional evaluation of potential human health risk associated with IRM surface water is not necessary.

6.3.2 Ecological Benchmark Comparisons

Maximum concentrations of 9 of 10 detected constituents (nine metals and ammonia) for which acute screening benchmarks are available are below such benchmarks (**Table 16**). Iron is the only constituent with a maximum concentration that exceeds its acute benchmark. Comparison of maximum IRM surface water concentrations to chronic benchmarks derived by IEPA and USEPA also finds that all concentrations of all detected constituents except for iron and lead are below benchmarks. The maximum concentration of iron exceeds both the COSR Threshold and Benchmark concentrations. The sampling location with the maximum concentration of iron (SW-01) is in the northern portion of IRM and distant from LCCS. The iron concentration in one of the two sampling locations along the border of LCCS and IRM (SW-05) also exceeds the acute benchmark, though the concentration was consistent with those measured in other parts of IRM, suggesting that the exceedance is not unique to LCCS.

A key outcome of the surface water comparison is that concentrations of ammonia throughout IRM, including the locations adjacent to the LCCS, are below both acute and chronic benchmarks. Results of the IRM surface water benchmark comparison, together with the finding (presented above) that IRM surface water data provide no indication that LCCS is a principal source of ammonia to IRM surface water (despite having concentrations of ammonia in groundwater above surface water screening benchmarks), suggest that additional investigation and evaluation of ammonia concentrations in IRM surface water is not necessary.

The results of the IRM surface water screening indicate that detected concentrations of ammonia and most metals in surface water in 2009 did not pose a risk to aquatic life. The possible exception is iron, which is present at maximum and average concentrations that exceeded acute and chronic benchmarks. However, as described above in the section on the spatial distribution of IRM surface water concentrations in 2009, the available data do not suggest that LCCS is a principal source of iron to IRM. The highest concentrations of iron occur in the northern portion of IRM, and the average concentration of iron in the two sampling locations adjacent to the IRM is lower than the average concentration throughout the remainder of the IRM (1,170 microgram per liter [µg/L] versus 1,330 µg/L). To the extent that LCCS contributed iron to IRM surface water in 2009, that contribution should be lower now given that measures implemented as the remedy for OU1 will have reduced runoff from LCCS, and any contribution related to LCCS groundwater emanating into IRM should be stable. Thus, comparison of IRM surface water to aquatic life screening benchmarks indicates little potential for adverse effects to aquatic life, and that any additional evaluation of potential ecological risk associated with IRM surface water should not focus on LCCS, but instead on other sources that may be contributing iron and other metals to IRM.

6.4 Comparison of IRM Sediment Data to Human Health and Ecological Receptors

Another line of evidence to help determine whether constituents in the IRM have the potential to pose a risk to human health and ecological receptors, and to identify constituents that have the greatest potential to pose such a risk, is comparison of existing IRM sediment concentrations to human health and ecological screening benchmarks. The results of such a comparison, using data collected by Tetra Tech in 2009 (the most recent sediment data available), are presented below.

6.4.1 Human Health Benchmark Comparisons

For the human health screening evaluation, the RI/FS Work Plan lists residential soil Regional Screening Levels (RSLs) as possible screening benchmarks. Residential soil RSLs assume daily contact with soil in a residential setting. A residential exposure scenario is not representative of the IRM, and is neither appropriate nor applicable. Because residential soil RSLs are listed as possible benchmarks in the RI/FS Work Plan, a comparison of 2009 sediment data to residential RSLs is presented in **Appendix J**, but the results of the comparison are not discussed further in this Technical Memorandum.

Consistent with screening evaluations presented above for LCCS groundwater and IRM surface water, recreational sediment benchmarks were derived and used for the human health screening evaluation to better represent the potential exposures that might be associated with the IRM. As with the derivation of the IRM-specific surface water benchmarks, both incidental ingestion of sediment and dermal exposure to

constituents in sediment (via dermal absorption) are included in the derivation of the benchmarks. The assumptions used to derive the IRM-specific recreational sediment benchmarks are presented in **Appendix L**.

Toxicity information from USEPA sources was available to derive IRM-specific benchmarks for 31 of 32 constituents detected at least one time in IRM sediments (**Table 17**). IRM sediments were sampled at two locations in 2009. One location was adjacent to LCCS (SD-06), and one location was distant from LCCS (SD-02), located in the northern portion of IRM (**Figure 6**). Given the existence of only two sediment sampling locations, and that only one carries the potential to represent conditions near the LCCS, concentrations at each location are screened separately. Maximum concentrations of two detected constituents (B[a]P and arsenic) exceeded their respective IRM-specific recreational benchmarks at the sampling location distant from IRM. No detected constituent concentrations exceeded their respective IRM-specific sediment screening benchmarks at the sampling location adjacent to the LCCS.

As with surface water, to the extent that LCCS contributed to constituent concentrations in IRM sediment in 2009, that contribution should have been reduced by measures implemented by IEPA as part of the remedy for OU1, and any contribution related to LCCS groundwater emanating into IRM should be stable. Thus, comparison of IRM sediment to IRM-specific human health screening benchmarks indicates that additional evaluation of potential human health risk associated with IRM sediment near LCCS is not necessary.

6.4.2 Ecological Benchmark Comparisons

The IRM sediment ecological screening evaluation uses the same data and approach as those presented above for human health. The ecological screening benchmarks included those developed by COSR as well as Threshold Effects Concentrations (TECs) and Probable Effects Concentrations (PECs) (MacDonald *et al*. 2000). At the IRM, sediment sampling location distant from LCCS (SD-02), 28 detected constituents have COSR-derived benchmarks. Concentrations of 22 detected constituents exceed the more conservative COSR Threshold, and 16 exceed the less conservative COSR Benchmark (**Table 18**). At the IRM sediment sampling location adjacent to LCCS (SD-06), 21 detected constituents have COSR-derived benchmarks; concentrations of 13 constituents exceed the COSR Threshold, but only two (lead and zinc) exceed the COSR Benchmark. Notably, concentrations of both lead and zinc are substantially higher in sediments at the sampling location distant from the LCCS, and surface water concentrations were also higher at locations distant from LCCS, suggesting that LCCS is not the principal source of these metals to IRM.

Nineteen detected constituents at SD-02 (the sampling location in the northern portion of IRM) have TECs, and all 19 exceed their respective TEC (**Table 19**). Fifteen of the constituents also exceed their respective PECs, leading to a PEC ratio of 3.8 (**Table 20**). Fewer constituents were detected at the sediment sampling location adjacent to LCCS. Of the detected constituents, 14 have TECs. Concentrations of 11 constituents exceed their respective TECs, but only two exceed their respective PECs (lead and zinc), leading to a PEC ratio of 0.5. The results of the TEC and PEC screening are consistent with the COSR screening, in that concentrations of several constituents exceed the most conservative benchmarks that tend to over-predict the potential for an adverse effect in benthic communities, but that concentrations of few constituents exceed the less conservative benchmarks that

tend to be better predictors of the potential for adverse effects. In fact, the finding that the PEC ratio is less than 1.0 suggests that the totality of constituents in sediments near LCCS is unlikely to pose an adverse effect to the benthic community and that further evaluation of sediments near LCCS to determine effects to the benthic community is not necessary. This finding is consistent with the sediment toxicity testing completed by Tetra Tech in 2009, which found no evidence of adverse effects to the benthic community at a sediment sampling location adjacent to LCCS (Tetra Tech 2009).

7 SUMMARY AND CONCLUSIONS

Based on soil boring information collected during this investigation, the lithology at the Site consists entirely of fill materials overlaying a low-permeability native clay. In addition to the soil cover placed by IEPA as part of the OU1 remedy implementation, the fill materials consist of solid and household wastes, varying from industrial/demolition debris (*e.g.*, slag, metal pieces, bricks) to household wastes such as newspaper and general refuse. Beneath the fill layer, a silty clay was encountered at every soil boring location advanced during this investigation. The clay was encountered at all deep borings that penetrated the entire thickness of the fill material and represents the only native material encountered in the stratigraphic profile. The composition of the clay indicated a very uniform and very low-permeability material. The base of this clay unit was not encountered during drilling, but was still present as deep as 44 feet bgs. Native sand deposits were not encountered at any boring location on the Site.

The primary water-bearing unit is the municipal/industrial waste fill. The clay unit underlying the fill materials represents a vertical limit of groundwater flow originating at the Site. The low permeability, uniform composition, and significant thickness of this unit provide a barrier preventing groundwater from migrating vertically into deeper permeable units.

The RI work conducted to date has adequately characterized the nature of the groundwater entering, in and emanating from the Site in satisfaction of the approved RI Work Plan. Additional on-site investigation is not necessary to evaluate groundwater conditions. Based on the results of groundwater sampling and analysis conducted during the groundwater investigation, the quality of the groundwater entering the Site, including that from the adjacent Paxton I and II Landfill properties, is similar to the quality of groundwater emanating from the Site.

For many constituents, the concentrations in groundwater entering the Site and surrounding the Site are higher than the concentrations in groundwater emanating from the Site.

The screening evaluation presented several lines of evidence to 1) evaluate whether groundwater emanating from LCCS poses a potential risk to human health or ecological receptors, and 2) identify constituents with the potential to pose the greatest risk. For human health, those lines of evidence include comparing constituent concentrations in LCCS groundwater, IRM surface water, and IRM sediments to conservative IRM-specific benchmarks. All of those comparisons indicate that any LCCS groundwater that may be emanating to IRM likely does not pose a risk to human health. Vinyl chloride in groundwater is the only constituent present at a concentration that exceeds its benchmark in the most representative screening comparison. The highest vinyl chloride concentrations along the eastern perimeter were observed at well MW-07, which is located in the southeast portion of the Unnamed Parcel. Vinyl chloride is only detected sporadically at and surrounding the Site.

The ecological screening incorporated several sets of acute and chronic benchmarks as well as maximum and arithmetic mean concentrations both without and with dilution. The number of constituents exceeding benchmarks decreases when dilution is included or the average concentration is used. Comparison of the diluted maximum concentration to acute benchmarks indicated that only chromium, iron, and ammonia concentrations exceed one or more of their respective benchmarks. Comparison of the diluted average concentrations found that only the chromium concentration exceeds chronic standards derived by IEPA or USEPA, and that no detected constituent concentrations exceed their respective COSR Benchmarks. The concentrations of both ammonia and chromium in IRM surface water in 2009 were lower than acute and chronic benchmarks, indicating that, even if groundwater from LCCS was emanating to IRM surface water, the LCCS groundwater was not causing concentrations in IRM surface water to exceed surface water benchmarks and pose a potential ecological risk.

Concentrations of iron in LCCS groundwater, as well as many of the surface water sampling locations in IRM, exceeded surface water screening benchmarks. However, available data suggest that, if iron poses an ecological risk, that risk is IRM-wide and that LCCS is not a principal source. In addition, the screening evaluation found that concentrations of constituents in sediments adjacent to LCCS likely do not pose a risk to the benthic community. That finding is consistent with the whole sediment toxicity tests conducted in 2009, which found no adverse effects associated with sediments adjacent to LCCS.

Thus, the results of human health and ecological screening evaluations indicate that constituents in groundwater along the border of LCCS and IRM, as well as in IRM surface water and sediments, are unlikely to pose an unacceptable risk to human health or the environment. Additionally, the highest concentrations of virtually all constituents in IRM surface water and sediments are distant from the Site. LCCS does not appear to be a principal source of constituents to IRM. Taken together, the results of the human health and ecological screening evaluations and the findings relating to constituents in groundwater entering the IRM, support the conclusion that further investigation of IRM for the purpose of evaluating potential risks to human health and ecological receptors is not necessary.

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TABLES

Table 1. Groundwater Elevation Data
Lake Calumet Cluster Site, Chicago, IL

Piezometer Designation	Surveyed TOC (ft amsl)	10/12/15 DTW (ft btoc)	10/12/15 Water Elevation (ft amsl)	10/19/15 DTW (ft btoc)	10/19/15 Water Elevation (ft amsl)	1/27/16 DTW (ft btoc)	1/27/16 Water Elevation (ft amsl)	2/24/16 DTW (ft btoc)	2/24/16 Water Elevation (ft amsl)	3/25/2016 DTW (ft btoc)	3/25/2016 Water Elevation (ft amsl)	4/27/2016 DTW (ft btoc)	4/27/2016 Water Elevation (ft amsl)	5/27/2016 DTW (ft btoc)	5/27/2016 Water Elevation (ft amsl)
PZ-1S	601.93	14.06	587.87	14.78	587.15	13.63	588.3	13.21	588.72	13.65	588.28	13.50	588.43	13.40	588.53
PZ-2S	599.1	10.37	588.73	11.15	587.95	10.33	588.77	9.71	589.39	10.16	588.94	10.04	589.06	9.94	589.16
PZ-3S	602.19	11.97	590.22	13.07	589.12	12.02	590.17	11.72	590.47	12.18	590.01	11.90	590.29	13.69	588.50
PZ-3D	602.63	12.91	589.72	13.76	588.87	13.20	589.43	12.90	589.73	13.47	589.16	13.16	589.47	12.97	589.66
PZ-4S	605.08	15.71	589.37	15.69	589.39	15.15	589.93	15.25	589.83	15.14	589.94	15.16	589.92	15.07	590.01
PZ-5S	602.53	12.59	589.94	13.49	589.04	12.88	589.65	12.52	590.01	13.07	589.46	12.72	589.81	12.52	590.01
PZ-5D	602.67	12.49	590.18	13.27	589.4	12.58	590.09	12.20	590.47	12.95	589.72	12.49	590.18	12.32	590.35
PZ-6S	605.31	13.99	591.32	14.41	590.9	13.50	591.81	13.11	592.2	13.77	591.54	13.64	591.67	13.30	592.01
PZ-7S	600.22	10.72	589.5	11.04	589.18	10.01	590.21	9.90	590.32	10.10	590.12	10.11	590.11	10.03	590.19
PZ-7D	599.99	10.5	589.49	10.75	589.24	9.00	590.99	9.67	590.32	10.11	589.88	9.99	590.00	8.07	591.92
PZ-8S	603.59	10.22	593.37	10.76	592.83	9.50	594.09	9.27	594.32	9.71	593.88	9.73	593.86	9.25	594.34
PZ-8D	603.8	10.51	593.29	11.07	592.73	10.02	593.78	9.70	594.1	10.22	593.58	10.15	593.65	9.69	594.11
PZ-9S	604.17	9.08	595.09	9.75	594.42	8.75	595.42	8.26	595.91	7.47	596.70	8.59	595.58	8.35	595.82
PZ-10S	605.19	9.06	596.13	9.98	595.21	9.00	596.19	8.69	596.5	NA	NA	8.31	596.88	8.35	596.84
PZ-10D	605.02	9.35	595.67	9.9	595.12	9.24	595.78	8.65	596.37	9.06	595.96	9.10	595.92	9.05	595.97
PZ-11S	601.36	5.76	595.6	6.72	594.64	5.58	595.78	5.19	596.17	5.32	596.04	5.52	595.84	5.52	595.84
PZ-12S	600.9	7.35	593.55	7.82	593.08	6.55	594.35	6.10	594.8	6.20	594.70	NA	NA	6.30	594.60
PZ-13S	602.69	8.25	594.44	9.04	593.65	8.01	594.68	6.23	596.46	6.99	595.70	7.23	595.46	6.47	596.22
PZ-14S	601.19	8.31	592.88	9.1	592.09	8.93	592.26	8.75	592.44	7.83	593.36	7.75	593.44	7.32	593.87

Notes:
TOC: Top of casing
DTW: Depth to water
ft amsl: feet above mean sea level
ft btoc: feet below top of casing
NA: depth to water was not measured.

Table 1. Groundwater Elevation Data
Lake Calumet Cluster Site, Chicago, IL

Piezometer Designation	Surveyed TOC (ft amsl)	6/27/2016 DTW (ft btoc)	6/27/2016 Water Elevation (ft amsl)	7/29/16 DTW (ft btoc)	7/29/16 Water Elevation (ft amsl)	8/25/2016 DTW (ft btoc)	8/25/2016 Water Elevation (ft amsl)	10/3/2016 DTW (ft btoc)	10/3/2016 Water Elevation (ft amsl)	10/31/2016 DTW (ft btoc)	10/31/2016 Water Elevation (ft amsl)	11/29/2016 DTW (ft btoc)	11/29/2016 Water Elevation (ft amsl)	12/28/2016 DTW (ft btoc)	12/28/2016 Water Elevation (ft amsl)
PZ-1S	601.93	14.48	587.45	14.51	587.42	13.42	588.51	14.45	587.48	14.26	587.67	13.87	588.06	14.99	586.94
PZ-2S	599.1	11.04	588.06	10.92	588.18	9.81	589.29	11.01	588.09	11.02	588.08	10.59	588.51	10.72	588.38
PZ-3S	602.19	12.85	589.34	13.00	589.19	11.56	590.63	12.73	589.46	12.56	589.63	12.01	590.18	12.55	589.64
PZ-3D	602.63	14.06	588.57	14.15	588.48	13.19	589.44	13.81	588.82	14.03	588.60	13.46	589.17	13.89	588.74
PZ-4S	605.08	15.66	589.42	15.08	590.00	14.92	590.16	15.31	589.77	15.20	589.88	15.05	590.03	15.41	589.67
PZ-5S	602.53	13.39	589.14	13.48	589.05	12.62	589.91	13.40	589.13	13.42	589.11	12.91	589.62	13.17	589.36
PZ-5D	602.67	13.21	589.46	NA	NA	12.56	590.11	12.92	589.75	13.00	589.67	12.59	590.08	13.00	589.67
PZ-6S	605.31	14.32	590.99	13.86	591.45	12.63	592.68	14.22	591.09	13.98	591.33	14.40	590.91	13.90	591.41
PZ-7S	600.22	10.88	589.34	10.63	589.59	10.07	590.15	10.97	589.25	10.84	589.38	11.02	589.20	10.63	589.59
PZ-7D	599.99	10.64	589.35	10.43	589.56	9.84	590.15	10.70	589.29	10.69	589.30	10.85	589.14	10.36	589.63
PZ-8S	603.59	10.67	592.92	10.31	593.28	8.26	595.33	10.56	593.03	10.34	593.25	10.62	592.97	10.33	593.26
PZ-8D	603.8	11.01	592.79	10.65	593.15	8.88	594.92	10.95	592.85	11.00	592.80	10.99	592.81	10.71	593.09
PZ-9S	604.17	10.50	593.67	8.54	595.63	8.16	596.01	11.68	592.49	9.88	594.29	10.26	593.91	8.12	596.05
PZ-10S	605.19	9.43	595.76	8.75	596.44	7.89	597.30	9.75	595.44	9.80	595.39	9.05	596.14	8.79	596.40
PZ-10D	605.02	10.02	595.00	8.85	596.17	8.31	596.71	9.57	595.45	9.51	595.51	9.20	595.82	8.80	596.22
PZ-11S	601.36	6.40	594.96	NA	NA	4.80	596.56	5.98	595.38	6.00	595.36	5.24	596.12	5.40	595.96
PZ-12S	600.9	7.67	593.23	6.86	594.04	4.97	595.93	7.34	593.56	7.55	593.35	6.21	594.69	6.85	594.05
PZ-13S	602.69	8.36	594.33	7.92	594.77	6.52	596.17	8.53	594.16	8.77	593.92	6.16	596.53	10.58	592.11
PZ-14S	601.19	8.82	592.37	8.05	593.14	6.34	594.85	8.73	592.46	8.74	592.45	8.06	593.13	9.67	591.52

Notes:
TOC: Top of casing
DTW: Depth to water
ft amsl: feet above mean sea level
ft btoc: feet below top of casing
NA: depth to water was not measured.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-01	HPT-01-DL	HPT-01	HPT-03	HPT-03	HPT-03	HPT-04	HPT-04	HPT-04	HPT-05
		Sample ID	VAP-HPT1(14-16)-120215	VAP-HPT1(14-16)-120215-DL	VAP-HPT1(18-20)-120215	VAP-HPT3(13-16)-120215	VAP-HPT3(18-21)-120215	VAP-HPT3(8-10)-120215	VAP-HPT4(13-15)-120315	VAP-HPT4(17-19)-120315	VAP-HPT4(9-12)-120315	VAP-HPT-05(10-13)-110215
		Sample Date	12/2/2015	12/2/2015-DL	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/3/2015	12/3/2015	12/3/2015	11/2/2015
Analyte	T/D	Units										
Anions												
Ammonia Nitrogen	N	mg/l	**73**	**73**	**98**	**65**	**94**	**14**	**38**	**45**	**35**	**19**
Metals												
Aluminum	D	mg/l	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	**0.062 J**	**0.17 J**	< 0.20 U
Aluminum	T	mg/l	**0.10 J**	**0.10 J**	**0.33**	**3.3**	**33**	**2.6**	**10**	**14**	**13**	**0.31 J**
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	**0.042**	< 0.020 U	**0.0099 J**	**0.012 J**	**0.0090 J**	< 0.020 U
Arsenic	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Arsenic	T	mg/l	**0.011**	**0.011**	< 0.010 U	**0.022**	**0.1**	< 0.010 U	**0.0061 J**	**0.0056 J**	**0.013**	**0.0035 J**
Barium	D	mg/l	**0.3**	**0.3**	**0.47**	**0.48**	**0.33**	**0.48**	**0.95**	**0.71**	**0.6**	**0.47**
Barium	T	mg/l	**0.3**	**0.3**	**0.52**	**1.1**	**2.3**	**0.61**	**1.3**	**1.1**	**1.2**	**0.42**
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	**0.0024 J**	**0.0059**	< 0.0040 U	**0.0016 J**	**0.0026 J**	**0.0015 J**	< 0.0040 U
Cadmium	D	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	**0.0013 J**	< 0.0020 U	**0.0018 J**	**0.0017 J**	**0.0014 J**	**0.0014 J**
Cadmium	T	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	**0.0011 J**	**0.036**	**0.0013 J**	**0.0033**	**0.0034**	**0.0055**	**0.0012 J**
Calcium	D	mg/l	**160**	**160**	**72**	**130**	**99**	**100**	**51**	**72**	**37**	**170 J**
Calcium	T	mg/l	**2000**	**2000**	**81**	**170**	**180**	**110**	**130**	**170**	**86**	**150 J**
Chromium	D	mg/l	< 0.010 U	< 0.010 U	**0.0045 J**	**0.0043 J**	**0.0043 J**	< 0.010 U	< 0.010 U	< 0.010 U	**0.0052 J**	**0.0031 J**
Chromium	T	mg/l	< 0.010 U	< 0.010 U	**0.0068 J**	**0.056**	**0.32**	**0.013**	**0.098**	**0.11**	**0.25**	**0.0055 J**
Cobalt	D	mg/l	< 0.0050 U	< 0.0050 U	**0.0012 J**	< 0.0050 U	**0.0018 J**	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Cobalt	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0023 J**	**0.035**	< 0.0050 U	**0.0064**	**0.0077**	**0.0095**	< 0.0050 U
Copper	D	mg/l	**0.0022 J**	**0.0022 J**	< 0.010 U	< 0.010 U	**0.0028 J**	< 0.010 U	**0.0022 J**	**0.0024 J**	**0.0039 J**	< 0.010 U
Copper	T	mg/l	**0.0029 J**	**0.0029 J**	**0.019**	**0.015**	**1.1**	**0.0075 J**	**0.073**	**0.097**	**0.25**	**0.0023 J**
Iron	D	mg/l	< 0.20 U	< 0.20 U	**13**	**30**	**28**	**15**	**2.3**	**2.4**	**1.3**	**2.8**
Iron	T	mg/l	**0.3**	**0.3**	**18**	**73**	**240**	**27**	**47**	**53**	**35**	**4.2**
Lead	D	mg/l	< 0.0050 U	< 0.0050 U	**0.0034 J**	< 0.0050 U	< 0.0050 U	**0.0042 J**	< 0.0050 U	< 0.0050 U	**0.017**	**0.0028 J**
Lead	T	mg/l	**0.014**	**0.014**	**0.063**	**0.055**	**1.6**	**0.046**	**0.4**	**0.25**	**1.4**	**0.0067**
Magnesium	D	mg/l	< 0.10 U	< 0.10 U	**65**	**58**	**69**	**36**	**76**	**79**	**69**	**140 J**
Magnesium	T	mg/l	**0.74**	**0.74**	**67**	**65**	**84**	**35**	**93**	**98**	**87**	**120 J**
Manganese	D	mg/l	< 0.010 U	< 0.010 U	**0.085**	**0.25**	**0.15**	**0.59**	**0.097**	**0.17**	**0.077**	**0.6**
Manganese	T	mg/l	**0.023**	**0.023**	**0.18**	**0.88**	**1.5**	**0.71**	**1.2**	**1.7**	**0.71**	**0.58**
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	**0.00089**	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Nickel	D	mg/l	**0.011**	**0.011**	**0.012**	**0.0037 J**	**0.0084 J**	< 0.010 U	**0.0048 J**	**0.0066 J**	**0.0060 J**	< 0.010 U
Nickel	T	mg/l	**0.0090 J**	**0.0090 J**	**0.014**	**0.042**	**0.96**	**0.0083 J**	**0.035**	**0.05**	**0.053**	< 0.010 U
Potassium	D	mg/l	**23 J**	**23 J**	**97 J**	**44 J**	**60**	**24 J**	**63**	**62**	**60**	**56 J**
Potassium	T	mg/l	**24 J**	**24 J**	**99 J**	**46 J**	**63**	**23 J**	**63**	**66**	**65**	**49 J**
Selenium	D	mg/l	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 U	< 0.010 UJ	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 UJ
Selenium	T	mg/l	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	**0.0076 J**	< 0.010 UJ	< 0.010 U	**0.0046 J**	< 0.010 U	< 0.010 UJ
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0044 J**	**0.032**	< 0.0050 U	**0.0017 J**	< 0.0050 U	**0.0035 J**	< 0.0050 U
Sodium	D	mg/l	**77**	**77**	**330**	**160**	**220**	**89**	**260**	**260**	**250**	**320**
Sodium	T	mg/l	**78**	**78**	**340**	**170**	**220**	**87**	**260**	**260**	**260**	**290**
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	< 0.0050 U	**0.0021 J**	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0030 J**	**0.0019 J**	**0.0022 J**
Vanadium	T	mg/l	< 0.0050 U	< 0.0050 U	**0.0043 J**	**0.038**	**0.089**	**0.0064**	**0.025**	**0.026**	**0.035**	**0.0033 J**
Zinc	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	**0.041**	**0.013 J**	< 0.020 U	< 0.020 U	**0.03**	< 0.020 U
Zinc	T	mg/l	< 0.020 U	< 0.020 U	**0.11**	**0.81**	**4.7**	**0.81**	**0.65**	**0.65**	**1.7**	**0.010 J**

Notes
All detections are shown in bold.

VOCs	Volatile Organic Compounds
T/D	Total/Dissolved
mg/L	milligram per liter
ug/L	microgram per liter
B	Associated compound was found in the sample and the blank.
J	Compound was identified; result is an estimated value.
R	The data was rejected due to matrix interference.
U	Compound was not detected. The associated value is the compound quantitation limit.
UB	Compound considered non-detect at the listed value due to associated blank contamination.
UJ	Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-01	HPT-01-DL	HPT-01	HPT-03	HPT-03	HPT-03	HPT-04	HPT-04	HPT-04	HPT-05
		Sample ID	VAP-HPT1(14-16)-120215	VAP-HPT1(14-16)-120215-DL	VAP-HPT1(18-20)-120215	VAP-HPT3(13-16)-120215	VAP-HPT3(18-21)-120215	VAP-HPT3(8-10)-120215	VAP-HPT4(13-15)-120315	VAP-HPT4(17-19)-120315	VAP-HPT4(9-12)-120315	VAP-HPT-05(10-13)-110215
		Sample Date	12/2/2015	12/2/2015-DL	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/3/2015	12/3/2015	12/3/2015	11/2/2015
Analyte	T/D	Units										
VOCs												
1,1,1-Trichloroethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	**4.7 J**	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	R	< 50 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	R	< 50 UJ	**0.53 J**	**8.3**	**60**	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	R	< 50 UJ	< 1.0 U	**1.5**	**2.7**	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	**5.2 J**	< 50 UJ	< 1.0 U	**7.6**	**19**	**1.1**	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
2-Butanone (MEK)	N	ug/l	**1700**	**1900 DJ**	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U
4-Methyl-2-Pentanone	N	ug/l	**4300**	**4500 DJ**	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U
Acetone	N	ug/l	**980**	**1100 J**	**5.3**	**6**	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	**16**
Benzene	N	ug/l	**77**	**86 J**	**33**	**10**	**9.2**	**3.1**	**10**	**140**	**10**	**160**
Bromodichloromethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	R	< 100 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 4.0 U	< 2.0 U	< 2.0 U
Carbon Disulfide	N	ug/l	R	< 100 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 4.0 U	< 2.0 U	**7.7**
Carbon Tetrachloride	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	R	< 100 UJ	< 2.0 U	< 2.0 U	**7.6**	< 2.0 U	< 2.0 U	< 4.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	R	< 50 UJ	< 1.0 U	**340 D**	**110**	**1.5**	**1.9**	**3.1**	**2**	**2**
Chlorodibromomethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	R	< 50 UJ	< 1.0 U	**8.1**	**2.7**	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Dichloromethane	N	ug/l	R	< 250 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 21 UB
Ethylbenzene	N	ug/l	**140 J**	**140 J**	**2.8**	**0.61**	**0.89**	< 0.50 U	< 0.50 U	**12**	< 0.50 U	**0.42 J**
Isopropylbenzene	N	ug/l	**19 J**	< 50 UJ	**8.8**	**4.8**	**11**	**3.2**	**0.70 J**	**2.2**	**0.80 J**	**1.7**
Methyl Acetate	N	ug/l	R	< 250 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	R	< 250 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U
Methylcyclohexane	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Methyl-tert-butylether	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	**120 J**	**120 J**	**2.4**	**1**	**1.1**	< 0.50 U	**0.56**	**21**	**0.48 J**	**7.5**
Total Xylenes	N	ug/l	**180 J**	**180 J**	**14**	**2.4**	**4.8**	**1.3**	**1.5**	**41**	**1.1**	**2.4**
trans-1,2-Dichloroethene	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	R	< 50 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	R	< 25 UJ	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U
Vinyl chloride	N	ug/l	R	< 25 UJ	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	**15**

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
R The data was rejected due to matrix interference.
U Compound was not detected. The associated value is the compound quantitation limit.
UB Compound considered non-detect at the listed value due to associated blank contamination.
UJ Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-05	HPT-05	HPT-05	HPT-06	HPT-06	HPT-06	HPT-07	HPT-07	HPT-07
		Sample ID	VAP-HPT-05(14-17)-110215	VAP-HPT-05(18-20)-110215	VAP-HPT-05(6-9)-110215	VAP-HPT-06(10-13)-110315	VAP-HPT-06(14-17)-110315	VAP-HPT-06(18-20)-110315	VAP-HPT-07(10-12)-110315	VAP-HPT-07(14-17)-110315	VAP-HPT-07(6-9)-110315
		Sample Date	11/2/2015	11/2/2015	11/2/2015	11/3/2015	11/3/2015	11/3/2015	11/3/2015	11/3/2015	11/3/2015
Analyte	T/D	Units									
Anions											
Ammonia Nitrogen	N	mg/l	**22**	**30**	**5.3**	**54**	**110**	**110**	**120**	**81**	**86**
Metals											
Aluminum	D	mg/l	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Aluminum	T	mg/l	**5.4 J**	**1.0 J**	**0.90 J**	**4.6 J**	**15 J**	**0.78 J**	**2.0 J**	**1.9 J**	**1.5 J**
Antimony	D	mg/l	< 0.020 U	< 0.020 U	**0.0078 J**	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	< 0.020 U	**0.013 J**	**0.0081 J**	**0.012 J**	< 0.020 U	< 0.020 U	< 0.020 U	**0.0077 J**
Arsenic	D	mg/l	< 0.010 U	< 0.010 U	**0.019**	< 0.010 U	< 0.010 U	< 0.010 U	**0.011**	< 0.010 U	< 0.010 U
Arsenic	T	mg/l	**0.01**	< 0.010 U	**0.018**	**0.017**	**0.031**	**0.0041 J**	**0.015**	**0.0090 J**	**0.0041 J**
Barium	D	mg/l	**0.3**	**0.11**	**0.051**	**0.22**	**0.23**	**0.31**	**0.17**	**0.27**	**0.25**
Barium	T	mg/l	**0.37**	**0.12**	**0.054**	**0.36**	**0.62**	**0.33**	**0.33**	**0.39**	**0.26**
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	**0.0014 J**	**0.0029 J**	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Cadmium	D	mg/l	**0.0011 J**	**0.0011 J**	**0.0012 J**	**0.0016 J**	**0.0011 J**	**0.0014 J**	**0.0015 J**	**0.00097 J**	**0.0012 J**
Cadmium	T	mg/l	**0.0016 J**	**0.0012 J**	**0.003**	**0.0036**	**0.013**	**0.0033**	**0.0026**	**0.0037**	**0.0015 J**
Calcium	D	mg/l	**340**	**270**	**110**	**210**	**160**	**170**	**200**	**120**	**170**
Calcium	T	mg/l	**350**	**280**	**120**	**210**	**230**	**170**	**210**	**120**	**200**
Chromium	D	mg/l	**0.0024 J**	< 0.010 U	< 0.010 U	**0.0024 J**	**0.0047 J**	**0.0032 J**	**0.066**	**0.0038 J**	**0.0026 J**
Chromium	T	mg/l	**0.025**	**0.011**	**0.0048 J**	**0.035**	**0.16**	**0.014**	**0.095**	**0.058**	**0.018**
Cobalt	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0031 J**	< 0.0050 U	< 0.0050 U
Cobalt	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0042 J**	**0.02**	**0.0019 J**	**0.0072**	**0.0028 J**	**0.0015 J**
Copper	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Copper	T	mg/l	**0.026**	**0.0056 J**	**0.0065 J**	**0.13**	**0.36**	**0.023**	**0.059**	**0.035**	**0.01**
Iron	D	mg/l	**3**	**1.2**	**0.11 J**	**18**	**27**	**31**	**9.8**	**26**	**19**
Iron	T	mg/l	**20**	**3.8**	**1.8**	**51**	**170**	**38**	**25**	**41**	**22**
Lead	D	mg/l	< 0.0050 U	**0.0039 J**	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Lead	T	mg/l	**0.064**	**0.011**	**0.022**	**0.19**	**0.43**	**0.036**	**0.41**	**0.13**	**0.091**
Magnesium	D	mg/l	**75**	**72**	**46**	**170**	**120**	**140**	**310**	**100**	**100**
Magnesium	T	mg/l	**76**	**73**	**49**	**160**	**140**	**130**	**330**	**100**	**110**
Manganese	D	mg/l	**0.43**	**0.22**	**0.29**	**0.63**	**0.5**	**0.48**	**0.48**	**0.24**	**0.17**
Manganese	T	mg/l	**0.64**	**0.35**	**0.46**	**0.89**	**2.4**	**0.52**	**0.59**	**0.32**	**0.24**
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	**0.00034**	< 0.00020 U	< 0.00020 U	**0.000079 J**	**0.00015 J**	**0.00011 J**	**0.00012 J**	**0.00014 J**	**0.000061 J**
Nickel	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	**0.0058 J**	**0.0063 J**	**0.0042 J**	**0.0082 J**	**0.0046 J**	**0.0082 J**
Nickel	T	mg/l	**0.014**	**0.0035 J**	**0.0056 J**	**0.029**	**0.61**	**0.018**	**0.031**	**0.071**	**0.015**
Potassium	D	mg/l	**49**	**61**	**12**	**83**	**85**	**88**	**110**	**76**	**81**
Potassium	T	mg/l	**49**	**61**	**12**	**78**	**93**	**86**	**110**	**74**	**80**
Selenium	D	mg/l	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ
Selenium	T	mg/l	**0.0079 J**	< 0.010 UJ	< 0.010 UJ	**0.0050 J**	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ	< 0.010 UJ
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0047 J**	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Sodium	D	mg/l	**290**	**220**	**400**	**540**	**400**	**430**	**420**	**280**	**330**
Sodium	T	mg/l	**280**	**210**	**410**	**530**	**430**	**420**	**420**	**270**	**320**
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	**0.0045 J**	< 0.0050 U	**0.0025 J**	**0.0023 J**	< 0.0050 U	**0.034**	< 0.0050 U	< 0.0050 U
Vanadium	T	mg/l	**0.0096**	**0.0075**	**0.0044 J**	**0.015**	**0.041**	**0.0030 J**	**0.041**	**0.0056**	**0.0051**
Zinc	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	**0.0094 J**	< 0.020 U	< 0.020 U	< 0.020 U
Zinc	T	mg/l	**0.27**	**0.025**	**0.017 J**	**0.39**	**1.7**	**0.89**	**0.21**	**0.34**	**0.063**

Notes
All detections are shown in bold.

VOCs	Volatile Organic Compounds
T/D	Total/Dissolved
mg/L	milligram per liter
ug/L	microgram per liter
B	Associated compound was found in the sample and the blank.
J	Compound was identified; result is an estimated value.
R	The data was rejected due to matrix interference.
U	Compound was not detected. The associated value is the compound quantitation limit.
UB	Compound considered non-detect at the listed value due to associated blank contamination.
UJ	Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-05	HPT-05	HPT-05	HPT-06	HPT-06	HPT-06	HPT-07	HPT-07	HPT-07
		Sample ID	VAP-HPT-05(14-17)-110215	VAP-HPT-05(18-20)-110215	VAP-HPT-05(6-9)-110215	VAP-HPT-06(10-13)-110315	VAP-HPT-06(14-17)-110315	VAP-HPT-06(18-20)-110315	VAP-HPT-07(10-12)-110315	VAP-HPT-07(14-17)-110315	VAP-HPT-07(6-9)-110315
		Sample Date	11/2/2015	11/2/2015	11/2/2015	11/3/2015	11/3/2015	11/3/2015	11/3/2015	11/3/2015	11/3/2015
Analyte	T/D	Units									
VOCs											
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	**8.9**	< 1.0 U	< 1.0 U	< 1.0 U	**0.57 J**	< 1.0 U	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	**1.0 J**	< 1.0 U	< 1.0 U	< 1.0 U	**4**	**1**	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	**1.5**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	**4**	**3.9**	**3.6**	**2.5**	**8.5**	**4.6**
1,4-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Butanone (MEK)	N	ug/l	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	**10**	< 5.0 U	**10**
4-Methyl-2-Pentanone	N	ug/l	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	N	ug/l	< 5.0 U	< 5.0 U	< 10 U	**8.4**	**5.1**	**6.9**	**28**	**8.3**	< 5.0 U
Benzene	N	ug/l	**28**	**11**	**330**	**10**	**33**	**31**	**36**	**30**	**46**
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 2.0 U	< 2.0 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Disulfide	N	ug/l	< 2.0 U	< 2.0 U	**3.0 J**	< 2.0 U	< 2.0 U	< 2.0 U	**1.4 J**	< 2.0 U	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	**0.96 J**	< 1.0 U	< 2.0 U	**6.4**	**36**	**26**	**10**	**100**	**64**
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.9**	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	**1.0 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	< 1.0 U	< 1.0 U	**3.4**	< 1.0 U	**1.2**	**1.6**	< 1.0 U	**2.5**	**1.2**
Dichloromethane	N	ug/l	< 5.0 U	< 5.6 UB	< 18 UB	< 5.3 UB	< 5.0 UB	< 5.4 UB	< 5.0 U	< 5.0 U	< 5.4 UB
Ethylbenzene	N	ug/l	< 0.50 U	< 0.50 U	**3.1**	< 0.50 U	< 0.50 U	< 0.50 U	**14**	**1.4**	**0.46 J**
Isopropylbenzene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	**2.7**	**8.7**	**7.5**	**3.9**	**9.7**	**6.9**
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylcyclohexane	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.66 J**	< 1.0 U
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.83 J**	< 1.0 U
Toluene	N	ug/l	**2**	**3.8**	**18**	**0.7**	< 0.50 U	< 0.50 U	**4.6**	< 0.50 U	< 0.50 U
Total Xylenes	N	ug/l	**0.54 J**	< 1.0 U	**3.5**	< 1.0 U	**1.2**	< 1.0 U	**26**	**3.4**	**1.8**
trans-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride	N	ug/l	< 0.50 U	< 0.50 U	**1.8**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
R The data was rejected due to matrix interference.
U Compound was not detected. The associated value is the compound quantitation limit.
UB Compound considered non-detect at the listed value due to associated blank contamination.
UJ Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-08	HPT-08	HPT-09	HPT-09	HPT-10	HPT-10	HPT-11	HPT-11	HPT-11
		Sample ID	VAP-HPT-08(14-17)-110315	VAP-HPT-08(9-12)-110315	VAP-HPT-09(14-17)-110415	VAP-HPT-09(9-12)-110415	VAP-HPT10(10-13)-110515	VAP-HPT10(22-25)-110515	VAP-HPT-11(10-13)-110415	VAP-HPT-11(16-18)-110415	VAP-HPT11(19-22)-110415
		Sample Date	11/3/2015	11/3/2015	11/4/2015	11/4/2015	11/5/2015	11/5/2015	11/4/2015	11/4/2015	11/4/2015
Analyte	T/D	Units									
Anions											
Ammonia Nitrogen	N	mg/l	**120**	**55**	**22**	**16**	**420**	**530**	**620**	**790**	**650**
Metals											
Aluminum	D	mg/l	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	**0.15 J**	**0.14 J**	**0.2**	**0.46**	**0.31**
Aluminum	T	mg/l	**2**	**12**	**8.1**	**4.8**	**4.2**	**12**	**32**	**8**	**2.9**
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	**0.0075 J**	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	**0.019 J**	< 0.020 U	< 0.020 U	**0.0099 J**	**0.017 J**	**0.017 J**	**0.015 J**	**0.010 J**
Arsenic	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	**0.017**	**0.013**	**0.039**	**0.044**	**0.017**
Arsenic	T	mg/l	**0.0076 J**	**0.036**	**0.031**	**0.0062 J**	**0.049**	**0.06**	**0.15**	**0.068**	**0.048**
Barium	D	mg/l	**0.45**	**0.86**	**0.28**	**0.23**	**0.29**	**0.21**	**0.27**	**0.92**	**0.27**
Barium	T	mg/l	**0.43**	**2.9**	**0.56**	**0.35**	**0.52**	**0.74**	**1.4**	**1.2**	**0.49**
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	**0.0022 J**	**0.0015 J**	< 0.0040 U	< 0.0040 U	**0.0011 J**	**0.0058**	**0.00085 J**	< 0.0040 U
Cadmium	D	mg/l	**0.0014 J**	**0.0011 J**	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	**0.0015 J**	**0.0026**	**0.0011 J**
Cadmium	T	mg/l	**0.0041**	**0.012**	**0.0087**	**0.0035**	**0.013**	**0.68**	**0.023**	**0.035**	**0.0079**
Calcium	D	mg/l	**80 J**	**66**	**95**	**94**	**16**	**13**	**10**	**9.7**	**8.6**
Calcium	T	mg/l	**65 J**	**81**	**110**	**120**	**24**	**47**	**26**	**12**	**13**
Chromium	D	mg/l	**0.0034 J**	**0.0027 J**	< 0.010 U	< 0.010 U	**0.058**	**0.087**	**0.099**	**0.28**	**0.13**
Chromium	T	mg/l	**0.036**	**0.21**	**0.097**	**0.035**	**0.13**	**0.24**	**0.32**	**0.42**	**0.22**
Cobalt	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.026**	**0.04**	**0.04**	**0.052**	**0.038**
Cobalt	T	mg/l	**0.0031 J**	**0.015**	**0.0094**	**0.0079**	**0.034**	**0.092**	**0.069**	**0.066**	**0.051**
Copper	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	**0.0044 J**	**0.018**	**0.0053 J**
Copper	T	mg/l	**0.051**	**0.62**	**0.21**	**0.053**	**0.18**	**0.62**	**0.99**	**0.93**	**0.095**
Iron	D	mg/l	**19**	**17**	**18**	**15**	**4.4**	**6**	**5.8**	**5.9**	**3.9**
Iron	T	mg/l	**32**	**110**	**64**	**43**	**35**	**110**	**190**	**14**	**15**
Lead	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0098**	**0.0059**	**0.0044 J**	**0.046**	**0.024**
Lead	T	mg/l	**0.29**	**1.8**	**0.31**	**0.076**	**1.7**	**1.3**	**3.7**	**2.1**	**0.73**
Magnesium	D	mg/l	**100 J**	**85**	**38**	**35**	**49**	**44**	**43**	**32**	**21**
Magnesium	T	mg/l	**80 J**	**85**	**43**	**45**	**52**	**57**	**46**	**31**	**28**
Manganese	D	mg/l	**0.082**	**0.049**	**0.36**	**0.45**	**0.024**	**0.028**	**0.023**	**0.024**	**0.013**
Manganese	T	mg/l	**0.17**	**0.59**	**0.77**	**0.81**	**0.21**	**0.75**	**0.94**	**0.088**	**0.067**
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	< 0.00020 U	< 0.00020 U	**0.000088 J**	< 0.00020 U	**0.00034**	**0.00019 J**	**0.00029**	**0.0011**	**0.00074**
Nickel	D	mg/l	**0.0080 J**	**0.0032 J**	< 0.010 U	< 0.010 U	**0.099**	**0.17**	**0.14**	**0.21**	**0.12**
Nickel	T	mg/l	**0.024**	**0.066**	**0.042**	**0.034**	**0.17**	**0.78**	**0.4**	**0.28**	**0.19**
Potassium	D	mg/l	**71 J**	**47**	**16**	**14**	**380**	**490**	**690**	**870**	**540**
Potassium	T	mg/l	**56 J**	**47**	**17**	**18**	**380**	**500**	**650**	**870**	**670**
Selenium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	**0.0060 J**	**0.0055 J**	**0.0060 J**	**0.0070 J**	**0.0084 J**	**0.0054 J**
Selenium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	**0.0077 J**	**0.013**	**0.012**	**0.014**	**0.015**
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	**0.0014 J**	**0.0043 J**	**0.076**	< 0.0050 U	**0.0030 J**	**0.0073**	**0.017**	**0.019**	**0.0016 J**
Sodium	D	mg/l	**230 J**	**170**	**85**	**76**	**2700**	**4000 J**	**4300 J**	**4500 J**	**3500 J**
Sodium	T	mg/l	**180 J**	**160**	**91**	**92**	**3200**	**2600 J**	**3600 J**	**3900 J**	**3000 J**
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.014**	**0.022**	**0.058**	**0.087**	**0.023**
Vanadium	T	mg/l	**0.0064**	**0.018**	**0.019**	**0.024**	**0.029**	**0.067**	**0.19**	**0.12**	**0.056**
Zinc	D	mg/l	< 0.020 U	< 0.020 U	**0.034**	< 0.020 U	**0.051**	**0.02**	**0.024**	**0.06**	**0.075**
Zinc	T	mg/l	**1.3**	**3.5**	**2.8**	**0.7**	**2.5**	**2.8**	**2.1**	**2.4**	**1.1**

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
R The data was rejected due to matrix interference.
U Compound was not detected. The associated value is the compound quantitation limit.
UB Compound considered non-detect at the listed value due to associated blank contamination.
UJ Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-08	HPT-08	HPT-09	HPT-09	HPT-10	HPT-10	HPT-11	HPT-11	HPT-11
		Sample ID	VAP-HPT-08(14-17)-110315	VAP-HPT-08(9-12)-110315	VAP-HPT-09(14-17)-110415	VAP-HPT-09(9-12)-110415	VAP-HPT10(10-13)-110515	VAP-HPT10(22-25)-110515	VAP-HPT-11(10-13)-110415	VAP-HPT-11(16-18)-110415	VAP-HPT11(19-22)-110415
		Sample Date	11/3/2015	11/3/2015	11/4/2015	11/4/2015	11/5/2015	11/5/2015	11/4/2015	11/4/2015	11/4/2015
Analyte	T/D	Units									
VOCs											
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**0.69 J**	< 1.0 U	**1.1**	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**3.1**	**1.9**	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	**3.8**	**1.6**	**1.6**	< 1.0 U	**4.3**	**6.9**	**30**	**26**	**7.8**
2-Butanone (MEK)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	**21**	**6.8**
4-Methyl-2-Pentanone	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	**12**	**65**	**17**
Acetone	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	**11**	**11**	**13**	**25**	**16**
Benzene	N	ug/l	**8.5**	< 0.50 U	**1.5**	< 0.50 U	**7.9**	**14**	**5**	**4.6**	**6.8**
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Disulfide	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	**42**	**2.5**	**11**	< 1.0 U	**2**	**6.3**	**1.2**	< 1.0 U	< 1.0 U
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**3.8**	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.97 J**	< 1.0 U	**1.7**	**5.3**	**2.3**
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	< 1.0 U	**1.2**	< 1.0 U	< 1.0 U	**1.3**	< 1.0 U	< 1.0 U	**1.7**	**0.79 J**
Dichloromethane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	< 0.50 U	< 0.50 U	**0.55**	< 0.50 U	**62**	**63**	**97**	**56**	**270**
Isopropylbenzene	N	ug/l	**450**	**45**	**7.6**	**1.3**	**5.9**	**4.8**	**9.8**	< 1.0 U	**8.6**
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylcyclohexane	N	ug/l	**0.65 J**	**0.64 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.6**	**1.7**	**1.4**
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.42 J**	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	< 0.50 U	< 0.50 U	**0.57**	< 0.50 U	**14**	**13**	**80**	**180**	**150**
Total Xylenes	N	ug/l	**0.35 J**	**0.46 J**	**5.8**	< 1.0 U	**210**	**170**	**400**	**270**	**1100**
trans-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.68**	< 0.50 U	**1.6**	**4.9**	**5**

Notes
All detections are shown in bold.

VOCs	Volatile Organic Compounds
T/D	Total/Dissolved
mg/L	milligram per liter
ug/L	microgram per liter
B	Associated compound was found in the sample and the blank.
J	Compound was identified; result is an estimated value.
R	The data was rejected due to matrix interference.
U	Compound was not detected. The associated value is the compound quantitation limit.
UB	Compound considered non-detect at the listed value due to associated blank contamination.
UJ	Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-11	HPT-12	HPT-13	HPT-13	HPT-13	HPT-13	HPT-14	HPT-14	HPT-14
		Sample ID	VAP-HPT11(24-27)-110415	VAP-HPT12(8-11)-110515	VAP-HPT13(13-16)-110515	VAP-HPT13(19-22)-110615	VAP-HPT13(24-27)-110615	VAP-HPT13(8-11)-110515	VAP-HPT14(10-13)-110615	VAP-HPT14(14-17)-110615	VAP-HPT14(20-22)-110615
		Sample Date	11/4/2015	11/5/2015	11/5/2015	11/6/2015	11/6/2015	11/5/2015	11/6/2015	11/6/2015	11/6/2015
Analyte	T/D	Units									
Anions											
Ammonia Nitrogen	N	mg/l	**500**	**450**	**810**	**870**	**530**	**620**	**500**	**520**	**520**
Metals											
Aluminum	D	mg/l	**0.19 J**	**0.25**	**1**	**0.78**	**0.11 J**	**0.52**	**0.10 J**	**0.16 J**	**0.15 J**
Aluminum	T	mg/l	**3.2**	**2.2**	**2.4**	**15**	**33**	**6.1**	**5.2**	**4.4**	**8.2**
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	**0.045**	**0.0085 J**	**0.0098 J**	**0.012 J**	**0.021**	**0.011 J**	< 0.020 U	< 0.020 U	< 0.020 U
Arsenic	D	mg/l	**0.015**	**0.015**	**0.027**	**0.034**	**0.013**	**0.023**	**0.0086 J**	**0.02**	**0.012**
Arsenic	T	mg/l	**0.027**	**0.026**	**0.043**	**0.071**	**0.097**	**0.066**	**0.025**	**0.042**	**0.031**
Barium	D	mg/l	**0.59**	**0.16**	**0.28**	**0.37**	**0.12**	**0.49**	**0.14**	**0.12**	**0.21**
Barium	T	mg/l	**0.79**	**0.18**	**0.34**	**1**	**0.86**	**0.82**	**0.19**	**0.17**	**0.27**
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	**0.0015 J**	**0.0016 J**	**0.0015 J**	**0.0010 J**	< 0.0040 U	**0.0013 J**
Cadmium	D	mg/l	< 0.0020 U	**0.0011 J**	**0.0037**	**0.0026**	**0.0019 J**	**0.0015 J**	**0.0022**	**0.0021**	**0.0019 J**
Cadmium	T	mg/l	**0.0042**	**0.0027**	**0.0065**	**0.014**	**0.017**	**0.0057**	**0.003**	**0.0042**	**0.0033**
Calcium	D	mg/l	**10**	**32**	**12**	**11**	**11**	**29**	**19**	**17**	**19**
Calcium	T	mg/l	**12**	**60**	**11**	**42**	**160**	**45**	**36**	**39**	**49**
Chromium	D	mg/l	**0.11**	**0.095**	**0.32**	**0.43**	**0.14**	**0.17**	**0.093**	**0.091**	**0.11**
Chromium	T	mg/l	**0.14**	**0.12**	**0.3**	**0.72**	**0.57**	**0.22**	**0.11**	**0.13**	**0.15**
Cobalt	D	mg/l	**0.034**	**0.024**	**0.058**	**0.06**	**0.032**	**0.049**	**0.024**	**0.026**	**0.029**
Cobalt	T	mg/l	**0.035**	**0.024**	**0.048**	**0.07**	**0.069**	**0.053**	**0.022**	**0.025**	**0.03**
Copper	D	mg/l	**0.0031 J**	**0.0023 J**	**0.02**	**0.019**	**0.0066 J**	**0.0060 J**	**0.0068 J**	**0.0077 J**	**0.0072 J**
Copper	T	mg/l	**0.084**	**0.028**	**0.071**	**0.92**	**1.3**	**0.26**	**0.13**	**0.17**	**0.12**
Iron	D	mg/l	**4.7**	**2.3**	**5.5**	**8.6**	**3.8**	**5.2**	**3.2**	**4.2**	**2.8**
Iron	T	mg/l	**9.4**	**4.6**	**11**	**45**	**250**	**36**	**26**	**38**	**30**
Lead	D	mg/l	**0.013**	**0.0064**	**0.078**	**0.022**	< 0.0050 U	**0.022**	**0.0057**	**0.0074**	**0.0043 J**
Lead	T	mg/l	**0.46**	**0.16**	**0.57**	**1.1**	**3**	**0.7**	**0.42**	**0.35**	**0.37**
Magnesium	D	mg/l	**43**	**56**	**25**	**17**	**34**	**45**	**51**	**50**	**56**
Magnesium	T	mg/l	**44**	**58**	**22**	**25**	**65**	**47**	**49**	**47**	**59**
Manganese	D	mg/l	**0.022**	**0.021**	**0.025**	**0.068**	**0.032**	**0.031**	**0.068**	**0.048**	**0.023**
Manganese	T	mg/l	**0.055**	< 0.043 UB	**0.064**	**0.45**	**1.7**	**0.23**	**0.72**	**0.73**	**0.67**
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	**0.00013 J**	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	**0.00011 J**	**0.00012 J**	**0.00061**	**0.0021**	**0.00074**	**0.00045**	**0.00024**	**0.00035**	**0.00029**
Nickel	D	mg/l	**0.11**	**0.069**	**0.22**	**0.23**	**0.11**	**0.15**	**0.072**	**0.088**	**0.099**
Nickel	T	mg/l	**0.12**	**0.074**	**0.2**	**0.29**	**0.36**	**0.19**	**0.088**	**0.12**	**0.13**
Potassium	D	mg/l	**460**	**390**	**680 J**	**650**	**370 J**	**540**	**370 J**	**390 J**	**400**
Potassium	T	mg/l	**460**	**380**	**580 J**	**640**	**310 J**	**510**	**320 J**	**330 J**	**370**
Selenium	D	mg/l	**0.0069 J**	< 0.010 U	**0.012**	**0.0075 J**	< 0.010 U	**0.0095 J**	< 0.010 U	< 0.010 U	**0.0091 J**
Selenium	T	mg/l	< 0.010 U	**0.011**	**0.016**	**0.025**	**0.015**	**0.011**	**0.01**	**0.014**	**0.0064 J**
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	**0.012**	< 0.0050 U	**0.0026 J**	**0.013**	**0.15**	**0.0014 J**	< 0.0050 U	< 0.0050 U	< 0.0050 U
Sodium	D	mg/l	**3000 J**	**3200 J**	**3900**	**4000**	**2500 J**	R	**2300 J**	**2600 J**	**2500 J**
Sodium	T	mg/l	**2300 J**	**2800 J**	**3600**	**3600**	**2100 J**	R	**1900 J**	**1800 J**	**2100 J**
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	**0.027**	**0.027**	**0.04**	**0.045**	**0.019**	**0.026**	**0.018**	**0.036**	**0.025**
Vanadium	T	mg/l	**0.039**	**0.035**	**0.041**	**0.074**	**0.069**	**0.046**	**0.032**	**0.046**	**0.043**
Zinc	D	mg/l	**0.03**	**0.02**	**0.24**	**0.29**	**0.016 J**	**0.088**	**0.019 J**	**0.03**	**0.048**
Zinc	T	mg/l	**1.1**	**0.18**	**1**	**2.3**	**3.9**	**0.71**	**0.4**	**0.83**	**0.48**

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
R The data was rejected due to matrix interference.
U Compound was not detected. The associated value is the compound quantitation limit.
UB Compound considered non-detect at the listed value due to associated blank contamination.
UJ Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-11	HPT-12	HPT-13	HPT-13	HPT-13	HPT-13	HPT-14	HPT-14	HPT-14
		Sample ID	VAP-HPT11(24-27)-110415	VAP-HPT12(8-11)-110515	VAP-HPT13(13-16)-110515	VAP-HPT13(19-22)-110615	VAP-HPT13(24-27)-110615	VAP-HPT13(8-11)-110515	VAP-HPT14(10-13)-110615	VAP-HPT14(14-17)-110615	VAP-HPT14(20-22)-110615
		Sample Date	11/4/2015	11/5/2015	11/5/2015	11/6/2015	11/6/2015	11/5/2015	11/6/2015	11/6/2015	11/6/2015
Analyte	T/D	Units									
VOCs											
1,1,1-Trichloroethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	**1.4**	**1.5**	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 10 U	< 5.0 U	< 10 U	< 25 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	< 2.0 U	**2.8**	< 2.0 U	< 5.0 U	**14**	**2.6**	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	< 2.0 U	**10**	**28**	**15**	**7.9**	**13**	< 1.0 U	< 1.0 U	< 1.0 U
2-Butanone (MEK)	N	ug/l	< 10 U	< 5.0 U	< 10 U	< 25 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
4-Methyl-2-Pentanone	N	ug/l	**5.7 J**	< 5.0 U	**41**	**29**	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	N	ug/l	**14 J**	**9.5**	< 34 UB	< 30 UB	< 15 UB	**16**	< 9.5 UB	< 17 UB	< 14 UB
Benzene	N	ug/l	**18 J**	**8.9**	**20**	**16**	**22**	**11**	**20**	**17**	**21**
Bromodichloromethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 4.0 U	< 2.0 U	< 4.0 U	< 10 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Disulfide	N	ug/l	< 4.0 U	< 2.0 U	< 4.0 U	< 10 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 4.0 U	< 2.0 U	< 4.0 U	< 10 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	< 2.0 U	**16**	**3.3**	< 5.0 U	**3.3**	**1.4**	< 1.0 U	< 1.0 U	**0.92 J**
Chlorodibromomethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 2.0 U	**32**	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	< 2.0 U	< 1.0 U	**4**	< 5.0 U	< 2.0 U	< 1.0 U	**1.1**	< 1.0 U	**1.3**
cis-1,3-Dichloropropene	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	**4.4**	**3.5**	**1.8**
Dichloromethane	N	ug/l	< 10 U	< 5.0 U	< 10 U	< 25 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	**690**	**91**	**270**	**390**	**220**	**100**	**42**	**14**	**34**
Isopropylbenzene	N	ug/l	**200**	**6.9**	**14**	**17**	**7.7**	**7.2**	< 1.0 U	**2.2**	< 1.0 U
Methyl Acetate	N	ug/l	< 10 U	< 5.0 U	< 10 U	< 25 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 10 U	< 5.0 U	< 10 U	< 25 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylcyclohexane	N	ug/l	**7.0 J**	**1.6**	**2.1**	< 5.0 U	< 2.0 U	< 1.0 U	**3**	**3.1**	**1.6**
Methyl-tert-butylether	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	**0.70 J**	< 1.0 U	**2.1**
Toluene	N	ug/l	**330 J**	**14**	**300**	**250**	**57**	**8.3**	**12**	**10**	**5.7**
Total Xylenes	N	ug/l	**1600**	**210**	**940**	**1800**	**930**	**380**	**220**	**87**	**160**
trans-1,2-Dichloroethene	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	**0.69 J**	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 2.0 U	< 1.0 U	< 2.0 U	< 5.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 1.0 U	< 0.50 U	< 1.0 U	< 2.5 U	< 1.0 U	< 0.50 U	**0.31 J**	< 0.50 U	**0.61**
Vinyl chloride	N	ug/l	**1.4 J**	< 0.50 U	**4**	**2.9**	**0.64 J**	< 0.50 U	**0.8**	< 0.50 U	**0.56**

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
R The data was rejected due to matrix interference.
U Compound was not detected. The associated value is the compound quantitation limit.
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Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-15	HPT-15	HPT-15	HPT-18	HPT-18	HPT-18	HPT-18	HPT-19	HPT-19	HPT-19
		Sample ID	VAP-HPT15(10-13)-110615	VAP-HPT15(15-18)-110615	VAP-HPT15(20-23)-110615	VAP-HPT18(12-14)-113015	VAP-HPT18(16-18)-113015	VAP-HPT18(19-22)-113015	VAP-HPT18(25-27)-113015	VAP-HPT19(12-14)-113015	VAP-HPT19(6-8)-113015	VAP-HPT19(9-11)-113015
		Sample Date	11/6/2015	11/6/2015	11/6/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015
Analyte	T/D	Units										
Anions												
Ammonia Nitrogen	N	mg/l	**42**	**140**	**120**	**130**	**94**	**58**	**110**	**56**	**19**	**34**
Metals												
Aluminum	D	mg/l	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Aluminum	T	mg/l	**13**	**54**	**11**	**0.68**	**0.46**	**0.22**	**1.2**	**0.76**	**0.55**	**0.44**
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	**0.054**	**0.024**	**0.0075 J**	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Arsenic	D	mg/l	< 0.010 U	< 0.010 U	**0.0038 J**	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	**0.0036 J**	< 0.010 U
Arsenic	T	mg/l	**0.0082 J**	**0.15**	**0.05**	**0.0057 J**	< 0.010 U	< 0.010 U	**0.0035 J**	< 0.010 U	**0.0068 J**	< 0.010 U
Barium	D	mg/l	**0.54**	**0.32**	**0.66**	**1.5**	**1**	**0.7**	**0.21**	**0.73**	**0.35**	**0.66**
Barium	T	mg/l	**0.66**	**2.2**	**0.88**	**1.4**	**1.1**	**0.74**	**0.32**	**0.76**	**0.34**	**0.79**
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	**0.0042**	**0.0021 J**	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Cadmium	D	mg/l	**0.0021**	**0.002**	**0.0021**	**0.0017 J**	**0.0015 J**	**0.0018 J**	**0.0018 J**	**0.0014 J**	**0.0018 J**	**0.0016 J**
Cadmium	T	mg/l	**0.0013 J**	**0.044**	**0.0061**	**0.0022**	**0.0017 J**	**0.0018 J**	**0.0021**	**0.0026**	**0.0024**	**0.002**
Calcium	D	mg/l	**88**	**77**	**98 B**	**130 J**	**110**	**120**	**170**	**120**	**100**	**110**
Calcium	T	mg/l	**170**	**190**	**150 B**	**110 J**	**110**	**120**	**200**	**110**	**98**	**110**
Chromium	D	mg/l	< 0.010 U	**0.0052 J**	**0.0070 J**	**0.0057 J**	**0.0071 J**	**0.0074 J**	**0.05**	**0.0024 J**	< 0.010 U	< 0.010 U
Chromium	T	mg/l	**0.032**	**1.1**	**0.17**	**0.0090 J**	**0.013**	**0.0086 J**	**0.067**	**0.011**	**0.0028 J**	**0.0071 J**
Cobalt	D	mg/l	< 0.0050 U	**0.0037 J**	**0.0026 J**	**0.0027 J**	**0.0021 J**	< 0.0050 U	**0.0054**	< 0.0050 U	**0.0012 J**	< 0.0050 U
Cobalt	T	mg/l	**0.012**	**0.085**	**0.026**	**0.0037 J**	**0.0029 J**	**0.0011 J**	**0.0084**	< 0.0050 U	**0.0014 J**	< 0.0050 U
Copper	D	mg/l	**0.0042 J**	**0.0042 J**	**0.0049 J**	**0.0044 J**	**0.0040 J**	**0.0038 J**	**0.0045 J**	**0.0032 J**	**0.0054 J**	**0.0035 J**
Copper	T	mg/l	**0.057**	**2.4**	**0.9**	**0.024**	**0.015**	**0.0062 J**	**0.011**	**0.029**	**0.028**	**0.012**
Iron	D	mg/l	**4.5**	**16**	**16**	**35**	**28**	**27**	**13**	**16**	**17**	**8.6**
Iron	T	mg/l	**31**	**500**	**98**	**35**	**34**	**29**	**27**	**20**	**18**	**10**
Lead	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Lead	T	mg/l	**0.088**	**3.1**	**0.43**	**0.084**	**0.042**	**0.0084**	**0.031**	**0.096**	**0.063**	**0.072**
Magnesium	D	mg/l	**75**	**92**	**110**	**120**	**100**	**110**	**220**	**79**	**56**	**67**
Magnesium	T	mg/l	**110**	**110**	**130**	**110**	**100**	**110**	**230**	**75**	**52**	**68**
Manganese	D	mg/l	**0.22**	**0.2**	**0.39**	**0.2**	**0.11**	**0.22**	**0.18**	**0.37**	**0.49**	**0.53**
Manganese	T	mg/l	**0.76**	**3.2**	**1.8**	**0.19**	**0.2**	**0.23**	**0.41**	**0.38**	**0.5**	**0.55**
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	**0.000070 J**	**0.000065 J**	**0.00014 J**	**0.0002**	**0.00016 J**	< 0.00020 U	**0.00021**	**0.00013 J**	**0.00036**	< 0.00020 U
Nickel	D	mg/l	**0.0033 J**	**0.01**	**0.017**	**0.018**	**0.02**	**0.017**	**0.076**	< 0.010 U	**0.016**	< 0.010 U
Nickel	T	mg/l	**0.04**	**0.97**	**0.92**	**0.023**	**0.026**	**0.018**	**0.093**	**0.015**	**0.021**	**0.0061 J**
Potassium	D	mg/l	**42**	**100 J**	**120**	**230**	**140**	**100**	**130**	**47**	**40**	**42**
Potassium	T	mg/l	**43**	**88 J**	**110**	**210**	**140**	**99**	**130**	**45**	**38**	**43**
Selenium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	**0.0048 J**	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Selenium	T	mg/l	< 0.010 U	**0.019**	< 0.010 U	**0.0049 J**	< 0.010 U	**0.0061 J**	**0.0063 J**	< 0.010 U	< 0.010 U	< 0.010 U
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	**0.063**	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Sodium	D	mg/l	**200**	**320 J**	**340**	**300**	**310**	**290**	**690**	**180**	**120**	**170**
Sodium	T	mg/l	**210**	**280 J**	**330**	**270**	**300**	**290**	**700**	**170**	**110**	**170**
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	**0.0030 J**	< 0.0050 U	**0.0026 J**	**0.0023 J**	**0.0039 J**	**0.047**	< 0.0050 U	< 0.0050 U	< 0.0050 U
Vanadium	T	mg/l	**0.029**	**0.16**	**0.031**	**0.0035 J**	**0.0044 J**	**0.0048 J**	**0.042**	**0.0020 J**	**0.0061**	**0.0028 J**
Zinc	D	mg/l	< 0.020 U	< 0.020 U	**0.019 J**	**0.018 J**	< 0.020 U	**0.028**	**0.014 J**	< 0.020 U	**0.03**	< 0.020 U
Zinc	T	mg/l	**0.17**	**4.5**	**0.84**	**0.12**	**0.22**	**0.072**	**0.19**	**0.46**	**0.1**	**0.29**

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
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U Compound was not detected. The associated value is the compound quantitation limit.
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Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-15	HPT-15	HPT-15	HPT-18	HPT-18	HPT-18	HPT-18	HPT-19	HPT-19	HPT-19
		Sample ID	VAP-HPT15(10-13)-110615	VAP-HPT15(15-18)-110615	VAP-HPT15(20-23)-110615	VAP-HPT18(12-14)-113015	VAP-HPT18(16-18)-113015	VAP-HPT18(19-22)-113015	VAP-HPT18(25-27)-113015	VAP-HPT19(12-14)-113015	VAP-HPT19(6-8)-113015	VAP-HPT19(9-11)-113015
		Sample Date	11/6/2015	11/6/2015	11/6/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015	11/30/2015
Analyte	T/D	Units										
VOCs												
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**3.1**	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	**1.7**	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	**1.7**	< 1.0 U	**1.7**
2-Butanone (MEK)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
4-Methyl-2-Pentanone	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	N	ug/l	< 9.6 UB	< 8.2 UB	**7.4**	**13**	< 10 U	< 10 U	**8.2**	< 5.0 U	< 5.0 U	< 5.0 U
Benzene	N	ug/l	**0.25 J**	**6.9**	**11**	**41**	**70**	**120**	**2.6**	**2.8**	< 0.50 U	**1**
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 UJ	< 2.0 U
Carbon Disulfide	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 4.0 U	< 4.0 U	< 4.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	< 1.0 U	**3.9**	**6.1**	< 2.0 U	**1.5 J**	**9**	< 1.0 U	**4.6**	< 1.0 U	**3.5**
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**16**	< 2.0 U	**6.4**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**6.6**	**21**	**77**	**3.1**	< 1.0 U	< 1.0 U	< 1.0 U
Dichloromethane	N	ug/l	< 5.0 U	< 5.0 U	**6.9**	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	< 0.50 U	< 0.50 U	**0.42 J**	< 1.0 U	**66**	< 1.0 U	**8.7**	< 0.50 U	< 0.50 U	< 0.50 U
Isopropylbenzene	N	ug/l	< 1.0 U	**3.8**	**2.2**	**23**	**11**	**43**	**2.5**	**1.9**	< 1.0 U	**0.78 J**
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylcyclohexane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**37**	**14**	**45**	**8.2**	< 1.0 U	< 1.0 U	< 1.0 U
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	**2.1**	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	**0.29 J**	**0.31 J**	**1.8**	< 1.0 U	**9.8**	< 1.0 U	**7.2**	< 0.50 U	< 0.50 U	< 0.50 U
Total Xylenes	N	ug/l	**0.56 J**	**0.93 J**	**2.4**	**2.3**	**740 D**	**1.9 J**	**77**	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 U	< 0.50 U	**0.45 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	**0.57**	< 0.50 U

Notes
All detections are shown in bold.

VOCs	Volatile Organic Compounds
T/D	Total/Dissolved
mg/L	milligram per liter
ug/L	microgram per liter
B	Associated compound was found in the sample and the blank.
J	Compound was identified; result is an estimated value.
R	The data was rejected due to matrix interference.
U	Compound was not detected. The associated value is the compound quantitation limit.
UB	Compound considered non-detect at the listed value due to associated blank contamination.
UJ	Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-21	HPT-21	HPT-21	HPT-22	HPT-22	HPT-22	HPT-23	HPT-23	HPT-24
		Sample ID	VAP-HPT21(12-14)-120115	VAP-HPT21(16-18)-120115	VAP-HPT21(8-10)-120115	VAP-HPT22(14-16)-120115	VAP-HPT22(18-21)-120115	VAP-HPT22(24-27)-120115	VAP-HPT23(15-18)-120115	VAP-HPT23(8-11)-120115	VAP-HPT24(15-18)-120215
		Sample Date	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/2/2015
Analyte	T/D	Units									
Anions											
Ammonia Nitrogen	N	mg/l	**73**	**75**	**60**	**19**	**78**	**110**	**140**	**2.1**	**73**
Metals											
Aluminum	D	mg/l	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Aluminum	T	mg/l	**0.65**	**0.42**	**0.29**	< 0.20 U	**1.3**	**0.64**	**18**	**6.5**	**0.37**
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	**0.011 J**	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	**0.016 J**	**0.0066 J**	< 0.020 U	**0.011 J**	< 0.020 U	< 0.020 U
Arsenic	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	**0.019**	< 0.010 U	**0.0085 J**	**0.0037 J**	< 0.010 U	< 0.010 U
Arsenic	T	mg/l	< 0.010 U	< 0.010 U	**0.0031 J**	**0.017**	**0.0089 J**	**0.0078 J**	**0.063**	< 0.010 U	< 0.010 U
Barium	D	mg/l	**0.64**	**0.89**	**0.51**	**0.051**	**0.27**	**0.75**	**0.45**	**0.028**	**0.48**
Barium	T	mg/l	**0.63**	**0.84**	**0.51**	**0.054**	**0.37**	**0.78**	**1.3**	**0.2**	**0.5**
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	**0.0024 J**	< 0.0040 U	< 0.0040 U
Cadmium	D	mg/l	**0.0012 J**	**0.0017 J**	**0.0015 J**	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
Cadmium	T	mg/l	**0.0021**	**0.0016 J**	**0.0016 J**	**0.0012 J**	< 0.0020 U	< 0.0020 U	**0.013**	< 0.0020 U	< 0.0020 U
Calcium	D	mg/l	**93**	**92**	**93**	**200**	**84**	**62**	**65**	**55**	**110**
Calcium	T	mg/l	**90**	**91**	**92**	**200**	**100**	**72**	**240**	**370**	**110**
Chromium	D	mg/l	**0.0038 J**	**0.0033 J**	**0.0026 J**	**0.0027 J**	**0.0034 J**	**0.0053 J**	**0.0072 J**	< 0.010 U	**0.0065 J**
Chromium	T	mg/l	**0.011**	**0.0083 J**	**0.01**	**0.0073 J**	**0.021**	**0.016**	**0.33**	**0.33**	**0.027**
Cobalt	D	mg/l	**0.0014 J**	**0.0014 J**	< 0.0050 U	< 0.0050 U	**0.0019 J**	**0.0045 J**	**0.0038 J**	< 0.0050 U	< 0.0050 U
Cobalt	T	mg/l	**0.0022 J**	**0.0011 J**	< 0.0050 U	< 0.0050 U	**0.0024 J**	**0.0045 J**	**0.025**	< 0.0050 U	< 0.0050 U
Copper	D	mg/l	**0.0031 J**	**0.0037 J**	**0.0034 J**	< 0.010 U	**0.0028 J**	**0.0026 J**	**0.0022 J**	< 0.010 U	< 0.010 U
Copper	T	mg/l	**0.014**	**0.01**	**0.0057 J**	**0.0090 J**	**0.014**	**0.016**	**0.41**	**0.0069 J**	**0.0066 J**
Iron	D	mg/l	**23**	**16**	**16**	**1.8 J**	**13 J**	**9.8 J**	**10**	< 0.20 UJ	**11**
Iron	T	mg/l	**25**	**17**	**18**	**2.2 J**	**29 J**	**25 J**	**120**	**47 J**	**12**
Lead	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 UJ	< 0.0050 UJ	< 0.0050 UJ	< 0.0050 U	< 0.0050 UJ	< 0.0050 U
Lead	T	mg/l	**0.063**	**0.059**	**0.0079**	**0.014 J**	**0.047 J**	**0.031 J**	**1.2**	**0.0043 J**	**0.01**
Magnesium	D	mg/l	**71**	**75**	**68**	**0.079 J**	**62 J**	**88 J**	**97**	**15 J**	**100**
Magnesium	T	mg/l	**68**	**70**	**66**	**0.17 J**	**64 J**	**85 J**	**110**	**28 J**	**100**
Manganese	D	mg/l	**0.17**	**0.16**	**0.29**	< 0.010 UJ	**0.23 J**	**0.079 J**	**0.39**	**0.041 J**	**0.5**
Manganese	T	mg/l	**0.22**	**0.19**	**0.34**	**0.047 J**	**0.93 J**	**0.49 J**	**6.5**	**17 J**	**0.53**
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	**0.00034**	< 0.00020 U	< 0.00020 U	**0.00013 J**	**0.00016 J**	**0.00012 J**	**0.00061**	< 0.00020 U	**0.000068 J**
Nickel	D	mg/l	**0.0060 J**	**0.0070 J**	**0.0039 J**	**0.016**	**0.0075 J**	**0.019**	**0.011**	< 0.010 U	< 0.010 U
Nickel	T	mg/l	**0.013**	**0.01**	**0.0058 J**	**0.023**	**0.016**	**0.032**	**0.12**	**0.027**	**0.0039 J**
Potassium	D	mg/l	**76**	**80**	**67**	**33**	**71**	**140**	**180 J**	**9.7**	**120 J**
Potassium	T	mg/l	**73**	**74**	**65**	**32**	**69**	**140**	**170 J**	**10**	**120 J**
Selenium	D	mg/l	< 0.010 U	< 0.010 U	**0.0047 J**	**0.013 J**	**0.0087 J**	R	< 0.010 UJ	R	< 0.010 UJ
Selenium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	R	**0.0069 J**	R	**0.011 J**	**0.0092 J**	< 0.010 UJ
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0029 J**	< 0.0050 U	< 0.0050 U
Sodium	D	mg/l	**200**	**220**	**160**	**190**	**230**	**340**	**560**	**43**	**530**
Sodium	T	mg/l	**190**	**200**	**150**	**190**	**230**	**330**	**540**	**44**	**520**
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0099**	**0.0030 J**	**0.0021 J**	**0.0075**	**0.0097**	**0.0020 J**
Vanadium	T	mg/l	**0.0025 J**	**0.0023 J**	**0.0023 J**	**0.012**	**0.014**	**0.0081**	**0.11**	**0.28**	**0.0030 J**
Zinc	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 UJ	< 0.020 UJ	< 0.020 UJ	< 0.020 U	< 0.020 UJ	< 0.020 U
Zinc	T	mg/l	**1.2**	**0.054**	**0.024**	**0.038 J**	**0.16 J**	**0.091 J**	**1.5**	**0.56 J**	**0.047**

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
R The data was rejected due to matrix interference.
U Compound was not detected. The associated value is the compound quantitation limit.
UB Compound considered non-detect at the listed value due to associated blank contamination.
UJ Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-21	HPT-21	HPT-21	HPT-22	HPT-22	HPT-22	HPT-23	HPT-23	HPT-24
		Sample ID	VAP-HPT21(12-14)-120115	VAP-HPT21(16-18)-120115	VAP-HPT21(8-10)-120115	VAP-HPT22(14-16)-120115	VAP-HPT22(18-21)-120115	VAP-HPT22(24-27)-120115	VAP-HPT23(15-18)-120115	VAP-HPT23(8-11)-120115	VAP-HPT24(15-18)-120215
		Sample Date	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/2/2015
Analyte	T/D	Units									
VOCs											
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**100**	**13**	< 1.0 U	< 1.0 U	**1.4**	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 25 U	< 50 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	**1.2**	**0.83 J**	**2.1**	**10**	< 10 U	**0.74 J**	< 1.0 U	**3.4**	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	**5.1**	**2**	**5.6**	< 5.0 U	< 10 U	**0.70 J**	< 1.0 U	< 1.0 U	< 1.0 U
2-Butanone (MEK)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 25 U	< 50 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
4-Methyl-2-Pentanone	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	**70**	< 50 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	**52**	< 50 U	**14**	**9.4**	**5.1**	**7.6**
Benzene	N	ug/l	**15**	**6.7**	**4.5**	**460**	**370**	**110**	**30**	**14**	**0.56**
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Disulfide	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	**14**	< 20 U	< 2.0 U	< 2.0 U	**1.5 J**	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	**30**	**5.5**	**29**	< 5.0 U	**6.2 J**	**1.8**	**1**	**2.3**	**0.99 J**
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	**4.7**	< 1.0 U
Chloroform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**81**	**15**	< 1.0 U	< 1.0 U	**9.3**	< 1.0 U
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	**1.4**	**1.3**	**1.5**	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	**1.1**	< 1.0 U
Dichloromethane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 25 U	< 50 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	**7.3**	< 0.50 U	< 0.50 U	**560**	**2800 D**	**18**	**81**	**76**	< 0.50 U
Isopropylbenzene	N	ug/l	**400**	**68**	**47**	**14**	**170**	**6.5**	**50**	**13**	**7.3**
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 25 U	< 50 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 25 U	< 50 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylcyclohexane	N	ug/l	**1.4**	**1.1**	**2.2**	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	**4.3**	< 1.0 U
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**2.8 J**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	**3.2**	< 0.50 U	< 0.50 U	**2700 D**	**4600 D**	**39**	**63**	**8.2**	**0.64**
Total Xylenes	N	ug/l	**62**	**2.2**	**0.75 J**	**3100 D**	**25000 D**	**140**	**660 D**	**88**	**1.1**
trans-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	**6**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	**7.3**	< 5.0 U	< 0.50 U	< 0.50 U	**0.71**	< 0.50 U
Vinyl chloride	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 2.5 U	< 5.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U

Notes
All detections are shown in bold.

VOCs	Volatile Organic Compounds
T/D	Total/Dissolved
mg/L	milligram per liter
ug/L	microgram per liter
B	Associated compound was found in the sample and the blank.
J	Compound was identified; result is an estimated value.
R	The data was rejected due to matrix interference.
U	Compound was not detected. The associated value is the compound quantitation limit.
UB	Compound considered non-detect at the listed value due to associated blank contamination.
UJ	Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-24	HPT-24	HPT-25	HPT-25	HPT-25	HPT-26	HPT-26	HPT-26
		Sample ID	VAP-HPT24(20-23)-120215	VAP-HPT24(6-8)-120215	VAP-HPT25(13-16)-120315	VAP-HPT25(18-21)-120315	VAP-HPT25(8-11)-120315	VAP-HPT26(10-13)-120315	VAP-HPT26(15-18)-120315	VAP-HPT26(6-9)-120315
		Sample Date	12/2/2015	12/2/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015
Analyte	T/D	Units								
Anions										
Ammonia Nitrogen	N	mg/l	**97**	**1.6**	**37**	**32**	**31**	**93**	**83**	**58**
Metals										
Aluminum	D	mg/l	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	**1.3**	< 0.20 U	**0.72**	< 0.20 U
Aluminum	T	mg/l	**2.6**	**4.5**	**19**	**8.2**	**38**	**4.9**	**25**	**0.55**
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	< 0.020 U	**0.012 J**	**0.012 J**	**0.039**	**0.0098 J**	**0.022**	< 0.020 U
Arsenic	D	mg/l	**0.0052 J**	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Arsenic	T	mg/l	**0.0048 J**	< 0.010 U	**0.024**	**0.0064 J**	**0.046**	**0.0089 J**	**0.061**	< 0.010 U
Barium	D	mg/l	**0.46**	**0.086**	**0.12**	**0.11**	**0.065**	**0.44**	**0.49**	**0.65**
Barium	T	mg/l	**0.75**	**0.13**	**0.68**	**0.33**	**1.5**	**0.56**	**1.8**	**0.66**
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	**0.0017 J**	**0.0032 J**	< 0.0040 U	**0.0061**	< 0.0040 U	**0.0039 J**	< 0.0040 U
Cadmium	D	mg/l	< 0.0020 U	< 0.0020 U	**0.0015 J**	**0.0017 J**	**0.0021**	**0.0017 J**	**0.002**	**0.0014 J**
Cadmium	T	mg/l	< 0.0020 U	< 0.0020 U	**0.0057**	**0.0035**	**0.02**	**0.0032**	**0.015**	**0.0018 J**
Calcium	D	mg/l	**120**	**120**	**140**	**200**	**130**	**120**	**120**	**29**
Calcium	T	mg/l	**180**	**160**	**390**	**270**	**200**	**130**	**160**	**32**
Chromium	D	mg/l	**0.0054 J**	< 0.010 U	< 0.010 U	**0.0027 J**	**0.01**	**0.0032 J**	**0.0089 J**	< 0.010 U
Chromium	T	mg/l	**0.031**	**0.0062 J**	**0.12**	**0.068**	**0.22**	**0.039**	**0.19**	**0.0061 J**
Cobalt	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.0017 J**	**0.0028 J**
Cobalt	T	mg/l	**0.0034 J**	< 0.0050 U	**0.016**	**0.0064**	**0.021**	**0.0048 J**	**0.029**	**0.0029 J**
Copper	D	mg/l	< 0.010 U	< 0.010 U	**0.0026 J**	< 0.010 U	**0.011**	**0.0026 J**	**0.022**	**0.0041 J**
Copper	T	mg/l	**0.017**	**0.0025 J**	**0.29**	**0.12**	**0.88**	**0.089**	**0.62**	**0.027**
Iron	D	mg/l	**21**	**0.27**	**1.8**	**0.34**	**7.5**	**21**	**26**	**25**
Iron	T	mg/l	**47**	**5.8**	**110**	**27**	**120**	**53**	**180**	**28**
Lead	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	**0.032**	< 0.0050 U	**0.085**	**0.0061**
Lead	T	mg/l	**0.056**	**0.0086**	**0.36**	**0.16**	**1.2**	**0.29**	**3.2**	**0.086**
Magnesium	D	mg/l	**120**	**66**	**100**	**86**	**110**	**85**	**91**	**51**
Magnesium	T	mg/l	**120**	**71**	**120**	**100**	**120**	**86**	**95**	**52**
Manganese	D	mg/l	**0.45**	**0.31**	**0.088**	**0.054**	**0.11**	**0.28**	**0.18**	**0.062**
Manganese	T	mg/l	**1.2**	**1.5**	**1.7**	**0.49**	**1.2**	**0.45**	**1.1**	**0.1**
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	**0.00058**	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	**0.000074 J**	< 0.00020 U	< 0.00020 U
Nickel	D	mg/l	**0.0055 J**	< 0.010 U	**0.0072 J**	**0.0088 J**	**0.013**	**0.0036 J**	**0.01**	**0.035**
Nickel	T	mg/l	**0.027**	< 0.010 U	**0.089**	**0.049**	**0.2**	**0.034**	**0.14**	**0.036**
Potassium	D	mg/l	**130 J**	**8.2 J**	**65**	**70**	**66**	**62**	**69**	**37**
Potassium	T	mg/l	**130 J**	**8.7 J**	**70**	**75**	**65**	**60**	**70**	**37**
Selenium	D	mg/l	**0.0056 J**	< 0.010 UJ	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Selenium	T	mg/l	< 0.010 UJ	< 0.010 UJ	**0.0069 J**	< 0.010 U	< 0.010 U	< 0.010 U	**0.0076 J**	< 0.010 U
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	< 0.0050 U	**0.0023 J**	**0.0058**	**0.015**	< 0.0050 U	**0.0086**	< 0.0050 U
Sodium	D	mg/l	**590**	**61**	**300**	**340**	**320**	**240**	**220**	**180**
Sodium	T	mg/l	**610**	**60**	**320**	**360**	**300**	**220**	**220**	**180**
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	< 0.0050 U	**0.0027 J**	**0.0057**	**0.0066**	< 0.0050 U	**0.0027 J**	< 0.0050 U
Vanadium	T	mg/l	**0.0089**	**0.0041 J**	**0.049**	**0.032**	**0.13**	**0.0086**	**0.057**	**0.0036 J**
Zinc	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	**0.055**	< 0.020 U	**0.2**	**0.11**
Zinc	T	mg/l	**0.2**	**0.035**	**0.89**	**0.43**	**1.9**	**0.39**	**5.2**	**0.33**

Notes
All detections are shown in bold.

VOCs Volatile Organic Compounds
T/D Total/Dissolved
mg/L milligram per liter
ug/L microgram per liter
B Associated compound was found in the sample and the blank.
J Compound was identified; result is an estimated value.
R The data was rejected due to matrix interference.
U Compound was not detected. The associated value is the compound quantitation limit.
UB Compound considered non-detect at the listed value due to associated blank contamination.
UJ Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 2. Vertical Aquifer Profiling Results
Lake Calumet Cluster Site, Chicago, IL

		Location	HPT-24	HPT-24	HPT-25	HPT-25	HPT-25	HPT-26	HPT-26	HPT-26
		Sample ID	VAP-HPT24(20-23)-120215	VAP-HPT24(6-8)-120215	VAP-HPT25(13-16)-120315	VAP-HPT25(18-21)-120315	VAP-HPT25(8-11)-120315	VAP-HPT26(10-13)-120315	VAP-HPT26(15-18)-120315	VAP-HPT26(6-9)-120315
		Sample Date	12/2/2015	12/2/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015
Analyte	T/D	Units								
VOCs										
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	**1.5**	< 1.0 U	**2.3**	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.60 J**	**0.85 J**	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2.3**	**2.7**	< 1.0 U
2-Butanone (MEK)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
4-Methyl-2-Pentanone	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	N	ug/l	**6.3**	< 5.0 U	**7.9**	< 5.0 U	< 5.0 U	**5.6**	< 5.0 U	< 5.0 U
Benzene	N	ug/l	**0.44 J**	**0.54**	< 0.50 U	< 0.50 U	< 0.50 U	**1.3**	**1.9**	< 0.50 U
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Disulfide	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	**0.46 J**	< 1.0 U	< 1.0 U	**9.5**	**6.6**	< 1.0 U
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.9**	< 1.0 U
Dichloromethane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	< 0.50 U	< 0.50 U	**0.49 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Isopropylbenzene	N	ug/l	**9.4**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4**	**3**	< 1.0 U
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylcyclohexane	N	ug/l	**2.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4.1**	< 1.0 U
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	**0.44 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**0.26 J**	**0.39 J**	< 0.50 U
Total Xylenes	N	ug/l	**1.1**	**1.4**	**0.74 J**	< 1.0 U	< 1.0 U	**0.87 J**	**0.76 J**	< 1.0 U
trans-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U

Notes
All detections are shown in bold.

VOCs	Volatile Organic Compounds
T/D	Total/Dissolved
mg/L	milligram per liter
ug/L	microgram per liter
B	Associated compound was found in the sample and the blank.
J	Compound was identified; result is an estimated value.
R	The data was rejected due to matrix interference.
U	Compound was not detected. The associated value is the compound quantitation limit.
UB	Compound considered non-detect at the listed value due to associated blank contamination.
UJ	Compound not detected above the reported sample quantitation limit. Reported limit is approximate.

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-01	MW-01	MW-01	MW-01	MW-01	MW-02	MW-02	MW-02	MW-02	MW-03	MW-03	MW-03	MW-03	MW-04	MW-04
	Sample ID		MW-1-GW-04282016	MW-01-GW-08082016	MW-01-GW-10032016	DUP-1-02162017	MW-01-GW-02162017	MW-2-GW-04282016	MW-02-GW-08082016	MW-02-GW-10032016	MW-02-GW-02152017	MW-3-GW-04272016	MW-03-GW-08082016	MW-03-GW-10042016	MW-03-GW-02152017	MW-4-GW-04272016	MW-04-GW-08082016
	Sample Date		4/28/2016	8/8/2016	10/3/2016	2/16/2017	2/16/2017	4/28/2016	8/8/2016	10/3/2016	2/15/2017	4/27/2016	8/8/2016	10/4/2016	2/15/2017	4/27/2016	8/8/2016
Analyte	T/D	Units															
Anions																	
Ammonia Nitrogen	T	mg/l	53	57	59	49	49	43	42 B	45	46	32	38 B	38	41	0.31	9.6
Nitrate/Nitrite	N	mg/l	0.057 J					< 0.10 U	< 0.10 U			< 0.10 U	< 0.10 U			< 0.10 U	< 0.10 U
Nitrate/Nitrite	T	mg/l		0.047 J	< 0.10 U	< 0.10 U	< 0.10 U			< 0.10 U	< 0.10 U			0.077 J	< 0.10 U		
Nitrate-N	T	mg/l	0.050 J	0.047 J	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	0.077 J	< 0.10 U	< 0.10 U	< 0.10 U
Nitrite	T	mg/l	< 0.020 UB	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.0055 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 UB	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 UB	< 0.020 U
Sulfate	T	mg/l	18	37	44	22	24	< 5.0 U	< 5.0 U	< 5.0 UB	< 5.0 UB	50	< 10 UB	< 5.0 UB	< 5.0 UB	640	250
Gases																	
Carbon Dioxide	N	mg/l	< 5.0	R	< 5.0 U	< 5.0 U	< 5.0 U	280	240 J	290	360	19	36 J	30	80	27	R
Methane	N	ug/l	17000	11000 J	12000	21000	20000	19000	20000 J	12000	16000	18000	24000 J	16000	22000	17000	17000 J
Nitrogen	N	mg/l	10	9.5 J	10	10	10	12	4.1 J	8.3	8.9	8.2	4.8 J	9.1	9.1	8.4	8.2 J
Oxygen	N	mg/l	4.2	4.1 J	3.9	3.4	3.4	2.3	1.4 J	1.6	1.6	2.5	1.3 J	3.4	3	1	0.99 J
GenChem																	
Total Suspended Solids	T	mg/l	8.5	26	10	24	29	77	24	57	63	6.5	8	8.5	11	7	< 5.0 U
Sulfide	N	mg/l	2.5	2.8	3.6	3.5 J	0.98 J	< 1.0 U	< 1.0 U	< 1.0 U	0.38 J	< 1.0 U	< 1.0 U	0.31 J	< 1.0 U	3.2	12
Metals																	
Aluminum	D	mg/l	0.077 J	0.24	0.4	0.22	0.21	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Aluminum	T	mg/l	0.20 J	0.38	0.42	0.33	0.34	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	0.11 J	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Antimony	D	mg/l	< 0.020 U	< 0.020 U	0.0079 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.0068 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Arsenic	D	mg/l	0.0055 J	< 0.010 U	0.0045 J	0.0048 J	0.0046 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0046 J	< 0.010 U	< 0.010 U	< 0.010 U	0.0050 J	0.0098 J
Arsenic	T	mg/l	< 0.010 U	0.0042 J	< 0.010 U	0.0066 J	0.0038 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0074 J	< 0.010 U	< 0.010 U	< 0.010 U	0.0066 J	0.0083 J
Barium	D	mg/l	0.78	0.65	0.81	0.47	0.45	0.32	0.28	0.35	0.36	0.61	0.88	0.96 J	0.95	0.063	0.069
Barium	T	mg/l	0.88	0.68	0.82	0.45	0.46	0.3	0.3	0.36	0.34	0.62	0.89	1	1.1	0.063	0.068
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Cadmium	D	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.0014 J	0.00096 J	0.0012 J	< 0.0020 U	< 0.0020 U	0.0014 J	0.0013 J	0.0011 J	0.0012 J	0.0011 J
Cadmium	T	mg/l	< 0.0020 U	0.00094 J	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.0012 J	< 0.0020 U	0.00096 J	< 0.0020 U	0.00097 J	0.0011 J	0.0011 J	0.0011 J	0.0012 J	0.0011 J
Calcium	D	mg/l	790	530	790	530	510	110 J	90	110	110	57	66	73	86	240	92
Calcium	T	mg/l	930	550	730	500	510	100 J	90	110	98	58	65	76	94	240	91
Chromium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0027 J	0.0029 J	0.0028 J	0.0032 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Chromium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0026 J	0.0029 J	0.0035 J	< 0.010 U	< 0.010 U	0.0024 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Cobalt	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Cobalt	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0012 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Copper	D	mg/l	0.0047 J	0.0033 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0023 J	< 0.010 U	< 0.010 U	0.0022 J	0.0023 J
Copper	T	mg/l	0.0070 J	0.0068 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0027 J	< 0.010 U	< 0.010 U	< 0.010 U	0.0033 J	< 0.010 U	< 0.010 U	< 0.010 U	0.0025 J
Iron	D	mg/l	0.21	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	40 J	31	39	< 36 UB	7.3	5.5	3.6	< 3.3 UB	0.69	< 0.20 U
Iron	T	mg/l	< 0.20 U	0.53	0.12 J	0.12 J	< 0.20 U	37 J	33	41	< 34 UB	7.4	6.4	4.6	< 4.0 UB	1.1	< 0.20 U
Lead	D	mg/l	0.0028 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 UJ	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0031 J	< 0.0050 U
Lead	T	mg/l	0.0041 J	0.01	< 0.0050 U	0.0025 J	0.0027 J	0.0034 J	< 0.0050 U	0.0028 J	< 0.0050 U	0.0024 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0026 J	< 0.0050 U
Magnesium	D	mg/l	< 0.10 U	0.071 J	0.051 J	0.043 J	< 0.10 U	57	45	51	54	79	75	82 J	84	97	33
Magnesium	T	mg/l	0.059 J	0.64	0.25	1.7	1.7	52	46	54	49	80	75	84	94	98	31
Manganese	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.41	0.22	0.28	0.23	0.31	0.17	0.13	0.091	2.2	0.4
Manganese	T	mg/l	0.0052 J	0.014	0.0045 J	< 0.010 U	< 0.010 U	0.39	0.23	0.3	0.21	0.33	0.18	0.14	0.1	2.2	0.42
Mercury	D	mg/l	0.00013 J	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Nickel	D	mg/l	0.016	0.017	0.021	0.016	0.016	0.0039 J	< 0.010 U	0.0037 J	0.0043 J	0.0063 J	0.0043 J	0.0049 J	0.0049 J	0.0037 J	< 0.010 U
Nickel	T	mg/l	0.017	0.018	0.023	0.015	0.016	0.0046 J	< 0.010 U	0.0037 J	0.0045 J	0.0068 J	0.0048 J	0.0051 J	0.0062 J	< 0.010 U	< 0.010 U
Potassium	D	mg/l	48	50	50	52	50	36	31	36	37	52	55	60 J	62	13	15
Potassium	T	mg/l	52	51	52	50	51	33	32	38	34	53	56	62	69	13	14
Selenium	D	mg/l	0.0051 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0052 J	< 0.010 U	0.0069 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Selenium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0053 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0055 J	< 0.010 U	< 0.010 U
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Sodium	D	mg/l	230	210	200	220	210	170	160	170	180	270	250	260 J	270	460	350
Sodium	T	mg/l	250	220	200	210	210	150	160	180	160	280	250	270 J	300	470	330
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0021 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0022 J	< 0.0050 U
Vanadium	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0020 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0026 J	< 0.0050 U
Zinc	D	mg/l	0.013 J	< 0.020 U	0.012 J	< 0.020 U	< 0.020 U	0.086 J	< 0.020 U	0.021	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Zinc	T	mg/l	0.032	0.021	0.015 J	0.010 J	0.012 J	0.093	0.0098 J	0.067	0.05	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Pesticides																	
4,4-DDD	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
4,4-DDE	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
4,4-DDT	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Aldrin	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Alpha-BHC	N	ug/l	< 0.041 U	< 0.037 UJ	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 UJ	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 UJ	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 UJ
Alpha-chlordane	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Beta-BHC	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Delta-BHC	N	ug/l	< 0.041 U	< 0.037 UJ	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 UJ	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 UJ	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 UJ
Dieldrin	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Endosulfan I	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Endosulfan II	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Endosulfan sulfate	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Endrin	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Endrin aldehyde	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Endrin ketone	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Gamma-BHC	N	ug/l	< 0.041 U	< 0.037 UJ	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 UJ	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 UJ	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 UJ
Heptachlor	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
Heptachlor epoxide	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-01	MW-01	MW-01	MW-01	MW-01	MW-02	MW-02	MW-02	MW-02	MW-03	MW-03	MW-03	MW-03	MW-04	MW-04
	Sample ID		MW-1-GW-04282016	MW-01-GW-08082016	MW-01-GW-10032016	DUP-1-02162017	MW-01-GW-02162017	MW-2-GW-04282016	MW-02-GW-08082016	MW-02-GW-10032016	MW-02-GW-02152017	MW-3-GW-04272016	MW-03-GW-08082016	MW-03-GW-10042016	MW-03-GW-02152017	MW-4-GW-04272016	MW-04-GW-08082016
	Sample Date		4/28/2016	8/8/2016	10/3/2016	2/16/2017	2/16/2017	4/28/2016	8/8/2016	10/3/2016	2/15/2017	4/27/2016	8/8/2016	10/4/2016	2/15/2017	4/27/2016	8/8/2016
Analyte	T/D	Units															
Methoxychlor	N	ug/l	< 0.082 U	< 0.074 U	< 0.074 U	< 0.075 U	< 0.073 U	< 0.083 U	< 0.073 U	< 0.075 U	< 0.077 U	< 0.080 U	< 0.077 U	< 0.074 U	< 0.077 U	< 0.081 U	< 0.073 U
Toxaphene	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	< 0.37 U
trans-chlordane	N	ug/l	< 0.041 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.037 U	< 0.042 U	< 0.037 U	< 0.037 U	< 0.038 U	< 0.040 U	< 0.038 U	< 0.037 U	< 0.038 U	< 0.041 U	< 0.037 U
PCBs																	
Aroclor 1016	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	< 0.37 U
Aroclor 1221	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	0.93	< 0.37 U
Aroclor 1232	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	1.8	< 0.37 U
Aroclor 1242	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	0.69
Aroclor 1248	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	< 0.37 U
Aroclor 1254	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	< 0.37 U
Aroclor 1260	N	ug/l	< 0.41 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.42 U	< 0.37 U	< 0.37 U	< 0.38 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	< 0.37 U
SVOCs																	
1,1-Biphenyl	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	0.70 J	< 3.7 U	0.53 J	< 3.8 U	38 D	20	26 J	15	< 4.2 U	< 3.7 U
2,2-Oxybis(1-Chloropropane)	N	ug/l	< 1.6 U	< 1.5 UJ	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.5 UJ	< 1.4 U	< 1.5 U	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
2,4,5-Trichlorophenol	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
2,4,6-Trichlorophenol	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
2,4-Dichlorophenol	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
2,4-Dimethylphenol	N	ug/l	4.4 J	4.0 J	5.9 J	5.5 J	6.7 J	< 8.3 UJ	< 7.3 U	< 7.2 U	< 7.5 U	280 D	68 D	74	17	13	25
2,4-Dinitrophenol	N	ug/l	< 16 U	< 15 U	< 15 U	< 15 U	< 15 U	< 17 U	< 15 U	< 14 U	< 15 U	< 81 U	< 15 U	< 150 U	< 15 U	< 17 U	< 15 U
2,4-Dinitrotoluene	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	< 0.77 U	< 0.83 U	< 0.73 U	< 0.72 U	< 0.75 U	< 4.0 U	< 0.76 U	< 7.4 U	< 0.75 U	< 0.84 U	< 0.73 U
2,6-Dinitrotoluene	N	ug/l	< 0.41 U	< 0.37 U	< 0.75 U	< 0.74 U	< 0.77 U	< 0.41 U	2.2	< 0.72 U	< 0.75 U	< 2.0 U	< 0.38 U	< 7.4 U	< 0.75 U	< 0.42 U	< 0.37 U
2-Chloronaphthalene	N	ug/l	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.5 U	0.55 J	< 1.5 U	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
2-Chlorophenol	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	5.8	< 3.7 U	2.7 J	4.9	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
2-Methyl-4,6-dinitrophenol	N	ug/l	< 16 U	< 15 U	< 15 U	< 15 U	< 15 U	< 17 U	< 15 U	< 14 U	< 15 U	< 81 U	< 15 U	< 150 U	< 15 U	< 17 U	< 15 U
2-Methylnaphthalene	N	ug/l	5.1	3.6	5	4.3	5.5	120 D	76	120	100 D	360 D	330 D	300	150 D	< 0.42 U	0.25 J
2-Methylphenol	N	ug/l	1.4 J	1.4 J	2.3	1.4 J	1.5	< 1.7 U	< 1.5 U	< 1.4 U	< 1.5 U	180 D	27	21	2.2	5	7.6
2-Nitroaniline	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
2-Nitrophenol	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
3,3-Dichlorobenzidine	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
3-Nitroaniline	N	ug/l	< 8.2 UJ	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
4-Bromophenyl phenyl ether	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
4-Chloro-3-Methylphenol	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
4-Chlorophenyl phenyl ether	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
4-Methylphenol	N	ug/l	16	6.3	10	6.3	6.6	6.8	6.7	2.7	< 1.5 U	280 D	22	12 J	1.6	9.5	8
4-Nitroaniline	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 UJ	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
4-Nitrophenol	N	ug/l	< 16 U	< 15 UJ	< 15 U	< 15 U	< 15 U	< 17 U	< 15 UJ	< 14 U	< 15 U	< 81 U	< 15 UJ	< 150 U	< 15 U	< 17 U	< 15 UJ
Acenaphthene	N	ug/l	7.4	4.8	6.9	8.1	8.1	1.1	< 0.73 U	0.98	1	29 D	18	21	20	< 0.84 U	< 0.73 U
Acenaphthylene	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	< 0.77 U	< 0.83 U	< 0.73 U	< 0.72 U	< 0.75 U	3.7 JD	2.7	3.4 J	1.9	< 0.84 U	< 0.73 U
Acetophenone	N	ug/l	1.3 J	1.1 J	2.2 J	1.4 J	2.0 J	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 U	1.9 J	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
Anthracene	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	0.26 J	< 0.83 U	< 0.73 U	< 0.72 U	< 0.75 U	12 D	12	9.1	7.6	< 0.84 U	< 0.73 U
Atrazine	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
Benzaldehyde	N	ug/l	< 16 UJ	< 29 U	< 30 UJ	< 30 UJ	< 31 UJ	R	< 29 U	< 29 UJ	< 30 U	< 81 UJ	< 30 U	< 290 UJ	< 30 U	< 17 UJ	< 29 U
Benzo(a)anthracene	N	ug/l	< 0.16 U	0.2	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.15 U	< 0.14 U	< 0.15 U	< 0.81 U	0.64	< 1.5 U	0.39	< 0.17 U	< 0.15 U
Benzo(a)pyrene	N	ug/l	< 0.16 U	0.21	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.15 U	< 0.14 U	< 0.15 U	< 0.81 U	< 0.15 U	< 1.5 U	0.23	< 0.17 UJ	< 0.15 UJ
Benzo(b)fluoranthene	N	ug/l	< 0.16 U	0.25	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.15 U	< 0.14 U	< 0.15 U	< 0.81 U	0.39	< 1.5 U	0.19	< 0.17 UJ	< 0.15 UJ
Benzo(g,h,i)perylene	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	< 0.77 U	< 0.83 U	< 0.73 U	< 0.72 U	< 0.75 U	< 4.0 U	< 0.76 U	< 7.4 U	< 0.75 U	< 0.84 UJ	< 0.73 UJ
Benzo(k)fluoranthene	N	ug/l	< 0.16 U	0.16	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.15 U	< 0.14 U	< 0.15 U	< 0.81 U	< 0.15 U	< 1.5 U	< 0.15 U	< 0.17 UJ	< 0.15 UJ
bis(2-Chloroethoxy)methane	N	ug/l	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.4 U	< 1.5 U	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
bis(2-Chloroethyl)ether	N	ug/l	< 1.6 U	< 1.5 UJ	< 1.5 U	< 1.5 U	< 1.5 U	0.97 J	< 1.5 UJ	1.2 J	1.4 J	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
bis(2-Ethylhexyl)phthalate	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	2.0 J	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
Butyl benzyl phthalate	N	ug/l	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.4 U	< 1.5 U	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
Caprolactam	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
Carbazole	N	ug/l	6.6	< 3.7 U	6.7 J	4.3 J	6.4 J	< 4.1 U	0.31 J	0.29 J	< 3.8 UJ	140 D	120 D	150	71 JD	< 4.2 U	< 3.7 U
Chrysene	N	ug/l	< 0.41 U	0.21 J	< 0.38 U	< 0.15 U	< 0.15 U	< 0.41 U	< 0.37 U	< 0.36 U	< 0.15 U	< 2.0 U	0.56	< 3.7 U	0.36	< 0.42 U	< 0.37 U
Dibenzo(a,h)anthracene	N	ug/l	< 0.25 U	< 0.22 U	< 0.23 U	< 0.22 U	< 0.23 U	< 0.25 U	< 0.22 U	< 0.22 U	< 0.23 U	< 1.2 U	< 0.23 U	< 2.2 U	< 0.23 U	< 0.25 UJ	< 0.22 UJ
Dibenzofuran	N	ug/l	1.1 J	0.64 J	0.91 J	1.3 J	1.4 J	< 1.7 U	0.26 J	0.29 J	< 1.5 U	56 D	34	42	27	< 1.7 U	< 1.5 U
Diethyl phthalate	N	ug/l	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	0.50 J	< 1.5 U	0.43 J	< 1.5 U	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
Dimethyl phthalate	N	ug/l	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.4 U	< 1.5 U	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
Di-n-butyl phthalate	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	0.75 J	< 3.8 U	1.9 J	0.94 J	0.79 J	< 3.8 U	< 20 U	< 3.8 U	< 37 U	< 3.8 U	< 4.2 U	< 3.7 U
Di-n-octyl phthalate	N	ug/l	< 8.2 U	< 7.3 U	< 7.5 U	< 7.4 U	< 7.7 U	< 8.3 U	< 7.3 U	< 7.2 U	< 7.5 U	< 40 U	< 7.6 U	< 74 U	< 7.5 U	< 8.4 U	< 7.3 U
Fluoranthene	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	< 0.77 U	< 0.83 U	< 0.73 U	< 0.72 U	< 0.75 U	7.1 D	7.8	6.2 J	5.8	< 0.84 U	< 0.73 U
Fluorene	N	ug/l	2.1	1.2	1.7	2.4	2.6	0.59 J	0.46 J	0.53 J	0.67 J	83 D	49	62	43	< 0.84 U	< 0.73 U
Hexachloro-1,3-butadiene	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 UJ	< 3.8 U	< 37 U	< 3.8 U	< 4.2 UJ	< 3.7 U
Hexachlorobenzene	N	ug/l	< 0.41 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	< 0.37 U	< 0.36 U	< 0.38 U	< 2.0 U	< 0.38 U	< 3.7 U	< 0.38 U	< 0.42 U	< 0.37 U
Hexachlorocyclopentadiene	N	ug/l	< 16 UJ	R	< 15 UJ	< 15 U	< 15 UJ	< 17 U	< 15 UJ	< 14 U	< 15 UJ	R	R	< 150 UJ	< 15 UJ	R	R
Hexachloroethane	N	ug/l	< 4.1 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	< 20 UJ	< 3.8 U	< 37 U	< 3.8 U	< 4.2 UJ	< 3.7 U
Indeno(1,2,3-cd)pyrene	N	ug/l	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.15 U	< 0.14 U	< 0.15 U	< 0.81 U	< 0.15 U	< 1.5 U	< 0.15 U	< 0.17 UJ	< 0.15 UJ
Isophorone	N	ug/l	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.4 U	< 1.5 U	< 8.1 U	< 1.5 U	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U
Naphthalene	N	ug/l	150 EJ	120 D	230	120 D	130 D	90 D	44	92	73 D	3600 D	2000 D	2200	870 D	2.4	1.5
Nitrobenzene	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	< 0.77 U	< 0.83 U	< 0.73 U	< 0.72 U	< 0.75 U	< 4.0 U	< 0.76 U	< 7.4 U	< 0.75 U	< 0.84 U	< 0.73 U
N-Nitrosodi-n-propylamine	N	ug/l	< 0.41 U	< 0.37 U	< 0.38 U	< 0.37 U	< 0.38 U	< 0.41 U	< 0.37 U	< 0.36 U	< 0.38 U	< 2.0 U	< 0.38 U	< 3.7 U	< 0.38 U	< 0.42 U	< 0.37 U
N-Nitrosodiphenylamine	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	< 0.77 U	4	< 0.73 U	6.3	7.1	< 4.0 U	< 0.76 U	< 7.4 U	< 0.75 U	< 0.84 U	< 0.73 U
p-Chloroaniline	N	ug/l	4.1 J	< 7.3 UJ	13	< 7.4 U	13	< 8.3 UJ	< 7.3 U	< 7.2 UJ	< 7.5 U	< 40 U	< 7.6 UJ	< 74 U	< 7.5 U	< 8.4 U	< 7.3 UJ
Pentachlorophenol	N	ug/l	< 16 U	< 15 U	< 15 U	< 15 UJ	< 15 U	< 17 U	< 15 U	< 14 U	< 15 U	< 81 U	< 15 UJ	< 150 UJ	< 15 U	< 17 U	< 15 UJ
Phenanthrene	N	ug/l	1.1	0.79	0.88	1.2	1.3	0.33 J	0.26 J	0.26 J	0.32 J	69 D	62	55	36	< 0.84 U	< 0.73 U
Phenol	N	ug/l	30	62 D	160	96 D	72 D	< 4.1 U	< 3.7 U	< 3.6 U	< 3.8 U	85 D	4.9 D	< 37 U	< 3.8 U	4.3	1.7 J
Pyrene	N	ug/l	< 0.82 U	< 0.73 U	< 0.75 U	< 0.74 U	< 0.77 U	< 0.83 U	< 0.73 U	< 0.72 U	< 0.75 U	4.7 D	6.3	4.5 J	4.1	< 0.84 U	< 0.73 U
TOC																	
Total Organic Carbon	N	mg/l	26	43	49	30	31	21	18	20	19	21	21	24	22	100	19
VOCs																	
1,1,1-Trichloroethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-01	MW-01	MW-01	MW-01	MW-01	MW-02	MW-02	MW-02	MW-02	MW-03	MW-03	MW-03	MW-03	MW-04	MW-04
	Sample ID		MW-1-GW-04282016	MW-01-GW-08082016	MW-01-GW-10032016	DUP-1-02162017	MW-01-GW-02162017	MW-2-GW-04282016	MW-02-GW-08082016	MW-02-GW-10032016	MW-02-GW-02152017	MW-3-GW-04272016	MW-03-GW-08082016	MW-03-GW-10042016	MW-03-GW-02152017	MW-4-GW-04272016	MW-04-GW-08082016
	Sample Date		4/28/2016	8/8/2016	10/3/2016	2/16/2017	2/16/2017	4/28/2016	8/8/2016	10/3/2016	2/15/2017	4/27/2016	8/8/2016	10/4/2016	2/15/2017	4/27/2016	8/8/2016
Analyte	T/D	Units															
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	11	22
1,1-Dichloroethene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 UJ	< 10 UJ	< 5.0 UJ	R	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 100 U	< 50 U	< 50 U	< 25 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	1.1 J	< 2.0 UJ	1.6 J	1.7 J	1.8	24	4.8	5.6	6.2	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	56	30
1,2-Dichloropropane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	1.3
1,3-Dichlorobenzene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	5.6	2.5	3.9	4.1	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	2.1 J	< 2.0 UJ	2.8 J	3.6 J	3.6	23	7	9.2	11	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
2-Butanone (MEK)	N	ug/l	48 J	85 J	110 J	45 J	46	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 100 UJ	< 50 U	< 50 U	< 25 U	< 5.0 UJ	< 5.0 U
4-Methyl-2-Pentanone	N	ug/l	57 J	200 J	230	99 J	99	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 100 UJ	< 50 U	< 50 U	< 25 U	< 5.0 UJ	14
Acetone	N	ug/l	94 J	110 J	110 J	59 J	55	< 5.0 U	9.1	9.0 J	6.3 J	< 100 U	< 50 U	< 50 U	< 25 UJ	19	15
Benzene	N	ug/l	25 J	33 J	36 J	30 J	30	14	10	15	14	250 D	160	110	57	490 D	510 D
Bromodichloromethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 2.0 UJ	< 4.0 UJ	< 2.0 UJ	R	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 20 U	< 20 U	< 10 U	< 2.0 U	< 2.0 U
Carbon Disulfide	N	ug/l	< 2.0 UJ	< 4.0 UJ	< 2.0 UJ	R	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 20 U	< 20 U	< 10 U	9.3	28
Carbon Tetrachloride	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 UJ	< 4.0 UJ	< 2.0 UJ	R	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 20 U	< 20 U	< 10 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	4.1 J	4.9 J	5.3 J	5.7 J	5.8	660 D	450 D	560	480	< 20 U	5.7 J	< 10 U	2.7 J	< 1.0 U	0.68 J
Chlorodibromomethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 UJ	4.8	2.6	5	4.5	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 20 U	< 10 U	< 10 U	< 10 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	3.4	6.3
cis-1,3-Dichloropropene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	1.1 J	< 2.0 UJ	1.5 J	1.5 J	1.6	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	0.97 J	1.3
Dichloromethane	N	ug/l	< 5.0 UJ	< 10 UJ	< 5.0 UJ	R	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 100 U	< 50 U	< 50 U	< 25 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	10 J	20 J	24 J	25 J	24	2.2	0.85	1.7	1.4	42 D	34	25	13	2.6	4.9
Isopropylbenzene	N	ug/l	7.3 J	11 J	11 J	13 J	14	5.3	3	4.2	4.9	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Methyl Acetate	N	ug/l	< 5.0 UJ	< 10 UJ	< 5.0 UJ	R	< 5.0 U	20	< 5.0 U	< 5.0 U	< 5.0 U	< 100 UJ	< 50 U	< 50 U	< 25 U	110 J	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 UJ	< 10 UJ	< 5.0 UJ	R	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 100 UJ	< 50 U	< 50 U	< 25 U	< 5.0 UJ	< 5.0 U
Methylcyclohexane	N	ug/l	< 1.0 UJ	< 2.0 UJ	1.4 J	1.9 J	1.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Methyl-tert-butylether	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	4.6 J	10 J	13 J	11 J	11	1.3	0.6	1.4	0.84	280 D	180	96	29	13	19
Total Xylenes	N	ug/l	12 J	21 J	27 J	24 J	23	6.2	2.1	4.4	3.9	290 D	220	150	63	3.5	4.3
trans-1,2-Dichloroethene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 UJ	< 2.0 UJ	< 1.0 UJ	R	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 10 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 UJ	< 1.0 UJ	< 0.50 UJ	R	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 5.0 U	< 5.0 U	< 2.5 U	0.72	1
Vinyl chloride	N	ug/l	< 0.50 UJ	< 1.0 UJ	0.33 J	0.45 J	0.48 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 5.0 U	< 5.0 U	< 2.5 U	5.2	5.6

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-04	MW-04	MW-05	MW-05	MW-05	MW-05	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-07	MW-07
	Sample ID		MW-04-GW-10042016	MW-04-GW-02152017	MW-5-GW-04272016	MW-05-GW-08082016	MW-05-GW-10042016	MW-05-GW-02152017	MW-6-GW-04292016	DUP-2 (04292016)	DUP-2(08092016)	MW-06-GW-08092016	MW-06-GW-10052016	DUP-2 (10052016)	MW-06-GW-02152017	MW-7-GW-04292016	MW-07-GW-08092016
	Sample Date		10/4/2016	2/15/2017	4/27/2016	8/8/2016	10/4/2016	2/15/2017	4/29/2016	4/29/2016	8/9/2016	8/9/2016	10/5/2016	10/5/2016	2/15/2017	4/29/2016	8/9/2016
Analyte	T/D	Units															
Anions																	
Ammonia Nitrogen	T	mg/l	9.8	7.7	57	54	50	50	530	770	490	490	790	780	530	670	630
Nitrate/Nitrite	N	mg/l			< 0.10 U	0.42			< 0.20 U	< 0.20 U						< 0.20 U	
Nitrate/Nitrite	T	mg/l	< 0.10 U	< 0.10 U			< 0.10 U	< 0.10 U			0.038 J	< 0.10 U	0.053 J	0.058 J	< 0.10 U		0.12
Nitrate-N	T	mg/l	< 0.10 U	< 0.10 U	< 0.10 U	0.42	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	0.038 J	< 0.10 U	0.053 J	0.058 J	< 0.10 U	< 0.10 U	0.12
Nitrite	T	mg/l	< 0.020 U	< 0.020 U	< 0.020 UB	< 0.020 U	< 0.020 U	< 0.020 U	0.014 J	< 0.020 U	< 0.040 U	0.035 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.10 U
Sulfate	T	mg/l	210	530	< 5.0 U	< 5.0 UB	< 5.0 UB	< 5.0 UB	21	63	< 20 UB	49	12	< 50 U	< 21 UB	240	< 50 UB
Gases																	
Carbon Dioxide	N	mg/l	< 5.0 U	200	230	270 J	270	320	25 D	24 D	24 J	24 J	38	40	17	47 D	47 J
Methane	N	ug/l	13000	17000	14000	21000 J	10000	19000	24000 D	27000 D	19000 J	19000 J	20000	21000	21000	31000 D	20000 J
Nitrogen	N	mg/l	8.6	10	7	4.6 J	8.1	6.9	18 D	21 D	5.1 J	7.3 J	10	10	11	23 D	4.6 J
Oxygen	N	mg/l	< 0.50 U	3.2	1.7	1.2 J	2.3	1.5	5.4 D	5.5 D	0.73 J	0.92 J	1.9	2.3	1.8	5.9 D	0.65 J
GenChem																	
Total Suspended Solids	T	mg/l	< 5.0 U	7.5	72	39	24	56	17	19	4.5 J	7	7	7.5	4.0 J	17	12
Sulfide	N	mg/l	7.8	1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	7.9 J	4.5 J	6.5	5.4	8	8.6	7.2	8.8	5.8
Metals																	
Aluminum	D	mg/l	< 0.20 U	0.064 J	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	0.38	0.27	0.21	0.16 J	< 1.0 U	< 1.0 U	0.14 J	1.4	1
Aluminum	T	mg/l	< 0.20 U	0.094 J	< 0.20 U	0.078 J	0.28	< 0.20 U	0.47	0.51	0.38	0.34	0.55 J	0.56 J	0.29	1.9	1.8
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.0070 J	< 0.10 U	< 0.10 U	< 0.020 U	0.011 J	0.0099 J
Antimony	T	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.10 U	< 0.10 U	< 0.020 U	0.015 J	0.017 J
Arsenic	D	mg/l	0.01	0.0094 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.024	0.021	0.025	0.027	0.028 J	0.022 J	0.02	0.04	0.052
Arsenic	T	mg/l	0.0084 J	0.0073 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.024	0.023	0.028	0.028	0.030 J	0.019 J	0.021	0.048	0.058
Barium	D	mg/l	0.061 J	0.036	0.91	0.89	0.97 J	0.83	0.31	0.29	0.3	0.33	0.35	0.37	0.26	0.47	0.51
Barium	T	mg/l	0.058	0.033	0.96	0.85	0.89	0.86	0.29	0.31	0.35	0.34	0.37	0.4	0.26	0.54	0.56
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.020 U	< 0.020 U	< 0.0040 U	0.00085 J	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.020 U	< 0.020 U	< 0.0040 U	0.0011 J	< 0.0040 U
Cadmium	D	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.0013 J	0.0014 J	< 0.0020 U	0.0016 J	0.0014 J	< 0.0020 UB	0.0013 J	< 0.010 U	< 0.010 U	< 0.0020 U	0.0057	0.0032
Cadmium	T	mg/l	< 0.0020 U	< 0.0020 U	0.00094 J	0.0012 J	0.0013 J	< 0.0020 U	0.0022	0.0022	0.0019 J	0.0019 J	< 0.010 U	< 0.010 U	0.0015 J	0.008	0.0076
Calcium	D	mg/l	110	180 J	82	68	76	73 J	27 J	26 J	30	34	11	11	15 J	10 J	11
Calcium	T	mg/l	100	160	88	63	70	76	30 J	28 J	35	34	11	12	15	11 J	11
Chromium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.14	0.13	0.089	0.097	0.18	0.19	0.1	0.43	0.45
Chromium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0032 J	< 0.010 U	0.13	0.14	0.1	0.1	0.19	0.2	0.11	0.48	0.48
Cobalt	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.036	0.034	0.026	0.03	0.038	0.046	0.025	0.041	0.045
Cobalt	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.032	0.036	0.031	0.03	0.036	0.046	0.025	0.044	0.043
Copper	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	0.0024 J	< 0.010 U	< 0.010 U	0.0090 J	0.0048 J	0.0060 J	0.0046 J	< 0.050 U	< 0.050 U	< 0.010 U	0.052	0.028
Copper	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	0.0035 J	R	< 0.010 U	0.012	0.013	0.012	0.011	0.016 J	0.022 J	0.0096 J	0.082	0.082
Iron	D	mg/l	< 0.20 U	2.7	26	21	18	19	2.1 J	2.0 J	1	0.96	2.1	2.4	0.59	4.1 J	3.8
Iron	T	mg/l	< 0.20 U	2.5	28	20	18	20	2.0 J	2.2 J	1.4	1.2	2.7	2.6	0.98	4.7 J	4.3
Lead	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.076 J	0.032 J	0.044 J	0.021 J	0.029	< 0.025 U	0.008	0.39 J	0.15
Lead	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.013	< 0.0050 U	0.11	0.13	0.1	0.096	0.22	0.24	0.11	0.68	0.7
Magnesium	D	mg/l	29 J	48 J	110	84	88 J	88 J	29	28	26	29	29	30	31 J	21	21
Magnesium	T	mg/l	27	43	110	80	80	90	28	29	29	29	28	30	31	22	20
Manganese	D	mg/l	0.33	1.3 J	0.093	0.057	0.053	0.051 J	0.0087 J	0.0084 J	0.0077 J	0.0093 J	< 0.050 U	< 0.050 U	0.0071 J	0.014	0.014
Manganese	T	mg/l	0.32	1.2	0.097	0.055	0.057	0.053	0.0099 J	0.0093 J	0.012	0.011	< 0.050 U	< 0.050 U	0.0079 J	0.017	0.017
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00063	< 0.00050 UB
Mercury	T	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.0002	0.0002	< 0.00020 UB	< 0.00026 UB	0.00023	0.00018 J	< 0.00020 U	0.001	0.0013
Nickel	D	mg/l	< 0.010 U	0.0056 J	0.0040 J	< 0.010 U	< 0.010 U	< 0.010 U	0.14	0.14	0.097	0.12	0.15	0.17	0.1	0.15	0.17
Nickel	T	mg/l	< 0.010 U	0.0066 J	0.0043 J	< 0.010 U	0.0044 J	0.0046 J	0.13	0.14	0.12	0.12	0.14	0.17	0.1	0.16	0.16
Potassium	D	mg/l	16 J	16 J	45	44	47 J	42 J	610	590	470	530	690	710	520 J	620	660
Potassium	T	mg/l	15	14	47	42	43	43	570	610	530	530	650	700	520	670	620
Selenium	D	mg/l	< 0.010 U	0 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 UJ	< 0.010 UB	< 0.010 UB	< 0.010 UB	0.0073 J	0.039 J	< 0.050 U	< 0.010 UJ	< 0.010 UB	0.012
Selenium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 UB	< 0.010 UB	0.0053 J	0.0069 J	< 0.050 U	< 0.050 U	0.0081 J	< 0.010 UB	0.011
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.025 U	< 0.025 U	< 0.0050 U	0.0016 J	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.025 U	< 0.025 U	< 0.0050 U	0.0026 J	0.0018 J
Sodium	D	mg/l	360 J	420 J	170	150	160 J	150 J	3300	3200	2400	2700	3300	3500	3500 J	3400	3500
Sodium	T	mg/l	340 J	380	170	150	150 J	150	3100	3300	2700	2800	3200	3500	3300	3600	3400
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.050 U	< 0.050 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.050 U	< 0.050 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.054	0.05	0.053	0.056	0.053	0.058	0.029	0.068	0.072
Vanadium	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.057	0.057	0.064	0.062	0.065	0.064	0.032	0.078	0.081
Zinc	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.12 J	0.060 J	0.061	0.039	0.056 J	0.051 J	0.023	0.67 J	0.41
Zinc	T	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	0.0099 J	0.044	0.0093 J	0.17	0.18	0.14	0.13	0.2	0.31	0.11	1.1	1.1
Pesticides																	
4,4-DDD	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
4,4-DDE	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
4,4-DDT	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Aldrin	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Alpha-BHC	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 UJ	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Alpha-chlordane	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Beta-BHC	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Delta-BHC	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 UJ	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Dieldrin	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Endosulfan I	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Endosulfan II	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Endosulfan sulfate	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Endrin	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Endrin aldehyde	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Endrin ketone	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Gamma-BHC	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 UJ	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Heptachlor	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
Heptachlor epoxide	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-04	MW-04	MW-05	MW-05	MW-05	MW-05	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-07	MW-07
	Sample ID		MW-04-GW-10042016	MW-04-GW-02152017	MW-5-GW-04272016	MW-05-GW-08082016	MW-05-GW-10042016	MW-05-GW-02152017	MW-6-GW-04292016	DUP-2 (04292016)	DUP-2(08092016)	MW-06-GW-08092016	MW-06-GW-10052016	DUP-2 (10052016)	MW-06-GW-02152017	MW-7-GW-04292016	MW-07-GW-08092016
	Sample Date		10/4/2016	2/15/2017	4/27/2016	8/8/2016	10/4/2016	2/15/2017	4/29/2016	4/29/2016	8/9/2016	8/9/2016	10/5/2016	10/5/2016	2/15/2017	4/29/2016	8/9/2016
Analyte	T/D	Units															
Methoxychlor	N	ug/l	< 0.074 U	< 0.074 U	< 0.079 U	< 0.074 U	< 0.074 U	< 0.073 U	< 0.087 U	< 0.087 U	< 0.38 U	< 0.073 U	< 0.073 U	< 0.073 UJ	< 0.074 U	R	< 0.39 U
Toxaphene	N	ug/l	< 0.37 U	< 0.37 U	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.43 U	< 0.43 U	< 1.9 U	< 0.36 U	< 0.36 U	< 0.37 UJ	< 0.37 U	R	< 1.9 U
trans-chlordane	N	ug/l	< 0.037 U	< 0.037 U	< 0.040 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.043 U	< 0.043 U	< 0.19 U	< 0.036 U	< 0.036 U	< 0.037 UJ	< 0.037 U	R	< 0.19 U
PCBs																	
Aroclor 1016	N	ug/l	< 0.37 U	< 0.37 U	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.43 U	< 0.43 U	< 0.38 U	< 0.36 U	< 0.36 U	< 0.37 U	< 0.37 U	< 0.41 UJ	< 0.37 U
Aroclor 1221	N	ug/l	< 0.37 U	< 0.37 U	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.43 U	< 0.43 U	< 0.38 U	< 0.36 U	< 0.36 U	< 0.37 U	< 0.37 U	< 0.41 UJ	< 0.37 U
Aroclor 1232	N	ug/l	< 0.37 U	< 0.37 U	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 U	4.9	4	< 0.38 U	< 0.36 U	< 0.36 U	< 0.37 U	< 0.37 U	< 0.41 UJ	< 0.37 U
Aroclor 1242	N	ug/l	< 0.37 U	< 0.37 U	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.43 U	< 0.43 U	3.4	3.5	5.3	4.9	2.6	< 0.41 UJ	8.1
Aroclor 1248	N	ug/l	< 0.37 U	< 0.37 U	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.43 U	< 0.43 U	< 0.38 U	< 0.36 U	< 0.36 U	< 0.37 U	< 0.37 U	< 0.41 UJ	< 0.37 U
Aroclor 1254	N	ug/l	< 0.37 U	< 0.37 U	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.43 U	< 0.43 U	< 0.38 U	< 0.36 U	< 0.36 U	< 0.37 U	< 0.37 U	1.7 J	< 0.37 U
Aroclor 1260	N	ug/l	< 0.37 U	< 0.37 UJ	< 0.40 U	< 0.37 U	< 0.37 U	< 0.37 UJ	< 0.43 U	< 0.43 U	< 0.38 U	< 0.36 U	< 0.36 U	< 0.37 U	< 0.37 UJ	< 0.41 UJ	< 0.37 U
SVOCs																	
1,1-Biphenyl	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	1.5 J	< 42 U	< 38 U
2,2-Oxybis(1-Chloropropane)	N	ug/l	< 7.3 UJ	< 1.5 U	< 1.6 U	0.32 J	< 1.5 UJ	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
2,4,5-Trichlorophenol	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 U	< 37 U	< 74 U	< 74 U	< 7.3 U	< 84 U	< 75 U
2,4,6-Trichlorophenol	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
2,4-Dichlorophenol	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 U	< 37 U	< 74 U	< 74 U	< 7.3 U	< 84 U	< 75 U
2,4-Dimethylphenol	N	ug/l	17 J	31	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	110 JD	110 JD	< 36 U	< 37 U	79	77	93 D	470 JD	370
2,4-Dinitrophenol	N	ug/l	< 73 U	< 15 U	< 16 U	< 15 U	< 15 U	< 15 U	< 170 U	< 170 U	< 73 U	< 73 U	< 150 UJ	< 150 UJ	< 15 U	< 170 U	< 150 U
2,4-Dinitrotoluene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	< 0.73 U	< 8.4 U	< 7.5 U
2,6-Dinitrotoluene	N	ug/l	< 3.6 U	< 0.73 U	< 0.40 U	< 0.38 U	< 0.74 U	< 0.75 U	< 4.3 U	< 4.2 U	< 1.8 U	< 1.8 U	< 7.4 U	< 7.4 U	< 0.73 U	< 4.2 U	< 3.8 U
2-Chloronaphthalene	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	0.22 J	0.18 J	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	3.1	< 17 U	< 15 U
2-Chlorophenol	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
2-Methyl-4,6-dinitrophenol	N	ug/l	< 73 U	< 15 U	< 16 U	< 15 U	< 15 U	< 15 U	< 170 U	< 170 U	< 73 U	< 73 U	< 150 UJ	< 150 UJ	< 15 U	< 170 U	< 150 U
2-Methylnaphthalene	N	ug/l	< 7.3 U	< 1.5 U	0.64	0.46 J	< 1.5 UB	0.40 J	< 4.3 U	6.6 D	2.8 J	2.8 J	2.2 J	2.1 J	2	9.4 D	6.0 J
2-Methylphenol	N	ug/l	5.5 J	7.7	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	20 D	19 D	17	17	21	17	18	78 D	75 J
2-Nitroaniline	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
2-Nitrophenol	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 U	< 37 U	< 74 U	< 74 U	< 7.3 U	< 84 U	< 75 U
3,3-Dichlorobenzidine	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
3-Nitroaniline	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 U	< 37 U	< 74 U	< 74 U	< 7.3 U	< 84 U	< 75 U
4-Bromophenyl phenyl ether	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
4-Chloro-3-Methylphenol	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 U	< 37 U	< 74 U	< 74 U	12	< 84 U	< 75 U
4-Chlorophenyl phenyl ether	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
4-Methylphenol	N	ug/l	2.1 J	11	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	96 D	90 D	120	130	160	150	5	280 D	290
4-Nitroaniline	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 UJ	< 37 UJ	< 74 U	< 74 U	< 7.3 U	< 84 U	< 75 U
4-Nitrophenol	N	ug/l	< 73 U	< 15 U	< 16 U	< 15 UJ	< 15 U	< 15 U	< 170 U	< 170 U	< 73 U	< 73 U	< 150 U	< 150 U	< 15 U	< 170 U	< 150 U
Acenaphthene	N	ug/l	< 3.6 U	< 0.73 U	0.31 J	0.29 J	< 0.74 U	0.32 J	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	0.50 J	< 8.4 U	< 7.5 U
Acenaphthylene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	< 0.73 U	< 8.4 U	< 7.5 U
Acetophenone	N	ug/l	< 18 U	3.0 J	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	6.3 J	7.2 J	6.6 J	< 3.7 U	< 42 U	< 38 UJ
Anthracene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	0.30 J	2.8 JD	3.3 J
Atrazine	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
Benzaldehyde	N	ug/l	< 150 UJ	< 29 UJ	< 16 UJ	< 30 U	< 29 UJ	< 30 UJ	R	R	< 150 UJ	< 150 UJ	< 300 UJ	< 300 UJ	20 J	R	< 300 UJ
Benzo(a)anthracene	N	ug/l	< 0.73 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U	< 1.7 U	< 1.7 U	< 0.73 U	< 0.73 U	< 1.5 U	< 1.5 U	< 0.15 U	< 1.7 U	< 1.5 U
Benzo(a)pyrene	N	ug/l	< 0.73 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U	< 1.7 U	< 1.7 U	< 0.73 UJ	< 0.73 UJ	< 1.5 UJ	< 1.5 UJ	R	< 1.7 U	3.2
Benzo(b)fluoranthene	N	ug/l	< 0.73 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U	< 1.7 U	< 1.7 U	< 0.73 UJ	< 0.73 UJ	< 1.5 UJ	< 1.5 UJ	R	< 1.7 U	3.6
Benzo(g,h,i)perylene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 UJ	< 3.7 UJ	< 7.4 UJ	< 7.4 UJ	R	< 8.4 U	< 7.5 U
Benzo(k)fluoranthene	N	ug/l	< 0.73 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U	< 1.7 U	< 1.7 U	< 0.73 UJ	< 0.73 UJ	< 1.5 UJ	< 1.5 UJ	R	< 1.7 U	< 1.5 U
bis(2-Chloroethoxy)methane	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
bis(2-Chloroethyl)ether	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	< 1.5 UJ	< 1.5 U	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
bis(2-Ethylhexyl)phthalate	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	1.3 J	< 7.4 U	< 7.5 U	85 JD	88 D	66	69	120	120	41	290 D	270
Butyl benzyl phthalate	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
Caprolactam	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 U	< 37 U	< 74 U	< 74 U	< 7.3 U	< 84 U	< 75 U
Carbazole	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 UJ	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 UJ	4.8 JD	5.7 J
Chrysene	N	ug/l	< 1.8 U	< 0.15 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.15 U	< 4.3 U	< 4.2 U	< 1.8 U	< 1.8 U	< 3.7 U	< 3.7 U	< 0.15 U	< 4.2 U	3.3 J
Dibenzo(a,h)anthracene	N	ug/l	< 1.1 U	< 0.22 U	< 0.24 U	< 0.23 U	< 0.22 U	< 0.23 U	< 2.6 U	< 2.5 U	< 1.1 UJ	< 1.1 UJ	< 2.2 UJ	< 2.2 UJ	R	< 2.5 U	< 2.3 U
Dibenzofuran	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
Diethyl phthalate	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
Dimethyl phthalate	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
Di-n-butyl phthalate	N	ug/l	< 18 U	< 3.7 U	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	1.4 J	< 42 U	< 38 U
Di-n-octyl phthalate	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 U	< 7.4 U	< 7.5 U	< 86 U	< 84 U	< 36 U	< 37 U	< 74 U	< 74 U	< 7.3 U	< 84 U	< 75 U
Fluoranthene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	0.43 J	8.8 D	12
Fluorene	N	ug/l	< 3.6 U	< 0.73 U	0.20 J	< 0.76 U	< 0.74 U	0.20 J	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	0.39 J	3.2 JD	< 7.5 U
Hexachloro-1,3-butadiene	N	ug/l	< 18 U	< 3.7 U	< 4.0 UJ	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
Hexachlorobenzene	N	ug/l	< 1.8 U	< 0.37 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 4.3 U	< 4.2 U	< 1.8 U	< 1.8 U	< 3.7 U	< 3.7 U	< 0.37 U	< 4.2 U	< 3.8 U
Hexachlorocyclopentadiene	N	ug/l	< 73 U	< 15 UJ	R	R	< 15 U	< 15 UJ	< 170 U	< 170 U	< 73 UJ	< 73 UJ	< 150 U	< 150 U	< 15 UJ	< 170 U	< 150 UJ
Hexachloroethane	N	ug/l	< 18 U	< 3.7 U	< 4.0 UJ	< 3.8 U	< 3.7 U	< 3.8 U	< 43 U	< 42 U	< 18 U	< 18 U	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
Indeno(1,2,3-cd)pyrene	N	ug/l	< 0.73 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U	< 1.7 U	< 1.7 U	< 0.73 UJ	< 0.73 UJ	< 1.5 UJ	< 1.5 UJ	R	< 1.7 U	2.0 J
Isophorone	N	ug/l	< 7.3 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U	< 17 U	< 17 U	< 7.3 U	< 7.3 U	< 15 U	< 15 U	< 1.5 U	< 17 U	< 15 U
Naphthalene	N	ug/l	< 3.6 U	< 0.73 U	0.64 J	0.33 J	< 0.74 U	< 0.75 U	16 D	16 D	18	17	14	13	23	48 D	38
Nitrobenzene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	< 0.73 U	< 8.4 U	< 7.5 U
N-Nitrosodi-n-propylamine	N	ug/l	< 1.8 U	< 0.37 U	< 0.40 U	< 0.38 U	< 0.37 U	< 0.38 U	< 4.3 U	< 4.2 U	< 1.8 UJ	< 1.8 UJ	< 3.7 U	< 3.7 U	< 0.37 U	< 4.2 U	< 3.8 UJ
N-Nitrosodiphenylamine	N	ug/l	< 3.6 U	< 0.73 U	1.2	1	< 0.74 U	0.98	< 8.6 U	< 8.4 U	1.9 J	< 3.7 U	3.2 J	< 7.4 U	< 0.73 U	< 8.4 U	< 7.5 U
p-Chloroaniline	N	ug/l	< 36 U	< 7.3 U	< 8.1 U	< 7.6 UJ	< 7.4 U	< 7.5 U	< 86 UJ	< 84 UJ	< 36 UJ	< 37 UJ	< 74 UJ	< 74 UJ	< 7.3 U	< 84 UJ	< 75 U
Pentachlorophenol	N	ug/l	< 73 U	< 15 U	< 16 U	< 15 U	< 15 U	< 15 U	< 170 U	< 170 U	< 73 UJ	< 73 UJ	< 150 U	< 150 U	< 15 U	< 170 U	< 150 UJ
Phenanthrene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 U	1.1 J	< 7.4 U	< 7.4 U	1	14 D	16
Phenol	N	ug/l	< 18 U	13	< 4.0 U	< 3.8 U	< 3.7 U	< 3.8 U	40 JD	38 JD	47	44	< 37 U	< 37 U	< 3.7 U	< 42 U	< 38 U
Pyrene	N	ug/l	< 3.6 U	< 0.73 U	< 0.81 U	< 0.76 U	< 0.74 U	< 0.75 U	< 8.6 U	< 8.4 U	< 3.6 U	< 3.7 U	< 7.4 U	< 7.4 U	0.59 J	8.0 JD	9.7
TOC																	
Total Organic Carbon	N	mg/l	26	15 J	18	19	20	18	360	350	370	280	530	520	310	480	650
VOCs																	
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-04	MW-04	MW-05	MW-05	MW-05	MW-05	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-06	MW-07	MW-07
	Sample ID		MW-04-GW-10042016	MW-04-GW-02152017	MW-5-GW-04272016	MW-05-GW-08082016	MW-05-GW-10042016	MW-05-GW-02152017	MW-6-GW-04292016	DUP-2 (04292016)	DUP-2(08092016)	MW-06-GW-08092016	MW-06-GW-10052016	DUP-2 (10052016)	MW-06-GW-02152017	MW-7-GW-04292016	MW-07-GW-08092016
	Sample Date		10/4/2016	2/15/2017	4/27/2016	8/8/2016	10/4/2016	2/15/2017	4/29/2016	4/29/2016	8/9/2016	8/9/2016	10/5/2016	10/5/2016	2/15/2017	4/29/2016	8/9/2016
Analyte	T/D	Units															
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	24	18	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.51 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.45 J	< 1.0 U	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 UJ	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	< 1.0 U	0.56 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	2.4	2.5	1.9	2.1	2.6	3.2	2.3	6.8	8.9
1,2-Dichloroethane	N	ug/l	< 1.0 U	58	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.4	1.4	1.5	1.6	1.3	1.3	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	1.7	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	4	2.1	1.9	1.4	13	13	13	13	14	18	13	17	15
2-Butanone (MEK)	N	ug/l	< 5.0 U	9.7	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	14 J	13 J	21	25	19	20	14	16 J	24
4-Methyl-2-Pentanone	N	ug/l	6.1	20	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	27 J	27 J	27	28	44	49	25	63 J	100
Acetone	N	ug/l	< 5.0 U	31	< 5.0 U	11	8	8.5	33	30	46 J	66 J	41	44	43	54	46
Benzene	N	ug/l	530	530	< 0.50 U	0.25 J	0.27 J	0.24 J	7	7	6	6	6.6	7.6	6.6	10	12
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U
Bromomethane	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 UJ	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 2.0 UJ
Carbon Disulfide	N	ug/l	33	2.2 J	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 UJ	< 2.0 U	< 2.0 U	0.71 J	1.1 J	< 2.0 U	< 2.0 U	1.6 J	< 2.0 U	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	0.82 J	2	4.6	4.2	4.3	2.9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.62 J	< 1.0 U	< 1.0 U
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 1.0 U	0.65 J	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	7.3	11	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	4.7	4.5	4.3	4.3	5.3	5.5	3.6	8.5	8.9
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	1.7	1.9	1.4	1.8	1.7	2.2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.73 J
Dichloromethane	N	ug/l	< 5.0 U	6.9	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	7.2	13	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	100	97	85	86	63	78	55	150	160
Isopropylbenzene	N	ug/l	< 1.0 U	0.92 J	36	40	35	36	6.7	6.6	5	5	4	5.1	4	9.6	10
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U
Methylcyclohexane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	0.55 J	< 1.0 U	0.55 J	1.1	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.76 J	1.3	1.4
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	21	28	< 0.50 U	< 0.50 U	1	< 0.50 U	160	150	160	160	160	200	130	410 D	420 D
Total Xylenes	N	ug/l	5.9	17	0.73 J	0.64 J	0.75 J	0.90 J	380 D	440 D	310 D	340 D	240	220	230	760 D	760 D
trans-1,2-Dichloroethene	N	ug/l	1	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 U	2.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride	N	ug/l	8.5	3.8	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	4.1	3.7	3.3	3.6	4.4	5.3	3.4	13	12

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-07	MW-07	MW-08	MW-08	MW-08	MW-08	MW-08	MW-09	MW-09	MW-09	MW-09	MW-10	MW-10	MW-10	MW-10
	Sample ID		MW-07-GW-10042016	MW-07-GW-02142017	MW-8-GW-04292016	MW-08-GW-08092016	MW-08-GW-10052016	DUP-2-02142017	MW-08-GW-02142017	MW-9-GW-04292016	MW-09-GW-08092016	MW-09-GW-10052016	MW-09-GW-02142017	MW-10-GW-04292016	MW-10-GW-08092016	MW10-GW-10052016	MW-10-GW-02142017
	Sample Date		10/4/2016	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017
Analyte	T/D	Units															
Anions																	
Ammonia Nitrogen	T	mg/l	710	740	41	41	39	37	36	79	74	78	73	4	14	19	1.7
Nitrate/Nitrite	N	mg/l			< 0.10 U					< 0.10 U				< 0.10 U			
Nitrate/Nitrite	T	mg/l	0.1	0.059 J		< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U		< 0.10 U	< 0.10 U	< 0.10 U		< 0.10 U	< 0.10 U	1.3
Nitrate-N	T	mg/l	0.1	0.059 J	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	1.3
Nitrite	T	mg/l	< 0.020 U	< 0.020 U	0.034	< 0.020 U	< 0.020 U	< 0.020 UJ	< 0.020 UJ	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 UJ	0.0032 J	< 0.020 U	< 0.020 U	0.016 J
Sulfate	T	mg/l	< 50 U	< 50 U	< 5.0 U	< 5.0 UB	< 5.0 UB	< 5.0 UB	< 5.0 UB	< 5.0 U	< 5.0 UB	< 5.0 UB	< 10 UB	420	75	22	530
Gases																	
Carbon Dioxide	N	mg/l	38	62	200	150 J	180	230	220	410	340 J	410	450	61	78 J	140	46
Methane	N	ug/l	19000	21000	14000	17000 J	12000	15000	15000	16000	20000 J	13000	13000	720	6000 J	5200	32
Nitrogen	N	mg/l	6.6	9.2	15	4.8 J	11	10	8.8	14	3.8 J	13	9.4	29	16 J	13	24
Oxygen	N	mg/l	1.1	1.3	5	1.5 J	3.5	2.9	2.5	3.4	1.2 J	3	1.8	4.7	2.1 J	3.1	3.8
GenChem																	
Total Suspended Solids	T	mg/l	7.5	13	23	23	19	26	24	52	52	28	45	49	17	42	30
Sulfide	N	mg/l	9.1	8	0.30 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.57 J	< 1.0 U	< 1.0 U
Metals																	
Aluminum	D	mg/l	1.4	0.77	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Aluminum	T	mg/l	1.7	1.3	< 0.20 U	< 0.20 U	0.062 J	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Antimony	D	mg/l	< 0.10 U	0.0085 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.10 U	0.013 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Arsenic	D	mg/l	0.038 J	0.032	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Arsenic	T	mg/l	0.05	0.039	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Barium	D	mg/l	0.60 J	0.46	0.63	0.71	0.52	0.65	0.65	0.83	0.81	0.77	0.83	0.12	0.47	0.45	0.093
Barium	T	mg/l	0.63	0.51	0.65	0.65	0.56	0.68 J	0.67 J	0.79	0.83	0.77	0.82 J	0.12	0.46	0.44	0.093 J
Beryllium	D	mg/l	< 0.020 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.020 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Cadmium	D	mg/l	0.0061 J	0.0027	0.0014 J	0.0013 J	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.0016 J	0.0013 J	< 0.0020 U	< 0.0020 U	0.0011 J	0.0010 J	0.0010 J	0.0011 J
Cadmium	T	mg/l	0.0078 J	0.0052	0.0014 J	0.0011 J	< 0.0020 U	0.0011 J	0.00094 J	0.0011 J	0.0012 J	< 0.0020 U	< 0.0020 U	0.0014 J	0.0011 J	0.0010 J	0.0014 J
Calcium	D	mg/l	11	9.1 J	110 J	120	92	120	120	130 J	120	120	120	210 J	130	130	180
Calcium	T	mg/l	11	9.6	110 J	110	97	120 J	120 J	130 J	120	120	120 J	210 J	120	120	180 J
Chromium	D	mg/l	0.48	0.33	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0033 J	0.0039 J	0.0044 J	0.0030 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Chromium	T	mg/l	0.5	0.36	< 0.010 U	< 0.010 U	0.0028 J	< 0.010 U	< 0.010 U	0.0028 J	0.0044 J	0.0050 J	0.0040 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Cobalt	D	mg/l	0.04	0.038	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0010 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Cobalt	T	mg/l	0.04	0.039	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0011 J
Copper	D	mg/l	R	0.026	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0052 J
Copper	T	mg/l	R	0.057	< 0.010 U	0.0023 J	< 0.010 U	< 0.010 U	0.0022 J	< 0.010 U	0.0023 J	< 0.010 U	< 0.010 U	0.0023 J	0.0033 J	0.0034 J	0.0088 J
Iron	D	mg/l	5.1	3.4	10 J	10	7.8	11	11	28 J	25	25	26	19 J	7.4	13	11
Iron	T	mg/l	5.2	3.9	10 J	10	8.4	11 J	11 J	27 J	25	24	26 J	20 J	7	13	12 J
Lead	D	mg/l	0.32	0.18	< 0.0050 UJ	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 UJ	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 UJ	< 0.0050 U	< 0.0050 U	< 0.0050 U
Lead	T	mg/l	0.71	0.5	< 0.0050 U	< 0.0050 U	0.0025 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0043 J	0.0035 J	0.0026 J	< 0.0050 U
Magnesium	D	mg/l	25 J	25 J	90	91	68	88	87	91	82	79	83	95	64	61	78
Magnesium	T	mg/l	25	25	91	82	72	92 J	91 J	88	83	79	81 J	94	60	58	77 J
Manganese	D	mg/l	< 0.050 U	0.013 J	0.16	0.18	0.13	0.18	0.18	0.19	0.17	0.15	0.16	1.1	0.61	0.61	1
Manganese	T	mg/l	0.017 J	0.015	0.16	0.17	0.14	0.19 J	0.18 J	0.19	0.17	0.15	0.16 J	1.1	0.56	0.58	0.99 J
Mercury	D	mg/l	0.00051	0.00036	< 0.00020 U	< 0.00020 UB	< 0.00020 U	< 0.00020 U	0.00012 J	< 0.00020 U	< 0.00020 UB	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 UB	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	0.0011	0.00086	< 0.00020 U	< 0.00020 UB	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Nickel	D	mg/l	0.16	0.13	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0044 J	< 0.010 U	< 0.010 U	0.0041 J	0.0062 J	< 0.010 U	0.0039 J	0.01
Nickel	T	mg/l	0.15	0.14	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0041 J	< 0.010 U	< 0.010 U	0.0046 J	0.0077 J	< 0.010 U	0.0038 J	0.011
Potassium	D	mg/l	700 J	570 J	37	41	35	35	35	81	75	74	78	92	58	54	35
Potassium	T	mg/l	680	570	38	37	37	37 J	36 J	79	76	74	77 J	94	56	52	34 J
Selenium	D	mg/l	< 0.050 U	0.0070 J	< 0.010 UB	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 UB	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Selenium	T	mg/l	< 0.050 U	0.0093 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 UB	< 0.010 U	< 0.010 U	< 0.010 U
Silver	D	mg/l	< 0.025 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.025 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Sodium	D	mg/l	3500 J	3600 J	230	250	200	240	240	210	200	190	200	310	170	150	65
Sodium	T	mg/l	3400 J	3500	240	230	210	250 J	240 J	200	200	190	200 J	320	160	140	64 J
Thallium	D	mg/l	< 0.050 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.050 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	0.076	0.048	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0019 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Vanadium	T	mg/l	0.081	0.055	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Zinc	D	mg/l	0.65	0.32	< 0.020 UJ	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 UJ	< 0.020 U	< 0.020 U	< 0.020 U	0.0092 J	< 0.020 U	< 0.020 U	0.073
Zinc	T	mg/l	1.1	0.67	< 0.020 U	< 0.020 U	< 0.020 U	0.017 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.026	0.032	0.038	0.074
Pesticides																	
4,4-DDD	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
4,4-DDE	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
4,4-DDT	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Aldrin	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Alpha-BHC	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Alpha-chlordane	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Beta-BHC	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Delta-BHC	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Dieldrin	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Endosulfan I	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Endosulfan II	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Endosulfan sulfate	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Endrin	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Endrin aldehyde	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Endrin ketone	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Gamma-BHC	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Heptachlor	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
Heptachlor epoxide	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-07	MW-07	MW-08	MW-08	MW-08	MW-08	MW-08	MW-09	MW-09	MW-09	MW-09	MW-10	MW-10	MW-10	MW-10
	Sample ID		MW-07-GW-10042016	MW-07-GW-02142017	MW-8-GW-04292016	MW-08-GW-08092016	MW-08-GW-10052016	DUP-2-02142017	MW-08-GW-02142017	MW-9-GW-04292016	MW-09-GW-08092016	MW-09-GW-10052016	MW-09-GW-02142017	MW-10-GW-04292016	MW-10-GW-08092016	MW10-GW-10052016	MW-10-GW-02142017
	Sample Date		10/4/2016	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017
Analyte	T/D	Units															
Methoxychlor	N	ug/l	< 0.37 UJ	< 0.37 UJ	< 0.083 U	< 0.075 U	< 0.073 U	< 0.073 U	< 0.073 U	< 0.086 U	< 0.076 U	< 0.074 U	< 0.073 U	< 0.083 U	< 0.074 U	< 0.074 U	< 0.073 U
Toxaphene	N	ug/l	< 1.9 UJ	< 1.8 UJ	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
trans-chlordane	N	ug/l	< 0.19 UJ	< 0.18 UJ	< 0.042 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.036 U	< 0.043 U	< 0.038 U	< 0.037 U	< 0.037 U	< 0.041 U	< 0.037 U	< 0.037 U	< 0.037 U
PCBs																	
Aroclor 1016	N	ug/l	< 0.37 U	< 0.37 UJ	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
Aroclor 1221	N	ug/l	< 0.37 U	< 0.37 UJ	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
Aroclor 1232	N	ug/l	< 0.37 U	< 0.37 UJ	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
Aroclor 1242	N	ug/l	3	3.1 J	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
Aroclor 1248	N	ug/l	3.5	< 0.37 UJ	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
Aroclor 1254	N	ug/l	2.4	1.6 J	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
Aroclor 1260	N	ug/l	< 0.37 U	< 0.37 UJ	< 0.42 U	< 0.37 U	< 0.36 U	< 0.37 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.37 U	< 0.37 U	< 0.37 U
SVOCs																	
1,1-Biphenyl	N	ug/l	< 37 U	2.2 J	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
2,2-Oxybis(1-Chloropropane)	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
2,4,5-Trichlorophenol	N	ug/l	< 73 U	< 7.3 U	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 UJ	< 7.3 UJ	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 UJ	< 8.1 U	< 7.3 U	< 7.4 U	< 7.3 UJ
2,4,6-Trichlorophenol	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 UJ	< 3.7 UJ	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 UJ	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 UJ
2,4-Dichlorophenol	N	ug/l	< 73 U	< 7.3 U	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 UJ	< 7.3 UJ	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 UJ	< 8.1 U	< 7.3 U	< 7.4 U	< 7.3 UJ
2,4-Dimethylphenol	N	ug/l	320	340 D	< 8.5 UJ	< 7.6 U	< 7.4 U	< 7.3 U	< 7.3 U	< 8.5 UJ	< 7.8 U	< 7.4 U	< 7.4 U	< 8.1 UJ	< 7.3 U	< 7.4 U	< 7.3 U
2,4-Dinitrophenol	N	ug/l	< 150 U	< 15 U	< 17 U	< 15 U	< 15 UJ	< 15 UJ	< 15 UJ	< 17 U	< 16 U	< 15 UJ	< 15 UJ	< 16 U	< 15 U	< 15 UJ	< 15 UJ
2,4-Dinitrotoluene	N	ug/l	< 7.3 U	< 0.73 U	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	< 0.74 U	< 0.74 U	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
2,6-Dinitrotoluene	N	ug/l	< 7.3 U	< 0.73 U	< 0.43 U	< 0.38 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.42 U	< 0.39 U	< 0.74 U	< 0.74 U	< 0.41 U	< 0.36 U	< 0.74 U	< 0.73 U
2-Chloronaphthalene	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
2-Chlorophenol	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 UJ	< 3.7 UJ	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 UJ	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 UJ
2-Methyl-4,6-dinitrophenol	N	ug/l	< 150 U	< 15 U	< 17 U	< 15 U	< 15 UJ	< 15 UJ	< 15 UJ	< 17 U	< 16 U	< 15 UJ	< 15 UJ	< 16 U	< 15 U	< 15 UJ	< 15 UJ
2-Methylnaphthalene	N	ug/l	5.6	5	0.14 J	< 1.5 U	0.10 J	< 1.5 U	< 1.5 U	2.6	2.5	2.3	2.5	0.19 J	< 1.5 U	< 1.5 U	< 1.5 U
2-Methylphenol	N	ug/l	88	49	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
2-Nitroaniline	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
2-Nitrophenol	N	ug/l	< 73 U	< 7.3 U	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 UJ	< 7.3 UJ	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 UJ	< 8.1 U	< 7.3 U	< 7.4 U	< 7.3 UJ
3,3-Dichlorobenzidine	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
3-Nitroaniline	N	ug/l	< 73 U	< 7.3 U	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 UJ	< 7.3 UJ	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 UJ	< 8.1 U	< 7.3 U	< 7.4 U	< 7.3 UJ
4-Bromophenyl phenyl ether	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
4-Chloro-3-Methylphenol	N	ug/l	< 73 U	41	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 U	< 7.3 U	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 U	< 8.1 U	< 7.3 U	< 7.4 U	< 7.3 U
4-Chlorophenyl phenyl ether	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
4-Methylphenol	N	ug/l	290	9.5	0.93 J	< 1.5 U	0.39 J	0.33 J	< 1.5 U	4.5	2.5	1.5	< 1.5 U	< 1.6 U	< 1.5 U	0.47 J	< 1.5 U
4-Nitroaniline	N	ug/l	< 73 U	< 7.3 U	< 8.5 U	< 7.6 UJ	< 7.4 U	< 7.3 U	< 7.3 U	< 8.5 U	< 7.8 UJ	< 7.4 U	< 7.4 U	< 8.1 U	< 7.3 UJ	< 7.4 U	< 7.3 U
4-Nitrophenol	N	ug/l	< 150 U	< 15 U	< 17 U	< 15 U	< 15 U	< 15 UJ	< 15 UJ	< 17 U	< 16 U	< 15 U	< 15 UJ	< 16 U	< 15 U	< 15 U	< 15 UJ
Acenaphthene	N	ug/l	< 7.3 U	4.3	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	0.97	1	0.88	1.1	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Acenaphthylene	N	ug/l	< 7.3 U	< 0.73 U	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	< 0.74 U	< 0.74 U	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Acetophenone	N	ug/l	17 J	< 3.6 U	< 4.3 U	< 3.8 UJ	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 UJ	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 UJ	< 3.7 U	< 3.6 U
Anthracene	N	ug/l	< 7.3 U	2.6	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	< 0.74 U	< 0.74 U	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Atrazine	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
Benzaldehyde	N	ug/l	< 290 UJ	40 J	R	< 30 UJ	< 30 UJ	< 29 U	< 29 U	< 17 UJ	< 31 UJ	< 30 UJ	< 30 U	R	< 29 UJ	< 29 UJ	< 29 U
Benzo(a)anthracene	N	ug/l	< 1.5 U	1.5	< 0.17 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U
Benzo(a)pyrene	N	ug/l	1.1 J	R	< 0.17 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U
Benzo(b)fluoranthene	N	ug/l	1.5	1.3 J	< 0.17 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U
Benzo(g,h,i)perylene	N	ug/l	< 7.3 U	R	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	< 0.74 U	< 0.74 U	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Benzo(k)fluoranthene	N	ug/l	0.62 J	0.56 J	< 0.17 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U
bis(2-Chloroethoxy)methane	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Ethylhexyl)phthalate	N	ug/l	210	170 D	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 U	< 7.3 U	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 U	< 8.1 U	< 7.3 U	< 7.4 U	1.3 J
Butyl benzyl phthalate	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
Caprolactam	N	ug/l	< 73 U	< 7.3 U	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 U	< 7.3 U	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 U	2.9 J	< 7.3 U	< 7.4 U	< 7.3 U
Carbazole	N	ug/l	4.2 J	R	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
Chrysene	N	ug/l	1.8 J	1.6	< 0.43 U	< 0.38 U	< 0.37 U	< 0.15 U	< 0.15 U	< 0.42 U	< 0.39 U	< 0.37 U	< 0.15 U	< 0.41 U	< 0.36 U	< 0.37 U	< 0.15 U
Dibenzo(a,h)anthracene	N	ug/l	< 2.2 U	R	< 0.26 U	< 0.23 U	< 0.22 U	< 0.22 U	< 0.22 U	< 0.25 U	< 0.23 U	< 0.22 U	< 0.22 U	< 0.24 U	< 0.22 U	< 0.22 U	< 0.22 U
Dibenzofuran	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	0.22 J	0.21 J	0.21 J	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
Diethyl phthalate	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	3	0.34 J	< 1.5 U	< 1.5 U
Dimethyl phthalate	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
Di-n-butyl phthalate	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 U
Di-n-octyl phthalate	N	ug/l	< 73 U	< 7.3 U	< 8.5 U	< 7.6 U	< 7.4 U	< 7.3 U	< 7.3 U	< 8.5 U	< 7.8 U	< 7.4 U	< 7.4 U	< 8.1 U	< 7.3 U	< 7.4 U	< 7.3 U
Fluoranthene	N	ug/l	5.4 J	< 0.73 U	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	< 0.74 U	< 0.74 U	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Fluorene	N	ug/l	< 7.3 U	3.1	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	0.46 J	0.49 J	0.39 J	0.42 J	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Hexachloro-1,3-butadiene	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 UJ	< 3.7 UJ	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 UJ	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 UJ
Hexachlorobenzene	N	ug/l	< 3.7 U	< 0.36 U	< 0.43 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.42 U	< 0.39 U	< 0.37 U	< 0.37 U	< 0.41 U	< 0.36 U	< 0.37 U	< 0.36 U
Hexachlorocyclopentadiene	N	ug/l	< 150 UJ	< 15 UJ	< 17 U	< 15 UJ	< 15 U	< 15 U	< 15 U	< 17 U	< 16 UJ	< 15 U	< 15 U	< 16 U	< 15 UJ	< 15 U	< 15 U
Hexachloroethane	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 UJ	< 3.7 UJ	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 UJ	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 UJ
Indeno(1,2,3-cd)pyrene	N	ug/l	< 1.5 U	R	< 0.17 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.17 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.16 U	< 0.15 U	< 0.15 U	< 0.15 U
Isophorone	N	ug/l	< 15 U	< 1.5 U	< 1.7 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.7 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.5 U	< 1.5 U	< 1.5 U
Naphthalene	N	ug/l	35	33	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	0.36 J	0.33 J	0.30 J	0.29 J	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Nitrobenzene	N	ug/l	< 7.3 U	< 0.73 U	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	< 0.74 U	< 0.74 U	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
N-Nitrosodi-n-propylamine	N	ug/l	< 3.7 U	< 0.36 U	< 0.43 U	< 0.38 UJ	< 0.37 U	< 0.37 U	< 0.37 U	< 0.42 U	< 0.39 UJ	< 0.37 U	< 0.37 U	< 0.41 U	< 0.36 UJ	< 0.37 U	< 0.36 U
N-Nitrosodiphenylamine	N	ug/l	5.4 J	< 0.73 U	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	0.57 J	< 0.74 U	0.72 J	0.96	0.56 J	< 0.73 U
p-Chloroaniline	N	ug/l	< 73 U	< 7.3 U	< 8.5 UJ	< 7.6 UJ	< 7.4 UJ	< 7.3 U	< 7.3 U	< 8.5 UJ	< 7.8 UJ	< 7.4 UJ	< 7.4 U	< 8.1 UJ	< 7.3 UJ	< 7.4 UJ	< 7.3 U
Pentachlorophenol	N	ug/l	< 150 UJ	< 15 U	< 17 U	< 15 UJ	< 15 U	< 15 UJ	< 15 UJ	< 17 U	< 16 UJ	< 15 U	< 15 UJ	< 16 U	< 15 UJ	< 15 U	< 15 UJ
Phenanthrene	N	ug/l	8.7	10	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	0.48 J	0.55 J	0.37 J	0.37 J	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
Phenol	N	ug/l	< 37 U	< 3.6 U	< 4.3 U	< 3.8 U	< 3.7 U	< 3.7 UJ	< 3.7 UJ	< 4.2 U	< 3.9 U	< 3.7 U	< 3.7 UJ	< 4.1 U	< 3.6 U	< 3.7 U	< 3.6 UJ
Pyrene	N	ug/l	5.3 J	10	< 0.85 U	< 0.76 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.85 U	< 0.78 U	< 0.74 U	< 0.74 U	< 0.81 U	< 0.73 U	< 0.74 U	< 0.73 U
TOC																	
Total Organic Carbon	N	mg/l	540	540	13	16 J	17	15	15	25	27	27 J	26	11	17	20	12
VOCs																	
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-07	MW-07	MW-08	MW-08	MW-08	MW-08	MW-08	MW-09	MW-09	MW-09	MW-09	MW-10	MW-10	MW-10	MW-10
	Sample ID		MW-07-GW-10042016	MW-07-GW-02142017	MW-8-GW-04292016	MW-08-GW-08092016	MW-08-GW-10052016	DUP-2-02142017	MW-08-GW-02142017	MW-9-GW-04292016	MW-09-GW-08092016	MW-09-GW-10052016	MW-09-GW-02142017	MW-10-GW-04292016	MW-10-GW-08092016	MW10-GW-10052016	MW-10-GW-02142017
	Sample Date		10/4/2016	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017	4/29/2016	8/9/2016	10/5/2016	2/14/2017
Analyte	T/D	Units															
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 UJ	< 5.0 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	N	ug/l	5	5.9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	N	ug/l	16	14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.7	1.5	1.2	1.4	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Butanone (MEK)	N	ug/l	< 5.0 U	8.1	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 UJ
4-Methyl-2-Pentanone	N	ug/l	69	45	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	N	ug/l	30	27	6.2	< 5.0 U	< 5.0 U	< 5.0 UJ	5.7 J	6.8	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 UJ
Benzene	N	ug/l	11	14	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	1.6	1.6	1.3	1.5	0.40 J	0.56	0.54	< 0.50 U
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 UJ	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 2.0 U	< 2.0 UJ	< 2.0 UJ	< 2.0 U
Carbon Disulfide	N	ug/l	< 2.0 U	< 2.0 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	N	ug/l	< 1.0 U	0.86 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	15	15	13	14	0.71 J	1.6	0.92 J	< 1.0 U
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	N	ug/l	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	N	ug/l	7.2	4.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	N	ug/l	< 1.0 U	0.55 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.5	1.8	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dichloromethane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	N	ug/l	130	180	0.33 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Isopropylbenzene	N	ug/l	8.6	11	< 1.0 U	< 1.0 U	0.40 J	< 1.0 U	< 1.0 U	3.5	3.4	2.5	3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 5.0 UJ	< 5.0 U
Methylcyclohexane	N	ug/l	0.94 J	0.98 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1.3	1.4	0.99 J	1.2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	N	ug/l	310	380	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.37 J	< 0.50 U	< 0.50 U	< 0.50 U	0.29 J	< 0.50 U	< 0.50 U	< 0.50 U
Total Xylenes	N	ug/l	560	910	1.2	< 1.0 U	0.82 J	< 1.0 U	< 1.0 U	0.93 J	< 1.0 U	0.46 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride	N	ug/l	11	8.4	< 0.50 UJ	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.42 J	< 0.50 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-11	MW-11	MW-11	MW-11	MW-12	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
	Sample ID		MW-11-GW-04282016	MW-11-GW-08092016	MW11-GW-10062016	MW-11-GW-02162017	MW-12-GW-04282016	MW-13-GW-04282016	DUP-1(04282016)	MW-13-GW-08092016	DUP-1(08092016)	MW-13-GW-10042016	DUP-1 (10042016)	MW-13-GW-02162017
	Sample Date		4/28/2016	8/9/2016	10/6/2016	2/16/2017	4/28/2016	4/28/2016	4/28/2016	8/9/2016	8/9/2016	10/4/2016	10/4/2016	2/16/2017
Analyte	T/D	Units												
Anions														
Ammonia Nitrogen	T	mg/l	67	60	59	59	440	61	52	56	66	79	80	57
Nitrate/Nitrite	N	mg/l	< 0.10 U				< 0.10 U	< 0.10 U	< 0.10 U					
Nitrate/Nitrite	T	mg/l		< 0.10 U	< 0.10 U	< 0.10 U				< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U
Nitrate-N	T	mg/l	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U
Nitrite	T	mg/l	< 0.020 UB	< 0.040 U	< 0.020 U	< 0.020 U	< 0.030 UB	< 0.020 UB	< 0.020 UB	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Sulfate	T	mg/l	6.5	5.9	< 6.7 UB	< 7.2 UB	1600	390	150	86	96	21	19	100
Gases														
Carbon Dioxide	N	mg/l	180	160 J	130	210	220	< 5.0	41	32 J	40 J	82	82	64
Methane	N	ug/l	15000	22000 J	10000	18000	16000	26000	22000	21000 J	22000 J	21000	20000	23000
Nitrogen	N	mg/l	7.2	5.9 J	5.1	9.5	7.2	5	7.8	6.7 J	3.1 J	10	10	7.9
Oxygen	N	mg/l	1.4	1.4 J	1.1	1.6	0.9	1.3	2.3	1.6 J	0.96 J	2.7	3	1.4
GenChem														
Total Suspended Solids	T	mg/l	85	73	68	100	140	14 J	26 J	28	22	24	25	20
Sulfide	N	mg/l	< 1.0 U	0.46 J	< 1.0 U	< 1.0 U	7.6	1.7	1.7	0.61 J	1.7	< 1.0 U	0.57 J	3.4
Metals														
Aluminum	D	mg/l	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	0.062 J	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	0.15 J	< 0.20 U
Aluminum	T	mg/l	0.12 J	< 0.20 U	0.095 J	< 0.20 U	0.15 J	< 0.20 U	0.066 J	0.096 J	0.12 J	0.11 J	0.11 J	< 0.20 U
Antimony	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.012 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	T	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.019 J	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Arsenic	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.026	0.0049 J	0.0085 J	0.0095 J	0.0062 J	< 0.010 U	0.0047 J	0.0070 J
Arsenic	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.03	0.0087 J	0.0075 J	0.0068 J	0.0096 J	0.0034 J	0.0047 J	0.0074 J
Barium	D	mg/l	1.2	0.82	0.76	0.79	0.088	0.24	0.25	0.2	0.22	0.23	0.25	0.25
Barium	T	mg/l	1.1	0.85	0.75	0.79	0.091	0.24	0.25	0.21	0.21	0.26	0.28	0.25
Beryllium	D	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Beryllium	T	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U	< 0.0040 U
Cadmium	D	mg/l	< 0.0020 U	0.0013 J	0.0011 J	0.0010 J	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.0011 J	< 0.0020 U	< 0.0020 U	< 0.0020 U
Cadmium	T	mg/l	< 0.0020 U	0.0011 J	0.0015 J	0.0011 J	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.00096 J	< 0.0020 U	< 0.0020 U	< 0.0020 U	< 0.0020 U
Calcium	D	mg/l	140	130	130	130	330	110	110	91	86	96	89	100
Calcium	T	mg/l	130	130	120	130	350	110	120	83	93	84	85	100
Chromium	D	mg/l	0.0083 J	0.0081 J	0.0075 J	0.0076 J	0.063	0.0035 J	0.0045 J	0.0032 J	0.0037 J	0.0038 J	0.0046 J	0.0027 J
Chromium	T	mg/l	0.0083 J	0.0088 J	0.0083 J	0.0073 J	0.067	0.0044 J	0.0045 J	0.0032 J	0.0039 J	0.0059 J	0.0052 J	0.0032 J
Cobalt	D	mg/l	0.0021 J	0.0013 J	0.0018 J	0.0017 J	0.12	0.0017 J	0.0025 J	0.0016 J	0.0018 J	0.0015 J	0.0017 J	0.0020 J
Cobalt	T	mg/l	0.0021 J	0.0014 J	0.0017 J	0.0018 J	0.12	0.0027 J	0.0026 J	0.0013 J	0.0015 J	0.0021 J	0.0023 J	0.0018 J
Copper	D	mg/l	0.0039 J	0.0028 J	0.0025 J	< 0.010 U	0.0035 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Copper	T	mg/l	0.0053 J	0.0026 J	0.0053 J	< 0.010 U	0.0049 J	0.0022 J	0.0025 J	< 0.010 U	0.0029 J	0.0029 J	0.0040 J	< 0.010 U
Iron	D	mg/l	36	28	28	28	41	6.7	7.5	3.3 J	5.9 J	6.4	7.6	4.3
Iron	T	mg/l	35	29	28	29	42	7.4	7.3	6.1	5.6	8.9	9.6	4.8
Lead	D	mg/l	0.0044 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0040 J	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Lead	T	mg/l	0.0073	0.0043 J	0.006	< 0.0050 U	0.011	< 0.0050 U	0.0029 J	0.0032 J	< 0.0050 U	0.0036 J	0.0077	< 0.0050 U
Magnesium	D	mg/l	120	110	120	120	290	43	46	39	45	46	50	48
Magnesium	T	mg/l	120	110	110	120	300	42	43	42	40	52	55	47
Manganese	D	mg/l	0.28	0.23	0.22	0.22	2.4	0.35	0.37	0.27	0.31	0.34	0.36	0.24
Manganese	T	mg/l	0.27	0.24	0.21	0.22	2.6	0.42	0.35	0.31	0.29	0.38	0.4	0.24
Mercury	D	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 UB	< 0.00020 UB	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	T	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Nickel	D	mg/l	0.019	0.016	0.016	0.019	0.25	0.011	0.011	0.0098 J	0.0092 J	0.0072 J	0.0063 J	0.014
Nickel	T	mg/l	0.017	0.017	0.016	0.02	0.27	0.011	0.011	0.0087 J	0.011	0.0079 J	0.0069 J	0.014
Potassium	D	mg/l	150	110	110	120	150	66	71	56	62	67	71	69
Potassium	T	mg/l	140	110	100	110	150	64	68	58	59	74	77	67
Selenium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	0.0068 J	0.019	< 0.010 U	0.0077 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 UB	0.0063 J
Selenium	T	mg/l	0.0054 J	< 0.010 U	< 0.010 U	< 0.010 U	0.023	< 0.010 U	0.0059 J	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Silver	D	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Silver	T	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Sodium	D	mg/l	380	350	330	390	1700	230	240	200	210	230	230	240
Sodium	T	mg/l	360	350	320	380	1600	230	240	200	210	220	230	230
Thallium	D	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Thallium	T	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	D	mg/l	0.0056	0.005	0.0048 J	0.0042 J	0.017	0.0033 J	0.0036 J	0.0040 J	0.0031 J	0.0036 J	0.0036 J	0.0025 J
Vanadium	T	mg/l	0.0053	0.0058	0.0055	0.005	0.017	0.0035 J	0.0039 J	0.0037 J	0.0045 J	0.0031 J	0.0035 J	0.0028 J
Zinc	D	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.12	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Zinc	T	mg/l	0.014 J	0.011 J	0.018 J	0.011 J	0.23	< 0.020 U	< 0.020 U	0.011 J	< 0.020 U	0.011 J	0.013 J	< 0.020 U
Pesticides														
4,4-DDD	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
4,4-DDE	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
4,4-DDT	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Aldrin	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Alpha-BHC	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Alpha-chlordane	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Beta-BHC	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Delta-BHC	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Dieldrin	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Endosulfan I	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Endosulfan II	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Endosulfan sulfate	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Endrin	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Endrin aldehyde	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Endrin ketone	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Gamma-BHC	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Heptachlor	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
Heptachlor epoxide	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-11	MW-11	MW-11	MW-11	MW-12	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
	Sample ID		MW-11-GW-04282016	MW-11-GW-08092016	MW11-GW-10062016	MW-11-GW-02162017	MW-12-GW-04282016	MW-13-GW-04282016	DUP-1(04282016)	MW-13-GW-08092016	DUP-1(08092016)	MW-13-GW-10042016	DUP-1 (10042016)	MW-13-GW-02162017
	Sample Date		4/28/2016	8/9/2016	10/6/2016	2/16/2017	4/28/2016	4/28/2016	4/28/2016	8/9/2016	8/9/2016	10/4/2016	10/4/2016	2/16/2017
Analyte	T/D	Units												
Methoxychlor	N	ug/l	< 0.080 U	< 0.073 U	< 0.073 U	< 0.074 U	< 0.40 U	< 0.082 U	< 0.40 UJ	< 0.37 U	< 0.37 U	< 0.073 U	< 0.074 U	< 0.076 U
Toxaphene	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 0.41 U	< 2.0 UJ	< 1.8 U	< 1.8 U	< 0.37 U	< 0.37 U	< 0.38 U
trans-chlordane	N	ug/l	< 0.040 U	< 0.037 U	< 0.036 U	< 0.037 U	< 0.20 U	< 0.041 U	< 0.20 UJ	< 0.18 U	< 0.18 U	< 0.037 U	< 0.037 U	< 0.038 U
PCBs														
Aroclor 1016	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 2.0 U	< 2.0 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1221	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 2.0 U	< 2.0 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1232	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 2.0 U	< 2.0 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1242	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 2.0 U	< 2.0 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1248	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 2.0 U	< 2.0 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1254	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 2.0 U	< 2.0 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1260	N	ug/l	< 0.40 U	< 0.37 U	< 0.36 U	< 0.37 U	< 2.0 U	< 2.0 U	< 2.0 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
SVOCs														
1,1-Biphenyl	N	ug/l	19 JD	2.6 J	< 18 U	0.99 J	< 410 UJ	3.1 JD	3.2 JD	< 19 U	< 18 U	1.8 J	< 18 U	2.0 J
2,2-Oxybis(1-Chloropropane)	N	ug/l	< 16 UJ	< 1.5 U	< 7.4 U	< 1.5 U	< 160 UJ	< 8.1 U	< 16 UJ	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	< 1.5 U
2,4,5-Trichlorophenol	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
2,4,6-Trichlorophenol	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	1.3 J
2,4-Dichlorophenol	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
2,4-Dimethylphenol	N	ug/l	16 JD	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	37 JD	40 JD	34 J	32 J	22 J	16 J	42
2,4-Dinitrophenol	N	ug/l	< 160 U	< 15 U	< 74 UJ	< 15 U	< 1600 UJ	< 81 U	< 160 U	< 74 U	< 74 U	< 73 UJ	< 73 UJ	< 15 U
2,4-Dinitrotoluene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	< 4.1 U	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	< 0.74 U
2,6-Dinitrotoluene	N	ug/l	< 4.0 U	< 0.37 U	< 3.7 U	< 0.73 U	< 41 UJ	< 2.0 U	< 4.0 U	< 1.9 U	< 1.8 U	< 3.7 U	< 3.6 U	< 0.74 U
2-Chloronaphthalene	N	ug/l	< 16 U	< 1.5 U	< 7.4 U	< 1.5 U	< 160 UJ	< 8.1 U	< 16 U	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	< 1.5 U
2-Chlorophenol	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 U
2-Methyl-4,6-dinitrophenol	N	ug/l	< 160 U	< 15 U	< 74 UJ	< 15 U	< 1600 UJ	< 81 U	< 160 U	< 74 U	< 74 U	< 73 UJ	< 73 UJ	< 15 U
2-Methylnaphthalene	N	ug/l	2.9 JD	2.3	1.8 J	3.7	46 JD	22 D	20 D	11	11	10	8.1	11
2-Methylphenol	N	ug/l	< 16 U	< 1.5 U	< 7.4 U	< 1.5 U	7600 JD	< 8.1 U	14 JD	< 7.4 U	< 7.4 U	5.4 J	4.8 J	< 1.5 U
2-Nitroaniline	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 U
2-Nitrophenol	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
3,3-Dichlorobenzidine	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 U
3-Nitroaniline	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 UJ	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
4-Bromophenyl phenyl ether	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 UJ
4-Chloro-3-Methylphenol	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
4-Chlorophenyl phenyl ether	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 U
4-Methylphenol	N	ug/l	180 D	< 1.5 U	2.2 J	3.2	510000 JD	210 D	280 D	54	54	29	22	40
4-Nitroaniline	N	ug/l	< 80 U	< 7.4 UJ	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
4-Nitrophenol	N	ug/l	< 160 U	< 15 U	< 74 U	< 15 U	< 1600 UJ	< 81 U	< 160 U	< 74 UJ	< 74 UJ	< 73 U	< 73 U	< 15 U
Acenaphthene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	0.23 J	< 81 UJ	1.4 JD	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	0.86
Acenaphthylene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	4.5 D	5.1 JD	2.7 J	2.5 J	2.2 J	1.7 J	2.3
Acetophenone	N	ug/l	< 40 U	0.57 J	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	26	20	32
Anthracene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	< 4.1 U	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	0.29 J
Atrazine	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 U
Benzaldehyde	N	ug/l	< 160 UJ	< 30 UJ	< 150 UJ	< 29 UJ	< 1600 UJ	< 81 UJ	< 160 UJ	< 150 UJ	< 150 UJ	< 150 UJ	< 150 UJ	< 30 UJ
Benzo(a)anthracene	N	ug/l	< 1.6 U	< 0.15 U	< 0.74 U	< 0.15 U	< 16 UJ	< 0.81 U	< 1.6 U	< 0.74 U	< 0.74 U	< 0.73 U	0.43 J	< 0.15 U
Benzo(a)pyrene	N	ug/l	< 1.6 U	< 0.15 U	< 0.74 U	< 0.15 U	< 16 UJ	< 0.81 U	< 1.6 U	< 0.74 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.15 UJ
Benzo(b)fluoranthene	N	ug/l	< 1.6 U	< 0.15 U	< 0.74 U	< 0.15 U	< 16 UJ	< 0.81 U	< 1.6 U	< 0.74 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.15 UJ
Benzo(g,h,i)perylene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	< 4.1 U	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	< 0.74 UJ
Benzo(k)fluoranthene	N	ug/l	< 1.6 U	< 0.15 U	< 0.74 U	< 0.15 U	< 16 UJ	< 0.81 U	< 1.6 U	< 0.74 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.15 UJ
bis(2-Chloroethoxy)methane	N	ug/l	3.8 JD	< 1.5 U	< 7.4 U	< 1.5 U	< 160 UJ	< 8.1 U	< 16 U	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	< 1.5 U
bis(2-Chloroethyl)ether	N	ug/l	< 16 U	< 1.5 U	< 7.4 U	< 1.5 U	< 160 UJ	< 8.1 U	< 16 U	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	< 1.5 U
bis(2-Ethylhexyl)phthalate	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	2.9 J
Butyl benzyl phthalate	N	ug/l	< 16 U	< 1.5 U	< 7.4 U	< 1.5 U	< 160 UJ	< 8.1 U	< 16 U	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	1.3 J
Caprolactam	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
Carbazole	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 UJ	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 UJ
Chrysene	N	ug/l	< 4.0 U	< 0.37 U	< 1.8 U	< 0.15 U	< 41 UJ	< 2.0 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	0.35 J	< 0.15 U
Dibenzo(a,h)anthracene	N	ug/l	< 2.4 U	< 0.22 U	< 1.1 U	< 0.22 U	< 24 UJ	< 1.2 U	< 2.4 U	< 1.1 U	< 1.1 U	< 1.1 U	< 1.1 U	< 0.22 UJ
Dibenzofuran	N	ug/l	< 16 U	< 1.5 U	< 7.4 U	< 1.5 U	< 160 UJ	< 8.1 U	< 16 U	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	< 1.5 U
Diethyl phthalate	N	ug/l	< 16 U	0.62 J	< 7.4 U	0.64 J	< 160 UJ	33 D	31 D	9	8.8	12	8.9	11
Dimethyl phthalate	N	ug/l	< 16 U	< 1.5 U	< 7.4 U	< 1.5 U	< 160 UJ	< 8.1 U	< 16 U	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	< 1.5 U
Di-n-butyl phthalate	N	ug/l	< 40 U	< 3.7 U	< 18 U	0.69 J	< 410 UJ	5.5 JD	< 40 U	4.4 J	4.2 J	3.8 J	3.4 J	3.9
Di-n-octyl phthalate	N	ug/l	< 80 U	< 7.4 U	< 37 U	< 7.3 U	< 810 UJ	< 41 U	< 81 U	< 37 U	< 37 U	< 37 U	< 36 U	< 7.4 U
Fluoranthene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	< 4.1 U	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	< 0.74 U
Fluorene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	1.8 JD	< 8.1 U	< 3.7 U	< 3.7 U	1.0 J	< 3.6 U	1.2
Hexachloro-1,3-butadiene	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 U
Hexachlorobenzene	N	ug/l	< 4.0 U	< 0.37 U	< 1.8 U	< 0.37 U	< 41 UJ	< 2.0 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 0.37 U
Hexachlorocyclopentadiene	N	ug/l	< 160 UJ	< 15 UJ	< 74 U	< 15 U	< 1600 UJ	< 81 UJ	< 160 UJ	< 74 U	< 74 U	< 73 U	< 73 U	< 15 U
Hexachloroethane	N	ug/l	< 40 U	< 3.7 U	< 18 U	< 3.7 U	< 410 UJ	< 20 U	< 40 U	< 19 U	< 18 U	< 18 U	< 18 U	< 3.7 U
Indeno(1,2,3-cd)pyrene	N	ug/l	< 1.6 U	< 0.15 U	< 0.74 U	< 0.15 U	< 16 UJ	< 0.81 U	< 1.6 U	< 0.74 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.15 UJ
Isophorone	N	ug/l	< 16 U	< 1.5 U	< 7.4 U	< 1.5 U	19000 JD	5.4 JD	< 16 U	< 7.4 U	< 7.4 U	< 7.3 U	< 7.3 U	< 1.5 U
Naphthalene	N	ug/l	8.0 D	2.4	1.9 J	2.4	160 JD	250 D	260 D	170	160	140	110	190 D
Nitrobenzene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	< 4.1 U	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	< 0.74 U
N-Nitrosodi-n-propylamine	N	ug/l	< 4.0 U	< 0.37 UJ	< 1.8 U	< 0.37 U	< 41 UJ	< 2.0 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 0.37 U
N-Nitrosodiphenylamine	N	ug/l	< 8.0 U	1.3	1.6 J	1.7	< 81 UJ	14 D	15 D	10	< 3.7 U	11	7.7	11
p-Chloroaniline	N	ug/l	< 80 UJ	< 7.4 UJ	8.2 J	< 7.3 U	< 810 UJ	< 41 UJ	< 81 UJ	< 37 U	< 37 U	< 37 UJ	< 36 UJ	< 7.4 U
Pentachlorophenol	N	ug/l	< 160 U	< 15 UJ	< 74 U	< 15 UJ	1200 JD	65 JD	< 160 U	< 74 U	< 74 U	< 73 U	< 73 U	< 15 UJ
Phenanthrene	N	ug/l	< 8.0 U	0.36 J	< 3.7 U	< 0.73 U	< 81 UJ	< 4.1 U	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	0.86
Phenol	N	ug/l	31 JD	0.97 J	< 18 U	0.73 J	4000 JD	56 JD	84 JD	37	36	17 J	12 J	39
Pyrene	N	ug/l	< 8.0 U	< 0.74 U	< 3.7 U	< 0.73 U	< 81 UJ	< 4.1 U	< 8.1 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	< 0.74 U
TOC														
Total Organic Carbon	N	mg/l	91	67	65	36	2200	67	56	54	56	53	54	61
VOCs														
1,1,1-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U

Table 3. Groundwater Monitoring Results
Lake Calumet Cluster Site

	Location		MW-11	MW-11	MW-11	MW-11	MW-12	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
	Sample ID		MW-11-GW-04282016	MW-11-GW-08092016	MW11-GW-10062016	MW-11-GW-02162017	MW-12-GW-04282016	MW-13-GW-04282016	DUP-1(04282016)	MW-13-GW-08092016	DUP-1(08092016)	MW-13-GW-10042016	DUP-1 (10042016)	MW-13-GW-02162017
	Sample Date		4/28/2016	8/9/2016	10/6/2016	2/16/2017	4/28/2016	4/28/2016	4/28/2016	8/9/2016	8/9/2016	10/4/2016	10/4/2016	2/16/2017
Analyte	T/D	Units												
1,1,2,2-Tetrachloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,1,2-trichloro-1,2,2-trifluoroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,1,2-Trichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,1-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	3300 D	52 JD	23 JD	19	16	< 10 U	7.6 J	< 10 U
1,1-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	10 D	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,2,4-Trichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,2-Dibromo-3-chloropropane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 50 U	< 50 U	< 50 U	< 25 U	< 25 UJ	< 50 UJ	< 50 UJ	< 50 U
1,2-Dibromoethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,2-Dichlorobenzene	N	ug/l	< 1.0 U	1.1	0.85 J	1.2	< 10 U	17 D	14 D	12	13	12	12	18
1,2-Dichloroethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,2-Dichloropropane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,3-Dichlorobenzene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
1,4-Dichlorobenzene	N	ug/l	2	3.2	2.6	3.8	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
2-Butanone (MEK)	N	ug/l	5.1	< 5.0 U	< 5.0 U	< 5.0 U	2700 D	60 D	< 50 U	< 25 U	< 25 U	< 50 U	< 50 U	< 50 U
4-Methyl-2-Pentanone	N	ug/l	5	< 5.0 U	< 5.0 U	< 5.0 U	24000 D	< 50 U	< 50 U	< 25 U	< 25 U	< 50 U	< 50 U	< 50 U
Acetone	N	ug/l	15	16	< 5.0 UJ	< 5.0 UJ	4800 D	85 D	< 50 U	30	38	< 50 U	< 50 U	< 50 U
Benzene	N	ug/l	88	100	84	81	160 D	630 D	450 D	430	390	400	370	410
Bromodichloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Bromoform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Bromomethane	N	ug/l	< 2.0 UJ	< 2.0 UJ	< 2.0 UJ	< 2.0 U	< 20 UJ	< 20 UJ	< 20 UJ	< 10 UJ	< 10 U	< 20 UJ	< 20 UJ	< 20 U
Carbon Disulfide	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 20 U	< 20 U	< 10 U	< 10 U	< 20 U	< 20 U	< 20 U
Carbon Tetrachloride	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
CFC-11	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
CFC-12	N	ug/l	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 20 U	< 20 U	< 10 U	< 10 U	< 20 U	< 20 U	< 20 UJ
Chlorobenzene	N	ug/l	6.9	10	8.9	11	< 10 U	< 10 U	< 10 U	3.1 J	3.2 J	< 10 U	< 10 U	< 10 U
Chlorodibromomethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Chloroethane	N	ug/l	5.3	4.6	4.4	< 1.0 U	26 D	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 UJ
Chloroform	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 2.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 20 U
Chloromethane	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
cis-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	1100 D	54 JD	26 JD	43	34	19	16	37
cis-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Cyclohexane	N	ug/l	75	100	78	110	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Dichloromethane	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	6300 D	< 50 U	< 50 U	< 25 U	< 25 U	< 50 U	< 50 U	< 50 U
Ethylbenzene	N	ug/l	100	11	2.6	3.1	3400 D	2500 D	1900 D	1200 D	1400 D	1000	970	1300
Isopropylbenzene	N	ug/l	36	51	39	61	43 D	97 D	110 D	75	100	110	110	100
Methyl Acetate	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 50 U	< 50 U	< 50 U	< 25 U	< 25 U	< 50 U	< 50 U	< 50 U
Methyl N-Butyl Ketone (2-Hexanone)	N	ug/l	< 5.0 U	< 5.0 U	< 5.0 UJ	< 5.0 U	< 50 U	< 50 U	< 50 U	< 25 U	< 25 U	< 50 U	< 50 U	< 50 U
Methylcyclohexane	N	ug/l	72	110	76	170	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Methyl-tert-butylether	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Styrene (Monomer)	N	ug/l	4.3	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 UJ	120 JD	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Tetrachloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	680 D	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Toluene	N	ug/l	150	8.2	1.5	0.82	11000 D	8100 JD	4600 JD	2800 D	2700 D	1700	1500	2600
Total Xylenes	N	ug/l	620 D	67	15	17	19000 D	17000 D	14000 D	8200 D	9800 D	7000	7100	8400
trans-1,2-Dichloroethene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	23 D	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
trans-1,3-Dichloropropene	N	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U	< 10 U	< 5.0 U	< 5.0 U	< 10 U	< 10 U	< 10 U
Trichloroethene	N	ug/l	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	720 D	< 5.0 U	< 5.0 U	3.7	3.6	< 5.0 U	< 5.0 U	< 5.0 U
Vinyl chloride	N	ug/l	0.7	< 0.50 U	< 0.50 U	< 0.50 U	420 D	15 D	7.1 D	10	11	< 5.0 U	< 5.0 U	11

Notes

T/D/N	Total/Dissolved/Not Applicable
mg/L	milligrams per liter
ug/L	micrograms per liter
PCBs	polychlorinated biphenyls
SVOCs	semi-volatile organic compounds
TOC	total organic carbon
VOCs	volatile organic compounds
J	compound was identified; result is an estimated value
R	data was rejected during data validation
U	compound was not detected; result is the compound quantitation limit
UB	compound considered non-detect at listed value due to blank contamination
UJ	compound not detected above quantitation limit; reported limit is approximate
D	concentration based on diluted sample

Table 4. Seep Investigation Data
Lake Calumet Cluster Site, Chicago, IL

Location Sample ID Sample Date		B-1 B-1-011917 1/19/2017	B-2 B-2-011917 1/19/2017	C-1 C-1-011917 1/19/2017
Analyte	Units			
Ammonia Nitrogen	mg/l	**0.29**	**3.3**	**2.3**
Metals				
Aluminum	mg/l	**0.2**	< 0.20 U	**0.14 J**
Antimony	mg/l	< 0.020 U	< 0.020 U	< 0.020 U
Arsenic	mg/l	< 0.010 U	< 0.010 U	< 0.010 U
Barium	mg/l	**0.028**	**0.068**	**0.066**
Beryllium	mg/l	< 0.0040 U	< 0.0040 U	< 0.0040 U
Cadmium	mg/l	< 0.0020 U	< 0.0020 U	< 0.0020 U
Calcium	mg/l	**67**	**130**	**170**
Chromium	mg/l	< 0.010 U	< 0.010 U	< 0.010 U
Cobalt	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U
Copper	mg/l	**0.0023 J**	< 0.010 U	0.0023 J
Iron	mg/l	**0.69**	**1.1**	**1.5**
Lead	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U
Magnesium	mg/l	**24**	**32**	**54**
Manganese	mg/l	**0.13**	**0.33**	**0.35**
Mercury	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U
Nickel	mg/l	< 0.010 U	< 0.010 U	< 0.010 U
Potassium	mg/l	**7.1**	**12**	**9**
Selenium	mg/l	< 0.010 U	< 0.010 U	< 0.010 U
Silver	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U
Sodium	mg/l	**38**	**190**	**52**
Thallium	mg/l	< 0.010 U	< 0.010 U	< 0.010 U
Vanadium	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U
Zinc	mg/l	< 0.020 U	< 0.020 U	< 0.020 U
VOCs				
1,1,1-Trichloroethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
1,2-Dibromoethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
2-Butanone (MEK)	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
4-Methyl-2-Pentanone	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	ug/l	< 5.0 U	< 5.0 U	**6.2**
Benzene	ug/l	< 0.50 U	**0.5**	< 0.50 U
Bromodichloromethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	ug/l	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Disulfide	ug/l	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	ug/l	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	ug/l	< 1.0 U	**3.1**	< 1.0 U
Chlorodibromomethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	ug/l	< 2.0 U	< 2.0 U	< 2.0 U
Chloromethane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Cyclohexane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Dichloromethane	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	ug/l	< 0.50 U	< 0.50 U	< 0.50 U
Isopropylbenzene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Methyl Acetate	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
Methyl N-Butyl Ketone (2-Hexanone)	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
Methylcyclohexane	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Methyl-tert-butylether	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Styrene (Monomer)	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	ug/l	< 0.50 U	< 0.50 U	< 0.50 U
Total Xylenes	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	ug/l	< 0.50 U	< 0.50 U	< 0.50 U
Vinyl chloride	ug/l	< 0.50 U	< 0.50 U	< 0.50 U

Notes:

mg/L	milligram per liter
ug/L	microgram per liter
VOCs	volatile organic compounds
J	Estimated concentration.
U	Constituent not detected above reporting limit.

Table 5. MW-12 LNAPL Sampling Results
Lake Calumet Cluster Site, Chicago, IL

			Location Sample ID Sample Date	MW-12 MW-12-FP-03022017 3/2/2017
Analyte	CAS	T/D	Units	
PCBs				
Aroclor 1016	12674-11-2	N	mg/kg	< 25 UJ
Aroclor 1221	11104-28-2	N	mg/kg	< 25 UJ
Aroclor 1232	11141-16-5	N	mg/kg	< 25 UJ
Aroclor 1242	53469-21-9	N	mg/kg	< 25 UJ
Aroclor 1248	12672-29-6	N	mg/kg	**180 J**
Aroclor 1254	11097-69-1	N	mg/kg	**180 J**
Aroclor 1260	11096-82-5	N	mg/kg	< 25 UJ
SVOCs				
1,1-Biphenyl	92-52-4	N	mg/kg	< 500 U
2,2-Oxybis(1-Chloropropane)	108-60-1	N	mg/kg	< 500 U
2,4,5-Trichlorophenol	95-95-4	N	mg/kg	< 990 U
2,4,6-Trichlorophenol	88-06-2	N	mg/kg	< 990 U
2,4-Dichlorophenol	120-83-2	N	mg/kg	< 990 U
2,4-Dimethylphenol	105-67-9	N	mg/kg	< 990 U
2,4-Dinitrophenol	51-28-5	N	mg/kg	< 2000 U
2,4-Dinitrotoluene	121-14-2	N	mg/kg	< 500 U
2,6-Dinitrotoluene	606-20-2	N	mg/kg	< 500 U
2-Chloronaphthalene	91-58-7	N	mg/kg	< 500 U
2-Chlorophenol	95-57-8	N	mg/kg	< 500 U
2-Methyl-4,6-dinitrophenol	534-52-1	N	mg/kg	< 990 U
2-Methylnaphthalene	91-57-6	N	mg/kg	**1100 J**
2-Methylphenol	95-48-7	N	mg/kg	< 500 U
2-Nitroaniline	88-74-4	N	mg/kg	< 500 U
2-Nitrophenol	88-75-5	N	mg/kg	< 990 U
3,3-Dichlorobenzidine	91-94-1	N	mg/kg	< 500 U
3-Nitroaniline	99-09-2	N	mg/kg	< 990 UJ
4-Bromophenyl phenyl ether	101-55-3	N	mg/kg	< 500 U
4-Chloro-3-Methylphenol	59-50-7	N	mg/kg	< 990 U
4-Chlorophenyl phenyl ether	7005-72-3	N	mg/kg	< 500 U
4-Methylphenol	106-44-5	N	mg/kg	**3800**
4-Nitroaniline	100-01-6	N	mg/kg	< 990 UJ
4-Nitrophenol	100-02-7	N	mg/kg	< 2000 U
Acenaphthene	83-32-9	N	mg/kg	**120 J**
Acenaphthylene	208-96-8	N	mg/kg	< 99 U
Acetophenone	98-86-2	N	mg/kg	**1100 J**
Anthracene	120-12-7	N	mg/kg	< 99 U
Atrazine	1912-24-9	N	mg/kg	< 990 U
Benzaldehyde	100-52-7	N	mg/kg	< 2000 UJ
Benzo(a)anthracene	56-55-3	N	mg/kg	**61 J**
Benzo(a)pyrene	50-32-8	N	mg/kg	< 99 U
Benzo(b)fluoranthene	205-99-2	N	mg/kg	**60 J**
Benzo(g,h,i)perylene	191-24-2	N	mg/kg	< 99 U
Benzo(k)fluoranthene	207-08-9	N	mg/kg	< 99 U
bis(2-Chloroethoxy)methane	111-91-1	N	mg/kg	< 500 U
bis(2-Chloroethyl)ether	111-44-4	N	mg/kg	< 500 U
bis(2-Ethylhexyl)phthalate	117-81-7	N	mg/kg	**420 J**
Butyl benzyl phthalate	85-68-7	N	mg/kg	< 500 U
Caprolactam	105-60-2	N	mg/kg	< 990 U
Carbazole	86-74-8	N	mg/kg	< 500 U
Chrysene	218-01-9	N	mg/kg	**71 J**
Dibenzo(a,h)anthracene	53-70-3	N	mg/kg	< 99 U

Table 5. MW-12 LNAPL Sampling Results
Lake Calumet Cluster Site, Chicago, IL

			Location Sample ID Sample Date	MW-12 MW-12-FP-03022017 3/2/2017
Analyte	CAS	T/D	Units	
Dibenzofuran	132-64-9	N	mg/kg	< 500 U
Diethyl phthalate	84-66-2	N	mg/kg	< 500 U
Dimethyl phthalate	131-11-3	N	mg/kg	< 500 U
Di-n-butyl phthalate	84-74-2	N	mg/kg	< 500 U
Di-n-octyl phthalate	117-84-0	N	mg/kg	< 500 U
Fluoranthene	206-44-0	N	mg/kg	**160 J**
Fluorene	86-73-7	N	mg/kg	**150 J**
Hexachloro-1,3-butadiene	87-68-3	N	mg/kg	< 500 U
Hexachlorobenzene	118-74-1	N	mg/kg	< 200 U
Hexachlorocyclopentadiene	77-47-4	N	mg/kg	< 2000 UJ
Hexachloroethane	67-72-1	N	mg/kg	< 500 U
Indeno(1,2,3-cd)pyrene	193-39-5	N	mg/kg	< 99 U
Isophorone	78-59-1	N	mg/kg	< 500 U
Naphthalene	91-20-3	N	mg/kg	**1200 J**
Nitrobenzene	98-95-3	N	mg/kg	< 99 U
N-Nitrosodi-n-propylamine	621-64-7	N	mg/kg	< 500 U
N-Nitrosodiphenylamine	86-30-6	N	mg/kg	< 500 U
p-Chloroaniline	106-47-8	N	mg/kg	< 990 U
Pentachlorophenol	87-86-5	N	mg/kg	< 2000 U
Phenanthrene	85-01-8	N	mg/kg	**460 J**
Phenol	108-95-2	N	mg/kg	< 500 U
Pyrene	129-00-0	N	mg/kg	**180 J**
VOCs				
1,1,1-Trichloroethane	71-55-6	N	mg/kg	< 5.0 U
1,1,2,2-Tetrachloroethane	79-34-5	N	mg/kg	< 5.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	N	mg/kg	< 5.0 U
1,1,2-Trichloroethane	79-00-5	N	mg/kg	< 5.0 U
1,1-Dichloroethane	75-34-3	N	mg/kg	**69**
1,1-Dichloroethene	75-35-4	N	mg/kg	< 5.0 U
1,2,4-Trichlorobenzene	120-82-1	N	mg/kg	< 5.0 U
1,2-Dibromo-3-chloropropane	96-12-8	N	mg/kg	< 25 U
1,2-Dibromoethane	106-93-4	N	mg/kg	< 5.0 U
1,2-Dichlorobenzene	95-50-1	N	mg/kg	< 5.0 U
1,2-Dichloroethane	107-06-2	N	mg/kg	< 5.0 U
1,2-Dichloropropane	78-87-5	N	mg/kg	< 5.0 U
1,3-Dichlorobenzene	541-73-1	N	mg/kg	< 5.0 U
1,4-Dichlorobenzene	106-46-7	N	mg/kg	< 5.0 U
2-Butanone (MEK)	78-93-3	N	mg/kg	< 25 U
4-Methyl-2-Pentanone	108-10-1	N	mg/kg	**250**
Acetone	67-64-1	N	mg/kg	< 25 U
Benzene	71-43-2	N	mg/kg	**18**
Bromodichloromethane	75-27-4	N	mg/kg	< 5.0 U
Bromoform	75-25-2	N	mg/kg	< 5.0 UJ
Bromomethane	74-83-9	N	mg/kg	< 10 UJ
Carbon Disulfide	75-15-0	N	mg/kg	< 10 U
Carbon Tetrachloride	56-23-5	N	mg/kg	< 5.0 U
CFC-11	75-69-4	N	mg/kg	< 5.0 U
CFC-12	75-71-8	N	mg/kg	< 10 U
Chlorobenzene	108-90-7	N	mg/kg	< 5.0 U
Chlorodibromomethane	124-48-1	N	mg/kg	< 5.0 U
Chloroethane	75-00-3	N	mg/kg	< 5.0 UJ
Chloroform	67-66-3	N	mg/kg	< 10 U

Table 5. MW-12 LNAPL Sampling Results
Lake Calumet Cluster Site, Chicago, IL

			Location Sample ID Sample Date	MW-12 MW-12-FP-03022017 3/2/2017
Analyte	CAS	T/D	Units	
Chloromethane	74-87-3	N	mg/kg	< 5.0 U
cis-1,2-Dichloroethene	156-59-2	N	mg/kg	**30**
cis-1,3-Dichloropropene	10061-01-5	N	mg/kg	< 5.0 U
Cyclohexane	110-82-7	N	mg/kg	< 5.0 U
Dichloromethane	75-09-2	N	mg/kg	< 25 U
Ethylbenzene	100-41-4	N	mg/kg	**6400 D**
Isopropylbenzene	98-82-8	N	mg/kg	**170**
Methyl Acetate	79-20-9	N	mg/kg	< 25 U
Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	N	mg/kg	< 25 U
Methylcyclohexane	108-87-2	N	mg/kg	**46**
Methyl-tert-butylether	1634-04-4	N	mg/kg	< 5.0 U
Styrene (Monomer)	100-42-5	N	mg/kg	< 5.0 U
Tetrachloroethene	127-18-4	N	mg/kg	**240**
Toluene	108-88-3	N	mg/kg	**4400 D**
Total Xylenes	1330-20-7	N	mg/kg	**23000 D**
trans-1,2-Dichloroethene	156-60-5	N	mg/kg	< 5.0 U
trans-1,3-Dichloropropene	10061-02-6	N	mg/kg	< 5.0 U
Trichloroethene	79-01-6	N	mg/kg	**69**
Vinyl chloride	75-01-4	N	mg/kg	**7.7**

Notes

mg/kg	milligram per kilogram
PCBs	polychlorinated biphenyls
SVOCs	semi-volatile organic compounds
VOCs	volatile organic compounds
J	compound was identified; result is an estimated value
U	compound was not detected; result is the compound quantitation limit
UJ	compound not detected above quantitation limit; reported limit is approximate
D	concentration is based on a diluted sample

Table 6. Spatial Evaluation of Monitoring Well Inorganics Data
Lake Calumet Cluster Site, Chicago, IL

	Location	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-13
	Sample ID	MW-01-GW-02162017	MW-02-GW-02152017	MW-03-GW-02152017	MW-04-GW-02152017	MW-05-GW-02152017	MW-06-GW-02152017	MW-07-GW-02142017	MW-08-GW-02142017	MW-09-GW-02142017	MW-10-GW-02142017	MW-11-GW-02162017	MW-13-GW-02162017
	Sample Date	2/16/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/16/2017	2/16/2017
Analyte	Units												
Ammonia Nitrogen	mg/l	49	46	41	7.7	50	530	740	36	73	1.7	59	57
Metals													
Aluminum	mg/l	0.21	< 0.20 U	< 0.20 U	0.064	< 0.20 U	0.14	0.77	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Aluminum	mg/l	0.34	< 0.20 U	< 0.20 U	0.094	< 0.20 U	0.29	1.3	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Antimony	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.0085	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Antimony	mg/l	0.0068	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.013	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U
Arsenic	mg/l	0.0046	< 0.010 U	< 0.010 U	0.0094	< 0.010 U	0.02	0.032	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.007
Arsenic	mg/l	0.0038	< 0.010 U	< 0.010 U	0.0073	< 0.010 U	0.021	0.039	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0074
Barium	mg/l	0.45	0.36	0.95	0.036	0.83	0.26	0.46	0.65	0.83	0.093	0.79	0.25
Barium	mg/l	0.46	0.34	1.1	0.033	0.86	0.26	0.51	0.67	0.82	0.093	0.79	0.25
Cadmium	mg/l	< 0.0020 U	< 0.0020 U	0.0011	< 0.0020 U	< 0.0020 U	< 0.0020 U	0.0027	< 0.0020 U	< 0.0020 U	0.0011	0.001	< 0.0020 U
Cadmium	mg/l	< 0.0020 U	< 0.0020 U	0.0011	< 0.0020 U	< 0.0020 U	0.0015	0.0052	0.00094	< 0.0020 U	0.0014	0.0011	< 0.0020 U
Calcium	mg/l	510	110	86	180	73	15	9.1	120	120	180	130	100
Calcium	mg/l	510	98	94	160	76	15	9.6	120	120	180	130	100
Chromium	mg/l	< 0.010 U	0.0032	< 0.010 U	< 0.010 U	< 0.010 U	0.1	0.33	< 0.010 U	0.003	< 0.010 U	0.0076	0.0027
Chromium	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.11	0.36	< 0.010 U	0.004	< 0.010 U	0.0073	0.0032
Cobalt	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.025	0.038	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0017	0.002
Cobalt	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.025	0.039	< 0.0050 U	< 0.0050 U	0.0011	0.0018	0.0018
Copper	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.026	< 0.010 U	< 0.010 U	0.0052	< 0.010 U	< 0.010 U
Copper	mg/l	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	0.0096	0.057	0.0022	< 0.010 U	0.0088	< 0.010 U	< 0.010 U
Iron	mg/l	< 0.20 U	< 36 UB	< 3.3 UB	2.7	19	0.59	3.4	11	26	11	28	4.3
Iron	mg/l	< 0.20 U	< 34 UB	< 4.0 UB	2.5	20	0.98	3.9	11	26	12	29	4.8
Lead	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.008	0.18	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Lead	mg/l	0.0027	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.11	0.5	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U
Magnesium	mg/l	< 0.10 U	54	84	48	88	31	25	87	83	78	120	48
Magnesium	mg/l	1.7	49	94	43	90	31	25	91	81	77	120	47
Manganese	mg/l	< 0.010 U	0.23	0.091	1.3	0.051	0.0071	0.013	0.18	0.16	1	0.22	0.24
Manganese	mg/l	< 0.010 U	0.21	0.1	1.2	0.053	0.0079	0.015	0.18	0.16	0.99	0.22	0.24
Mercury	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00036	0.00012	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Mercury	mg/l	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	0.00086	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U	< 0.00020 U
Nickel	mg/l	0.016	0.0043	0.0049	0.0056	< 0.010 U	0.1	0.13	< 0.010 U	0.0041	0.01	0.019	0.014
Nickel	mg/l	0.016	0.0045	0.0062	0.0066	0.0046	0.1	0.14	< 0.010 U	0.0046	0.011	0.02	0.014
Potassium	mg/l	50	37	62	16	42	520	570	35	78	35	120	69
Potassium	mg/l	51	34	69	14	43	520	570	36	77	34	110	67
Selenium	mg/l	< 0.010 U	0.0069	< 0.010 U	0	< 0.010 UJ	< 0.010 UJ	0.007	< 0.010 U	< 0.010 U	< 0.010 U	0.0068	0.0063
Selenium	mg/l	< 0.010 U	< 0.010 U	0.0055	< 0.010 U	< 0.010 U	0.0081	0.0093	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U	< 0.010 U
Sodium	mg/l	210	180	270	420	150	3500	3600	240	200	65	390	240
Sodium	mg/l	210	160	300	380	150	3300	3500	240	200	64	380	230
Vanadium	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.029	0.048	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.0042	0.0025
Vanadium	mg/l	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.032	0.055	< 0.0050 U	< 0.0050 U	< 0.0050 U	0.005	0.0028
Zinc	mg/l	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	< 0.020 U	0.023	0.32	< 0.020 U	< 0.020 U	0.073	< 0.020 U	< 0.020 U
Zinc	mg/l	0.012	0.05	< 0.020 U	< 0.020 U	0.0093	0.11	0.67	< 0.020 U	< 0.020 U	0.074	0.011	< 0.020 U

Notes:
mg/L = milligram per liter
U = constitent not detected. Associated value is the reporting limit.
Detected results are presented without laboratory qualifiers (i.e. "J" flag for estimated values).
Color gradation is used to highlight values along the spectrum of highest detected concentration (dark red) to lowest detected concentration (dark blue).

Table 7. Spatial Evaluation of Monitoring Well PCB Data
Lake Calumet Cluster Site, Chicago, IL

	Location	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-13
	Sample ID	MW-01-GW-02162017	MW-02-GW-02152017	MW-03-GW-02152017	MW-04-GW-02152017	MW-05-GW-02152017	MW-06-GW-02152017	MW-07-GW-02142017	MW-08-GW-02142017	MW-09-GW-02142017	MW-10-GW-02142017	MW-11-GW-02162017	MW-13-GW-02162017
	Sample Date	2/16/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/16/2017	2/16/2017
Analyte	Units												
PCBs													
Aroclor 1221	ug/l	< 0.37 U	< 0.38 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 UJ	< 0.36 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1232	ug/l	< 0.37 U	< 0.38 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 UJ	< 0.36 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1242	ug/l	< 0.37 U	< 0.38 U	< 0.38 U	< 0.37 U	< 0.37 U	2.6	3.1	< 0.36 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1248	ug/l	< 0.37 U	< 0.38 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.37 UJ	< 0.36 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U
Aroclor 1254	ug/l	< 0.37 U	< 0.38 U	< 0.38 U	< 0.37 U	< 0.37 U	< 0.37 U	1.6	< 0.36 U	< 0.37 U	< 0.37 U	< 0.37 U	< 0.38 U

Notes:
ug/L = microgram per liter
U = constitent not detected. Associated value is the reporting limit.
Detected results are presented without laboratory qualifiers (i.e. "J" flag for estimated values).
Color gradation is used to highlight values along the spectrum of highest detected concentration (dark red) to lowest detected concentration (dark blue).

Table 8. Spatial Evaluation of Monitoring Well SVOC Data
Lake Calumet Cluster Site, Chicago, IL

	Location	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-13
	Sample ID	MW-01-GW-02162017	MW-02-GW-02152017	MW-03-GW-02152017	MW-04-GW-02152017	MW-05-GW-02152017	MW-06-GW-02152017	MW-07-GW-02142017	MW-08-GW-02142017	MW-09-GW-02142017	MW-10-GW-02142017	MW-11-GW-02162017	MW-13-GW-02162017
	Sample Date	2/16/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/16/2017	2/16/2017
Analyte	Units												
SVOCs													
1,1-Biphenyl	ug/l	< 3.8 U	< 3.8 U	15	< 3.7 U	< 3.8 U	1.5	2.2	< 3.7 U	< 3.7 U	< 3.6 U	0.99	2
2,4-Dimethylphenol	ug/l	6.7	< 7.5 U	17	31	< 7.5 U	93	340	< 7.3 U	< 7.4 U	< 7.3 U	< 7.3 U	42
2-Chloronaphthalene	ug/l	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	3.1	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
2-Chlorophenol	ug/l	< 3.8 U	4.9	< 3.8 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.6 U	< 3.7 UJ	< 3.7 UJ	< 3.6 UJ	< 3.7 U	< 3.7 U
2-Methylnaphthalene	ug/l	5.5	100	150	< 1.5 U	0.4	2	5	< 1.5 U	2.5	< 1.5 U	3.7	11
2-Methylphenol	ug/l	1.5	< 1.5 U	2.2	7.7	< 1.5 U	18	49	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
4-Chloro-3-Methylphenol	ug/l	< 7.7 U	< 7.5 U	< 7.5 U	< 7.3 U	< 7.5 U	12	41	< 7.3 U	< 7.4 U	< 7.3 U	< 7.3 U	< 7.4 U
4-Methylphenol	ug/l	6.6	< 1.5 U	1.6	11	< 1.5 U	5	9.5	< 1.5 U	< 1.5 U	< 1.5 U	3.2	40
Acenaphthene	ug/l	8.1	1	20	< 0.73 U	0.32	0.5	4.3	< 0.73 U	1.1	< 0.73 U	0.23	0.86
Acenaphthylene	ug/l	< 0.77 U	< 0.75 U	1.9	< 0.73 U	< 0.75 U	< 0.73 U	< 0.73 U	< 0.73 U	< 0.74 U	< 0.73 U	< 0.73 U	2.3
Acetophenone	ug/l	2	< 3.8 U	< 3.8 U	3	< 3.8 U	< 3.7 U	< 3.6 U	< 3.7 U	< 3.7 U	< 3.6 U	< 3.7 U	32
Anthracene	ug/l	0.26	< 0.75 U	7.6	< 0.73 U	< 0.75 U	0.3	2.6	< 0.73 U	< 0.74 U	< 0.73 U	< 0.73 U	0.29
Benzaldehyde	ug/l	< 31 UJ	< 30 U	< 30 U	< 29 UJ	< 30 UJ	20	40	< 29 U	< 30 U	< 29 U	< 29 UJ	< 30 UJ
Benzo(a)anthracene	ug/l	< 0.15 U	< 0.15 U	0.39	< 0.15 U	< 0.15 U	< 0.15 U	1.5	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
Benzo(a)pyrene	ug/l	< 0.15 U	< 0.15 U	0.23	< 0.15 U	< 0.15 U	R	R	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 UJ
Benzo(b)fluoranthene	ug/l	< 0.15 U	< 0.15 U	0.19	< 0.15 U	< 0.15 U	R	1.3	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 UJ
Benzo(k)fluoranthene	ug/l	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	R	0.56	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 UJ
bis(2-Chloroethyl)ether	ug/l	< 1.5 U	1.4	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Ethylhexyl)phthalate	ug/l	< 7.7 U	< 7.5 U	< 7.5 U	< 7.3 U	< 7.5 U	41	170	< 7.3 U	< 7.4 U	1.3	< 7.3 U	2.9
Carbazole	ug/l	6.4	< 3.8 UJ	71	< 3.7 U	< 3.8 UJ	< 3.7 UJ	R	< 3.7 U	< 3.7 U	< 3.6 U	< 3.7 UJ	< 3.7 UJ
Chrysene	ug/l	< 0.15 U	< 0.15 U	0.36	< 0.15 U	< 0.15 U	< 0.15 U	1.6	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
Dibenzofuran	ug/l	1.4	< 1.5 U	27	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	0.21 J	< 1.5 U	< 1.5 U	< 1.5 U
Diethyl phthalate	ug/l	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	0.64	11
Di-n-butyl phthalate	ug/l	< 3.8 U	< 3.8 U	< 3.8 U	< 3.7 U	< 3.8 U	1.4	< 3.6 U	< 3.7 U	< 3.7 U	< 3.6 U	0.69	3.9
Fluoranthene	ug/l	< 0.77 U	< 0.75 U	5.8	< 0.73 U	< 0.75 U	0.43	< 0.73 U	< 0.73 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.74 U
Fluorene	ug/l	2.6	0.67	43	< 0.73 U	0.2	0.39	3.1	< 0.73 U	0.42	< 0.73 U	< 0.73 U	1.2
Naphthalene	ug/l	130	73	870	< 0.73 U	< 0.75 U	23	33	< 0.73 U	0.29	< 0.73 U	2.4	190
N-Nitrosodiphenylamine	ug/l	< 0.77 U	7.1	< 0.75 U	< 0.73 U	0.98	< 0.73 U	< 0.73 U	< 0.73 U	< 0.74 U	< 0.73 U	1.7	11
Phenanthrene	ug/l	1.3	0.32	36	< 0.73 U	< 0.75 U	1	10	< 0.73 U	0.37	< 0.73 U	< 0.73 U	0.86
Phenol	ug/l	72	< 3.8 U	< 3.8 U	13	< 3.8 U	< 3.7 U	< 3.6 U	< 3.7 UJ	< 3.7 UJ	< 3.6 UJ	0.73	39
Pyrene	ug/l	< 0.77 U	< 0.75 U	4.1	< 0.73 U	< 0.75 U	0.59	10	< 0.73 U	< 0.74 U	< 0.73 U	< 0.73 U	< 0.74 U

Notes:
mg/L = milligram per liter
U = constitent not detected. Associated value is the reporting limit.
Detected results are presented without laboratory qualifiers (i.e. "J" flag for estimated values).
Color gradation is used to highlight values along the spectrum of highest detected concentration (dark red) to lowest detected concentration (dark blue).

Table 9. Spatial Evaluation of Monitoring Well VOC Data
Lake Calumet Cluster Site, Chicago, IL

	Location	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-13
	Sample ID	MW-01-GW-02162017	MW-02-GW-02152017	MW-03-GW-02152017	MW-04-GW-02152017	MW-05-GW-02152017	MW-06-GW-02152017	MW-07-GW-02142017	MW-08-GW-02142017	MW-09-GW-02142017	MW-10-GW-02142017	MW-11-GW-02162017	MW-13-GW-02162017
	Sample Date	2/16/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/16/2017	2/16/2017
Analyte	Units												
1,1-Dichloroethane	ug/l	< 1.0 U	< 1.0 U	< 5.0 U	18	< 1.0 U	0.45	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,2-Dichlorobenzene	ug/l	1.8	6.2	< 5.0 U	0.56 J	< 1.0 U	2.3	5.9	< 1.0 U	< 1.0 U	< 1.0 U	1.2	18
1,2-Dichloroethane	ug/l	< 1.0 U	< 1.0 U	< 5.0 U	58	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,2-Dichloropropane	ug/l	< 1.0 U	< 1.0 U	< 5.0 U	1.7	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,3-Dichlorobenzene	ug/l	< 1.0 U	4.1	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,4-Dichlorobenzene	ug/l	3.6	11	< 5.0 U	< 1.0 U	1.4	13	14	< 1.0 U	1.4	< 1.0 U	3.8	< 10 U
2-Butanone (MEK)	ug/l	46	< 5.0 U	< 25 U	9.7	< 5.0 U	14	8.1	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	< 5.0 U	< 50 U
4-Methyl-2-Pentanone	ug/l	99	< 5.0 U	< 25 U	20	< 5.0 U	25	45	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 50 U
Acetone	ug/l	55	6.3	< 25 UJ	31	8.5	43	27	5.7	< 5.0 UJ	< 5.0 UJ	< 5.0 UJ	< 50 U
Carbon Disulfide	ug/l	< 2.0 U	< 2.0 U	< 10 U	2.2	< 2.0 UJ	1.6	< 2.0 UJ	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U
Chlorobenzene	ug/l	5.8	480	2.7	2	2.9	0.62	0.86	< 1.0 U	14	< 1.0 U	11	< 10 U
Chloroethane	ug/l	< 1.0 UJ	4.5	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 UJ
Chloroform	ug/l	< 2.0 U	< 2.0 U	< 10 U	0.65	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U
cis-1,2-Dichloroethene	ug/l	< 1.0 U	< 1.0 U	< 5.0 U	11	< 1.0 U	3.6	4.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	37
Cyclohexane	ug/l	1.6	< 1.0 U	< 5.0 U	1.9	2.2	< 1.0 U	0.55	< 1.0 U	< 1.0 U	< 1.0 U	110	< 10 U
Dichloromethane	ug/l	< 5.0 U	< 5.0 U	< 25 U	6.9	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 50 U
Isopropylbenzene	ug/l	14	4.9	< 5.0 U	0.92	36	4	11	< 1.0 U	3	< 1.0 U	61	100
Methyl Acetate	ug/l	< 5.0 U	< 5.0 U	< 25 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 50 U
Methylcyclohexane	ug/l	1.8	< 1.0 U	< 5.0 U	< 1.0 U	0.55	0.76	0.98	< 1.0 U	1.2	< 1.0 U	170	< 10 U
trans-1,2-Dichloroethene	ug/l	< 1.0 U	< 1.0 U	< 5.0 U	1.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Trichloroethene	ug/l	< 0.50 U	< 0.50 U	< 2.5 U	2.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U
Vinyl chloride	ug/l	0.48	< 0.50 U	< 2.5 U	3.8	< 0.50 U	3.4	8.4	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	11
Benzene	ug/l	30	14	57	530	0.24	6.6	14	< 0.50 U	1.5	< 0.50 U	81	410
Toluene	ug/l	11	0.84	29	28	< 0.50 U	130	380	< 0.50 U	< 0.50 U	< 0.50 U	0.82	2600
Ethylbenzene	ug/l	24	1.4	13	13	< 0.50 U	55	180	< 0.50 U	< 0.50 U	< 0.50 U	3.1	1300
Total Xylenes	ug/l	23	3.9	63	17	0.9	230	910	< 1.0 U	< 1.0 U	< 1.0 U	17	8400

Notes:
ug/L = microgram per liter
U = constitent not detected. Associated value is the reporting limit.
Detected results are presented without laboratory qualifiers (i.e. "J" flag for estimated values).
Color gradation is used to highlight values along the spectrum of highest detected concentration (dark red) to lowest detected concentration (dark blue).

Table 10. Summary of Comparison of LCCS Groundwater Data to Human Health Surface Water Benchmarks
Lake Calumet Cluster Site, Chicago, IL

Analyte	Maximum	Average	Maximum Diluted	Average Diluted
Metals				
Arsenic	X	X	o	o
Manganese	X	o	o	o
Polychorinated Biphenyls				
Aroclor 1221	X	X	o	o
Aroclor 1232	X	X	X	o
Volatile Organic Compounds				
Ethylbenzene	X	o	o	o
Vinyl chloride	X	X	X	X

Notes:

X = exceeds criterion
o = does not exceed criterion

This summary table only lists consituents that had one or more exceedances of the screening benchmarks. Constituent meeting benchmarks are not shown.
Averages calculated using half reporting limit for non-detects.
Diluted concentrations calculated using dilution factor of 10.

Table 11. Estimation of Potential LCCS Groundwater to IRM Surface Water Dilution
Lake Calumet Cluster Site, Chicago, IL

Analyte	Mean Water Concentration SW-05/SW-06 (ug/L)		Mean MW-04, MW-05, MW-06, MW-07 (mg/L)		Dilution (MW4/5/6/7 and SW-05/06)	
Antimony	0.9	J	0.0234375		26.0	
Arsenic	1.06	J	0.0226625		21.4	
Barium	71.25		0.457		6.4	
Beryllium	1	U	0.00581875		5.8	U
Cadmium	1	U	0.00349625		3.5	U
Chromium	4.75		0.152075		32.0	
Copper	1.45	U	0.02569375		17.7	U
Iron	1168.5		7.195625		6.2	
Lead	4.4		0.1996		45.4	
Manganese	235.5		0.2841875		1.2	
Mercury	0.2	U	0.000531563		2.7	U
Nickel	3.95		0.07374375		18.7	
Selenium	1.3	U	0.01465625		11.3	U
Silver	1	U	0.00715		7.2	U
Thallium	0.51		0.015	U	29.4	U
Zinc	9.8		0.3005125		30.7	
Total Ammonia-Nitrogen	3050	J	340.213125		111.5	

Notes:
ug/kg = micrograms per kilogram
mg/L = milligrams per liter
J = estimated result
U = not detected

Table 12. Summary of Comparison of LCCS Groundwater Data to Ecological Surface Water Benchmarks
Lake Calumet Cluster Site, Chicago, IL

Criteria	Number of Criteria Available	Number of Detected Analytes for Which Criteria are Available	Detected Analytes that Exceed (Maximum)		Number of Detected Analytes that Exceed (Average)		Number of Detected Analytes that Exceed (Maximum Diluted)		Number of Detected Analytes that Exceed (Average Diluted)	
			Number	Names	Number	Names	Number	Names	Number	Names
Illinois Acute Standards for the Protection of Aquatic Organisms	18	18	5	Copper, Iron, Lead, Zinc, Ethylbenzene	1	Iron	1	Iron	0	
Illinois Chronic Standards for the Protection of Aquatic Organisms	13	13	8	Cadmium, Chromium, Copper, Lead, Nickel, Zinc, Ethylbenzene, Total Xylenes	4	Lead, Nickel, Zinc, Ethylbenzene	2	Nickel, Ethylbenzene	0	
Illinois Standards for Open Waters of Lake Michigan (Ammonia)	1	1	1	Ammonia Nitrogen	1	Ammonia Nitrogen	1	Ammonia Nitrogen	1	Ammonia Nitrogen
Illinois Acute Standards for the Protection of Aquatic Organisms for the Chicago Area Waterway System	13	13	4	Copper, Lead, Zinc, Ethylbenzene	0		0		0	
Illinois Chronic Standards for the Protection of Aquatic Organisms for the Chicago Area Waterway System	13	13	8	Cadmium, Chromium, Copper, Lead, Nickel, Zinc, Ethylbenzene, Total Xylenes	4	Lead, Nickel, Zinc, Ethylbenzene	2	Nickel, Ethylbenzene	0	
Illinois Derived Acute Standards for the Protection of Aquatic Organisms	38	22	3	Anthracene, bis(2-Ethylhexyl)phthalate, Fluoranthene	1	Anthracene	0		0	
Ilinois Derived Chronic Standards for the Protection of Aquatic Organisms	38	22	6	Anthracene, Benzaldehyde, bis(2-Ethylhexyl)phthalate, Fluoranthene, Phenanthrene, Carbon Disulfide	4	Anthracene, Benzaldehyde, bis(2-Ethylhexyl)phthalate, Fluoranthene	1	bis(2-Ethylhexyl)phthalate	0	
USEPA Acute Aquatic Life Criteria	20	9	4	Aluminum, Cadmium, Lead, Zinc	0		0		0	
USEPA Chronic Aquatic Life Criteria	19	9	7	Aluminum, Cadmium, Chromium, Iron, Lead, Nickel, Zinc	4	Aluminum, Cadmium, Iron, Lead	3	Aluminum, Iron, Lead	0	
Calumet Open Space Reserve Surface Water Background	19	18	17	Aluminum, Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Vanadium, Zinc	17	Aluminum, Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Vanadium, Zinc	12	Aluminum, Arsenic, Barium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Vanadium, Zinc	6	Chromium, Iron, Lead, Mercury, Vanadium, Zinc
Calumet Open Space Reserve Surface Water Threshold	37	28	18	Ammonia Nitrogen, Arsenic, Cadmium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Vanadium, Zinc, Benzo(a)anthracene, Benzo(a)pyrene, Fluoranthene, Phenanthrene, Pyrene	8	Ammonia Nitrogen, Iron, Lead, Selenium, Vanadium, Benzo(a)anthracene, Benzo(a)pyrene, Pyrene	6	Ammonia Nitrogen, Iron, Lead, Benzo(a)anthracene, Benzo(a)pyrene, Pyrene	3	Ammonia Nitrogen, Benzo(a)anthracene, Benzo(a)pyrene
Calumet Open Space Reserve Surface Water Benchmark	37	28	8	Ammonia Nitrogen, Copper, Iron, Lead, Manganese, Selenium, Zinc, Benzo(a)anthracene	3	Ammonia Nitrogen, Iron, Benzo(a)anthracene	1	Iron	0	

Notes:

Averages calculated using half reporting limit for non-detects.
Diluted concentrations calculated using dilution factor of 10.

Table 13. Spatial Evaluation of IRM Surface Water Data
Lake Calumet Cluster Site, Chicago, IL

Analyte	Units	Adjacent to LCCS		Within 500 Feet of LCCS			North of LCCS			East of LCCS	
				East of LCCS	North of LCCS	South of LCCS					
		SW-05	SW-06	SW-10	SW-04	SW-07	SW-01	SW-02	SW-03	SW-08	SW-09[2]
		4/8/2009	4/8/2009	4/8/2009	4/8/2009	4/8/2009	4/8/2009	4/8/2009	4/8/2009	4/8/2009	4/8/2009
Antimony	µg/L	0.9	0.9	1.6	1.5	0.92	0.9	0.82	0.71	0.74	1.1
Arsenic	µg/L	1.4	0.72	1.3	2.1	1.3	2.4	1.6	1.9	1.4	1.305
Barium	µg/L	69.9	72.6	75.4	66.4	81.1	62.9	61.2	57.4	55	34.2
Beryllium	µg/L	1 U	1 U	1 U	0.076	1 U	1 U	1 U	1 U	1 U	1 U
Boron	µg/L	372	378	446	334	423	298	299	317	52.7	47.85
Cadmium	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chromium	µg/L	4.5	5	4.9	5.1	6.5	4.9	5.5	5.3	5.3	4.45
Copper	µg/L	1.5 U	1.4 U	1.1 U	2.6	2.4 U	2.7	1.8 U	1.6 U	1.9 U	1.6 U
Iron	µg/L	1400	937	384	1810	1480	2220	1970	1270	954	563.5
Lead	µg/L	3.9	4.9	3	5.4	6.9	8.2	7.1	3.3	7	6.3
Manganese	µg/L	244	227	175	277	291	315	312	303	97.4	129.5
Mercury	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	µg/L	4.1	3.8	3.5	4.9	4.3	4.4	3.8	3.8	1.3	1.2
Selenium	µg/L	1.4 U	1.2 U	1.4 U	1.7 U	1.6 U	1.4 U	1.1 U	1.2 U	0.61 U	0.7 U
Silver	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Thallium	µg/L	0.02	1	0.046	0.047	0.02	0.12	0.074	0.041	1	0.116
Zinc	µg/L	8.2	11.4	7	13.9	19.3	22.4	19.6	9.5	21.2	11.05
Total Ammonia-Nitrogen	mg/L	3.1	3	3.4	3.3	4.5	2.9	3.3	3.1	0.6 U	0.85
Un-ionized Ammonia[1]	mg/L	0.46	0.41	0.47	0.45	0.62	0.4	0.45	0.46	0.08 U	0.12
Hardness	mg/L	396	352	340	400	350	408	400	456	122	127

Notes:

Detected results are presented without laboratory qualifiers (i.e., "J" for estimated values).
Color gradation is used to highlight values along the spectrum of highest detected concentration (dark red) to lowest detected concentration (dark blue).

[1] Un-ionized ammonia determined from total ammonia-nitrogen using the conversation equation in Illinois Water Quality Standards IAC Title 35 Section 302.535

[2] Primary and duplicate results combined as follows: average if two detects, detect if one detect, max non-detect if both non-detect.

mg/L = milligrams per liter
µg/L = micrograms per liter
U = not detected

Table 14. Spatial Evaluation of IRM Surface Water Data Excluding SW-08 and SW-09
Lake Calumet Cluster Site, Chicago, IL

Analyte	Units	Adjacent to LCCS		Within 500 Feet of LCCS			North of LCCS		
				East of LCCS	North of LCCS	South of LCCS			
		SW-05	SW-06	SW-10	SW-04	SW-07	SW-01	SW-02	SW-03
Antimony	µg/L	0.9	0.9	1.6	1.5	0.92	0.9	0.82	0.71
Arsenic	µg/L	1.4	0.72	1.3	2.1	1.3	2.4	1.6	1.9
Barium	µg/L	69.9	72.6	75.4	66.4	81.1	62.9	61.2	57.4
Beryllium	µg/L	1 U	1 U	1 U	0.076	1 U	1 U	1 U	1 U
Boron	µg/L	372	378	446	334	423	298	299	317
Cadmium	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chromium	µg/L	4.5	5	4.9	5.1	6.5	4.9	5.5	5.3
Copper	µg/L	1.5 U	1.4 U	1.1 U	2.6	2.4 U	2.7	1.8 U	1.6 U
Iron	µg/L	1400	937	384	1810	1480	2220	1970	1270
Lead	µg/L	3.9	4.9	3	5.4	6.9	8.2	7.1	3.3
Manganese	µg/L	244	227	175	277	291	315	312	303
Mercury	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	µg/L	4.1	3.8	3.5	4.9	4.3	4.4	3.8	3.8
Selenium	µg/L	1.4 U	1.2 U	1.4 U	1.7 U	1.6 U	1.4 U	1.1 U	1.2 U
Silver	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Thallium	µg/L	0.02	1	0.046	0.047	0.02	0.12	0.074	0.041
Zinc	µg/L	8.2	11.4	7	13.9	19.3	22.4	19.6	9.5
Total Ammonia-Nitrogen	mg/L	3.1	3	3.4	3.3	4.5	2.9	3.3	3.1
Un-ionized Ammonia[1]	mg/L	0.46	0.41	0.47	0.45	0.62	0.4	0.45	0.46
Hardness	mg/L	396	352	340	400	350	408	400	456

Notes:

Detected results are presented without laboratory qualifiers (i.e., "J" for estimated values).
Color gradation is used to highlight values along the spectrum of highest detected concentration (dark red) to lowest detected concentration (dark blue).

[1] Un-ionized ammonia determined from total ammonia-nitrogen using the conversation equation in Illinois Water Quality Standards IAC Title 35 Section 302.535

[2] Primary and duplicate results combined as follows: average if two detects, detect if one detect, max non-detect if both non-detect.

mg/L = milligrams per liter
µg/L = micrograms per liter
U = not detected

Table 15. Spatial Evaluation of IRM Sediment Data
Lake Calumet Cluster Site, Chicago, IL

Analyte	Units	SD-06	SD-02
Polynuclear Aromatics			
Acenaphthene	mg/kg	ND	0.47
Acenaphthylene	mg/kg	ND	ND
Anthracene	mg/kg	ND	0.57
Benzo(a)anthracene	mg/kg	0.64	2.4
Benzo(a)pyrene	mg/kg	0.59	3.7
Benzo(b)fluoranthene	mg/kg	5.8	6.4
Benzo(g,h,i)perylene	mg/kg	0.5	2.8
Benzo(k)fluoranthene	mg/kg	0.51	2.2
Carbazole	mg/kg	ND	0.27
Chrysene	mg/kg	0.65	3.2
Dibenzo(a,h)anthracene	mg/kg	ND	0.79
Dibenzofuran	mg/kg	ND	0.33
Diethyl phthalate	mg/kg	0.5	ND
Fluoranthene	mg/kg	0.9	3.1
Fluorene	mg/kg	ND	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	0.37	2.1
2-Methylnaphthalene	mg/kg	ND	0.61
Naphthalene	mg/kg	ND	0.9
Phenanthrene	mg/kg	0.46	2.1
Pyrene	mg/kg	0.77	3.1
Pesticides/PCBs			
Chlordane	mg/kg	ND	ND
4,4´-DDD	mg/kg	ND	0.97
4,4´-DDE	mg/kg	ND	ND
4,4´-DDT	mg/kg	ND	ND
Dieldrin	mg/kg	ND	ND
Endrin	mg/kg	ND	ND
Heptachlor	mg/kg	ND	ND
Heptachlor epoxide	mg/kg	ND	ND
PCBs	mg/kg	ND	ND
Metals			
Antimony	mg/kg	1.2	4.5
Arsenic	mg/kg	8.8	34.9
Beryllium	mg/kg	0.91 U	1.9
Cadmium	mg/kg	2.1	9
Chromium	mg/kg	36.8	157
Copper	mg/kg	57.2	182
Lead	mg/kg	131	689
Mercury	mg/kg	0.31	0.71
Nickel	mg/kg	22.4	62.4
Selenium	mg/kg	1.7	3.2
Silver	mg/kg	1.1	3.2
Thallium	mg/kg	2.3 U	7.6 U
Zinc	mg/kg	561	2190

Notes:

Detected results are presented without laboratory qualifiers (i.e., "J" for estimated values).
Color gradation is used to highlight values along the spectrum of highest detected concentration (dark red) to lowest detected concentration (dark blue).

mg/kg = milligrams per kilogram
ND = not detected

Table 16. Summary of Comparison of IRM Surface Water Data to Ecological Surface Water Benchmarks
Lake Calumet Cluster Site, Chicago, IL

Criteria	Number of Criteria Available	Number of Detected Analytes for Which Criteria are Available	Detected Analytes that Exceed (Maximum)	
			Number	Names
Illinois Acute Standards for the Protection of Aquatic Organisms	14	10	1	Iron
Illinois Chronic Standards for the Protection of Aquatic Organisms	10	8	0	
Illinois Standards for Open Waters of Lake Michigan (Ammonia)	1	1	0	
Illinois Acute Standards for the Protection of Aquatic Organisms for the Chicago Area Waterway System	10	8	0	
Illinois Chronic Standards for the Protection of Aquatic Organisms for the Chicago Area Waterway System	10	8	0	
Illinois Derived Acute Standards for the Protection of Aquatic Organisms	0	0	0	
Ilinois Derived Chronic Standards for the Protection of Aquatic Organisms	0	0	0	
USEPA Acute Aquatic Life Criteria	8	5	0	
USEPA Chronic Aquatic Life Criteria	8	6	2	Iron, Lead
Calumet Open Space Reserve Surface Water Background	16	12	5	Barium, Iron, Lead, Manganese, Zinc
Calumet Open Space Reserve Surface Water Threshold	15	11	1	Iron
Calumet Open Space Reserve Surface Water Benchmark	15	11	1	Iron

Notes:

Maximum concentration based on results of surface samples collected in 2009 throughout IRM, not just locations adjacent to LCCS.

Table 17. Screening of IRM Sediment Data to Human Health Benchmarks
Lake Calumet Cluster Site, Chicago, IL

Analyte	Units	Recreational Sediment SL	SD-02	SD-06
Total Organic Carbon	percent	--	11.1	32.9
Polynuclear Aromatics				
Acenaphthene	mg/kg	10500	0.47 J	ND
Acenaphthylene	mg/kg	10500	ND	ND
Anthracene	mg/kg	52300	0.57 J	ND
Benzo(a)anthracene	mg/kg	32.5	2.4	0.64 J
Benzo(a)pyrene	mg/kg	3.4	3.7	0.59 J
Benzo(b)fluoranthene	mg/kg	33.5	6.4	5.8
Benzo(g,h,i)perylene	mg/kg	52300	2.8	0.5 J
Benzo(k)fluoranthene	mg/kg	335	2.2	0.51 J
Carbazole	mg/kg	6970	0.27 J	ND
Chrysene	mg/kg	3350	3.2	0.65 J
Dibenzo(a,h)anthracene	mg/kg	3.4	0.79 J	ND
Dibenzofuran	mg/kg	213	0.33 J	ND
Diethyl phthalate	mg/kg	147000	ND	0.5 J
Fluoranthene	mg/kg	6970	3.1	0.9 J
Fluorene	mg/kg	6970	0.4 J	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	33.5	2.1	0.37 J
2-Methylnaphthalene	mg/kg	697	0.61 J	ND
Naphthalene	mg/kg	2960	0.9 J	ND
Phenanthrene	mg/kg	52300	2.1	0.46 J
Pyrene	mg/kg	5230	3.1	0.77 J
Pesticides/PCBs				
Chlordane	mg/kg	50.6	ND	ND
4,4´-DDD	mg/kg	65.9	0.97	ND
4,4´-DDE	mg/kg	57.7	ND	ND
4,4´-DDT	mg/kg	55	ND	ND
Dieldrin	mg/kg	0.989	ND	ND
Endrin	mg/kg	55.3	ND	ND
Heptachlor	mg/kg	4.4	ND	ND
Heptachlor epoxide	mg/kg	2.2	ND	ND
PCBs	mg/kg	7.1	ND	ND
Metals				
Antimony	mg/kg	91.3	4.5	1.2 J
Arsenic	mg/kg	19.8	34.9	8.8
Beryllium	mg/kg	456	1.9	0.91 U
Cadmium	mg/kg	208	9	2.1
Chromium	mg/kg	342000	157	36.8
Copper	mg/kg	9130	182	57.2
Lead	mg/kg	--	689	131
Mercury	mg/kg	1960	0.71 J	0.31 J
Nickel	mg/kg	4560	62.4	22.4
Selenium	mg/kg	1140	3.2	1.7
Silver	mg/kg	1140	3.2	1.1
Thallium	mg/kg	2.3	7.6 U	2.3 U
Zinc	mg/kg	68400	2190	561

Notes:

Shaded values exceed recreational sediment SL.

-- = not available
mg/kg = milligrams per kilogram
ND = not detected
SL = screening level
J = estimated result
U = not detected

Table 18. Screening of IRM Sediment Data to COSR Ecological Benchmarks
Lake Calumet Cluster Site, Chicago, IL

Analyte	Units	COSR Background	COSR Ecotox Threshold	COSR Ecotox Benchmark	SD-02	SD-06
Total Organic Carbon	percent	--	--	--	11.1	32.9
Polynuclear Aromatics						
Acenaphthene	mg/kg	0.12	1.3	1.3	0.47 J	ND
Acenaphthylene	mg/kg	0.1	0.01	0.13	ND	ND
Anthracene	mg/kg	1.06	0.06	0.85	0.57 J	ND
Benzo(a)anthracene	mg/kg	2.91	0.11	1.05	**2.4**	0.64 J
Benzo(a)pyrene	mg/kg	2.99	0.15	1.45	**3.7**	0.59 J
Benzo(b)fluoranthene	mg/kg	2.69	10	--	6.4	5.8
Benzo(g,h,i)perylene	mg/kg	2.2	0.17	3.2	2.8	0.5 J
Benzo(k)fluoranthene	mg/kg	2.7	0.24	13.4	2.2	0.51 J
Carbazole	mg/kg	--	--	--	0.27 J	ND
Chrysene	mg/kg	3.76	0.17	1.29	**3.2**	0.65 J
Dibenzo(a,h)anthracene	mg/kg	0.69	0.03	0.14	**0.79 J**	ND
Dibenzofuran	mg/kg	--	--	--	0.33 J	ND
Diethyl phthalate	mg/kg	--	--	--	ND	0.5 J
Fluoranthene	mg/kg	9.07	6.2	6.2	3.1	0.9 J
Fluorene	mg/kg	0.43	0.54	0.54	0.4 J	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	3.48	0.2	2	**2.1**	0.37 J
2-Methylnaphthalene	mg/kg	--	--	--	0.61 J	ND
Naphthalene	mg/kg	0.2	0.47	0.56	**0.9 J**	ND
Phenanthrene	mg/kg	3.7	1.8	1.8	**2.1**	0.46 J
Pyrene	mg/kg	7.77	0.2	1.52	**3.1**	0.77 J
Pesticides/PCBs						
Chlordane	mg/kg	0.004	0.003	0.02	ND	ND
4,4´-DDD	mg/kg	1.25	0.005	0.06	**0.97**	ND
4,4´-DDE	mg/kg	0.14	0.003	0.03	ND	ND
4,4´-DDT	mg/kg	0.75	0.004	0.03	ND	ND
Dieldrin	mg/kg	--	0.002	0.06	ND	ND
Endrin	mg/kg	--	0.002	0.02	ND	ND
Heptachlor	mg/kg	0.00001	0.002	0.02	ND	ND
Heptachlor epoxide	mg/kg	--	0.002	0.02	ND	ND
PCBs	mg/kg	0.134	0.06	0.68	ND	ND
Metals						
Antimony	mg/kg	0.8	3.2	70	4.5	1.2 J
Arsenic	mg/kg	26.4	9.79	33	**34.9**	8.8
Beryllium	mg/kg	1.5	--	--	1.9	0.91 U
Cadmium	mg/kg	3.7	0.99	4.98	**9**	2.1
Chromium	mg/kg	69.9	43.4	111	**157**	36.8
Copper	mg/kg	99.9	31.6	149	**182**	57.2
Lead	mg/kg	538	35.8	128	**689**	**131**
Mercury	mg/kg	0.47	0.18	1.06	0.71 J	0.31 J
Nickel	mg/kg	49.2	22.7	48.6	**62.4**	22.4
Selenium	mg/kg	5.03	4	4	3.2	1.7
Silver	mg/kg	0.64	1	3.7	3.2	1.1
Thallium	mg/kg	1.1	--	--	7.6 U	2.3 U
Zinc	mg/kg	761	121	459	**2190**	**561**

Notes:

Shaded values exceed COSR background.
Underlined values exceed COSR ecotox threshold.
Bold values exceed COSR ecotox benchmark.

-- = not available
COSR = Calumet Open Space Reserve
mg/kg = milligrams per kilogram
ND = not detected
J = estimated result
U = not detected

Table 19. Screening of IRM Sediment Data to TEC and PEC Ecological Benchmarks
Lake Calumet Cluster Site, Chicago, IL

Analyte	Units	PEC	TEC	SD-02	SD-06
Total Organic Carbon	percent	--	--	11.1	32.9
Polynuclear Aromatics					
Acenaphthene	mg/kg	--	--	0.47 J	ND
Acenaphthylene	mg/kg	--	--	ND	ND
Anthracene	mg/kg	0.845	0.0572	0.57 J	ND
Benzo(a)anthracene	mg/kg	1.05	0.108	2.4	0.64 J
Benzo(a)pyrene	mg/kg	1.45	0.15	3.7	0.59 J
Benzo(b)fluoranthene	mg/kg	--	--	6.4	5.8
Benzo(g,h,i)perylene	mg/kg	--	--	2.8	0.5 J
Benzo(k)fluoranthene	mg/kg	--	--	2.2	0.51 J
Carbazole	mg/kg	--	--	0.27 J	ND
Chrysene	mg/kg	1.29	0.166	3.2	0.65 J
Dibenzo(a,h)anthracene	mg/kg	--	0.033	0.79 J	ND
Dibenzofuran	mg/kg	--	--	0.33 J	ND
Diethyl phthalate	mg/kg	--	--	ND	0.5 J
Fluoranthene	mg/kg	2.23	0.423	3.1	0.9 J
Fluorene	mg/kg	0.536	0.0774	0.4 J	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	--	--	2.1	0.37 J
2-Methylnaphthalene	mg/kg	--	--	0.61 J	ND
Naphthalene	mg/kg	0.561	0.176	0.9 J	ND
Phenanthrene	mg/kg	1.17	0.204	2.1	0.46 J
Pyrene	mg/kg	1.52	0.195	3.1	0.77 J
Pesticides/PCBs					
Chlordane	mg/kg	0.0176	0.00324	ND	ND
4,4´-DDD	mg/kg	0.028	0.00488	0.97	ND
4,4´-DDE	mg/kg	0.0313	0.00316	ND	ND
4,4´-DDT	mg/kg	0.0629	0.00416	ND	ND
Dieldrin	mg/kg	0.0618	0.0019	ND	ND
Endrin	mg/kg	0.207	0.00222	ND	ND
Heptachlor	mg/kg	--	--	ND	ND
Heptachlor epoxide	mg/kg	0.016	0.00247	ND	ND
PCBs	mg/kg	0.676	0.0598	ND	ND
Metals					
Antimony	mg/kg	--	--	4.5	1.2 J
Arsenic	mg/kg	33	9.79	34.9	8.8
Beryllium	mg/kg	--	--	1.9	0.91 U
Cadmium	mg/kg	4.98	0.99	9	2.1
Chromium	mg/kg	111	43.4	157	36.8
Copper	mg/kg	149	31.6	182	57.2
Lead	mg/kg	128	35.8	689	131
Mercury	mg/kg	1.06	0.18	0.71 J	0.31 J
Nickel	mg/kg	48.6	22.7	62.4	22.4
Selenium	mg/kg	--	--	3.2	1.7
Silver	mg/kg	--	--	3.2	1.1
Thallium	mg/kg	--	--	7.6 U	2.3 U
Zinc	mg/kg	459	121	2190	561

Notes:

Shaded values exceed PEC.
Underlined values exceed TEC.
PEC and TEC values from Macdonald et al. (2000)

-- = not available
mg/kg = milligrams per kilogram
TEC = threshold effects concentration
PEC = probable effects concentration
ND = not detected
J = estimated result
U = not detected

Table 20. Calculation of PEC Quotients for IRM Sediment Data
Lake Calumet Cluster Site, Chicago, IL

Analyte	Units	PEC	SD-02	SD-02 to PEC Ratio	SD-06	SD-06 to PEC Ratio
Total Organic Carbon	percent	--	11.1	--	32.9	--
Polynuclear Aromatics						
Acenaphthene	mg/kg	--	0.47	--	ND	--
Acenaphthylene	mg/kg	--	ND	--	ND	--
Anthracene	mg/kg	0.845	0.57	0.67	ND	--
Benzo(a)anthracene	mg/kg	1.05	2.4	2.3	0.64	0.61
Benzo(a)pyrene	mg/kg	1.45	3.7	2.6	0.59	0.41
Benzo(b)fluoranthene	mg/kg	--	6.4	--	5.8	--
Benzo(g,h,i)perylene	mg/kg	--	2.8	--	0.5	--
Benzo(k)fluoranthene	mg/kg	--	2.2	--	0.51	--
Carbazole	mg/kg	--	0.27	--	ND	--
Chrysene	mg/kg	1.29	3.2	2.5	0.65	0.50
Dibenzo(a,h)anthracene	mg/kg	--	0.79	--	ND	--
Dibenzofuran	mg/kg	--	0.33	--	ND	--
Diethyl phthalate	mg/kg	--	ND	--	0.5	--
Fluoranthene	mg/kg	2.23	3.1	1.4	0.9	0.40
Fluorene	mg/kg	0.536	0.4	0.75	ND	--
Indeno(1,2,3-c,d)pyrene	mg/kg	--	2.1	--	0.37	--
2-Methylnaphthalene	mg/kg	--	0.61	--	ND	--
Naphthalene	mg/kg	0.561	0.9	1.6	ND	--
Phenanthrene	mg/kg	1.17	2.1	1.8	0.46	0.39
Pyrene	mg/kg	1.52	3.1	2.0	0.77	0.51
Pesticides/PCBs						
Chlordane	mg/kg	0.0176	ND	--	ND	--
4,4´-DDD	mg/kg	0.028	0.97	35	ND	--
4,4´-DDE	mg/kg	0.0313	ND	--	ND	--
4,4´-DDT	mg/kg	0.0629	ND	--	ND	--
Dieldrin	mg/kg	0.0618	ND	--	ND	--
Endrin	mg/kg	0.207	ND	--	ND	--
Heptachlor	mg/kg	--	ND	--	ND	--
Heptachlor epoxide	mg/kg	0.016	ND	--	ND	--
PCBs	mg/kg	0.676	ND	--	ND	--
Metals						
Antimony	mg/kg	--	4.5	--	1.2	--
Arsenic	mg/kg	33	34.9	1.1	8.8	0.27
Beryllium	mg/kg	--	1.9	--	0.91 U	--
Cadmium	mg/kg	4.98	9	1.8	2.1	0.42
Chromium	mg/kg	111	157	1.4	36.8	0.33
Copper	mg/kg	149	182	1.2	57.2	0.38
Lead	mg/kg	128	689	5.4	131	1.0
Mercury	mg/kg	1.06	0.71	0.67	0.31	0.29
Nickel	mg/kg	48.6	62.4	1.3	22.4	0.46
Selenium	mg/kg	--	3.2	--	1.7	--
Silver	mg/kg	--	3.2	--	1.1	--
Thallium	mg/kg	--	7.6 U	--	2.3 U	--
Zinc	mg/kg	459	2190	4.8	561	1.2
			Average:	**3.8**	**Average:**	**0.52**

Notes:

Shaded values exceed PEC.
PEC values from Macdonald et al. (2000)

-- = not available
mg/kg = milligrams per kilogram
PEC = probable effects concentration
ND = not detected
J = estimated result
U = not detected

FIGURES

City: CHI User: mgress
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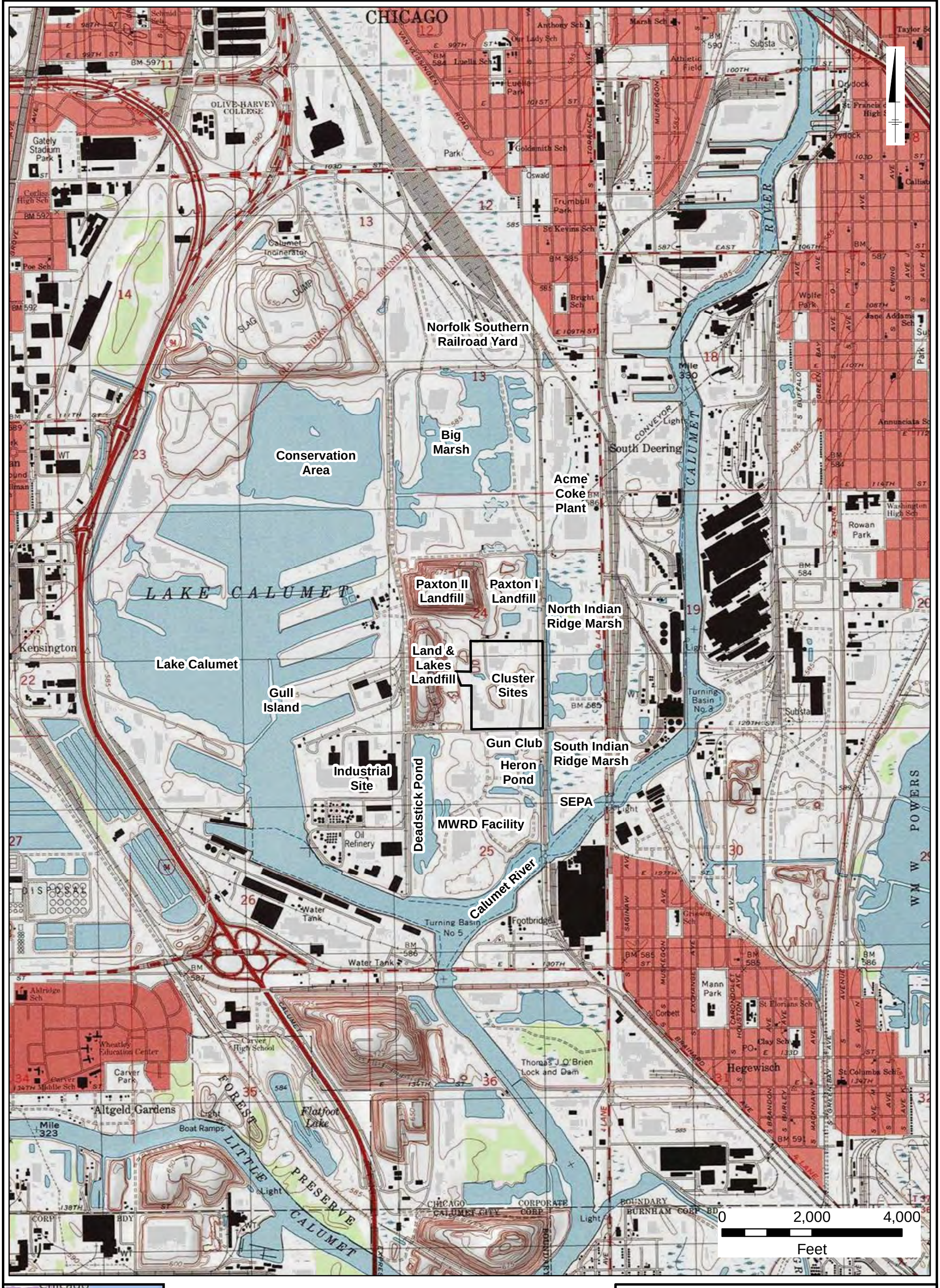

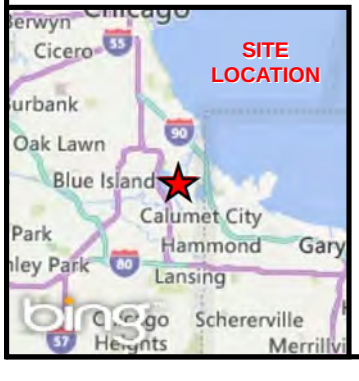

LEGEND

LAKE CALUMET CLUSTER SITE BOUNDARY

USGS TOPOGRAPHIC QUADRANGLE:
LAKE CALUMET

Notes:
Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed
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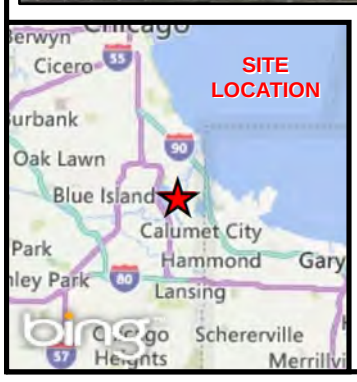
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

SITE LOCATION

ARCADIS

FIGURE
1

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_SiteLocation_20170606.mxd



LEGEND

LAKE CALUMET CLUSTER SITE BOUNDARY

Notes:
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LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

SITE VICINITY

ARCADIS

FIGURE
2

City: CHI User: mnesta
Path: Z:\GISPROJECTS_ENV\LCCS\MXD\LCCS_SurveyedLocations_2016_22313.mxd

LEGEND

- Monitoring Well Location
- HPT/VAP Location
- Piezometer Location - Shallow
- Piezometer Location - Shallow/Deep
- ALBURN INCINERATOR / US DRUM
- Site Boundary

Service Layer Credits: Copyright:© 2013 Esri, DeLorme, NAVTEQ, TomTom
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

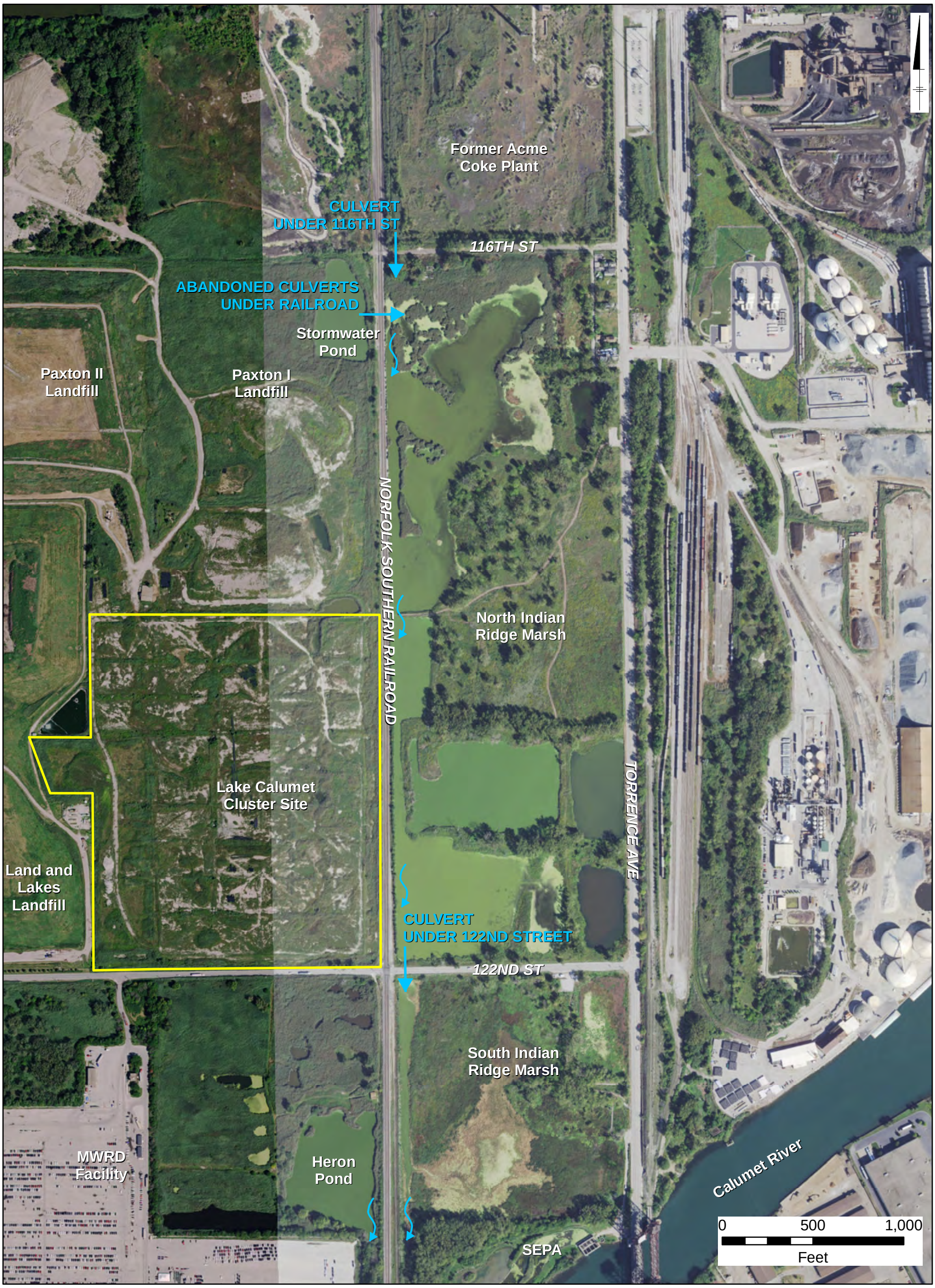
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

SITE PLAN

ARCADIS

FIGURE
3

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-07\LCCS_Area_Hydro_Plan_20170713.mxd



LEGEND

- Site Boundary
- Culvert
- Ditch or Stream Flow

NOTE:
SEPA - Sidestream Elevated Pool Aeration
MWRD - Metropolitan Water Reclamation District

Source: V3 Consultants Calumet Area Hydrologic Master Plan

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

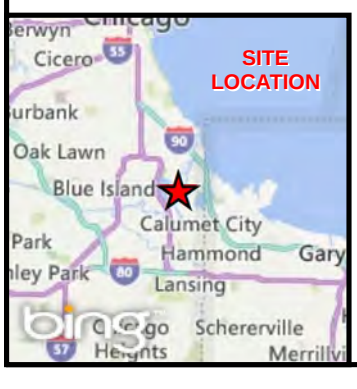
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

HYDROLOGY OF INDIAN RIDGE MARSH

ARCADIS

FIGURE
4

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_20170606.mxd



LEGEND

- PREVIOUSLY INSTALLED MONITORING WELL
- LAKE CALUMET CLUSTER SITE BOUNDARY

Notes:
-All sampling locations are estimated based on previously published reports.
-Monitoring wells shown in the site boundary were destroyed.
-Bing Roads Base Image Source: ArcGIS Online Services, Access date: 6/15/2017, via ArcGIS v. 10.
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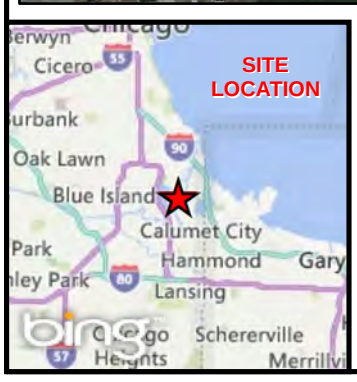
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

PREVIOUS GROUNDWATER SAMPLING LOCATIONS

ARCADIS

FIGURE
5

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocsSWSD_20170606.mxd



LEGEND

- SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS COLLECTED BY ECOLOGY AND ENVIRONMENT (1999)
- SURFACE WATER SAMPLE LOCATIONS COLLECTED BY HARZA ENGINEERING (2001)
- SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS COLLECTED BY MWH (2002)
- SURFACE WATER WATER, SEDIMENT, AND TOXICITY BIOASSAY SAMPLE LOCATIONS COLLECTED BY TETRA TECH (2009)
- VEGETATIVE SAMPLE LOCATIONS COLLECTED BY TETRA TECH (2009)
- LAKE CALUMET CLUSTER SITE BOUNDARY

Notes:
-All sampling locations are estimated based on previously published reports.
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LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

INDIAN RIDGE MARSH SAMPLING LOCATIONS

ARCADIS

FIGURE
6

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_Contours_March16_20170607.mxd

LEGEND

- Monitoring Well Location
- HPT/VAP Location
- Piezometer Location - Shallow
- Piezometer Location - Shallow/Deep
- ALBURN INCINERATOR / US DRUM
- Site Boundary
- Groundwater Elevation Contour (Dashed where inferred)
- Hydraulic Gradient Vector

NOTE:
- Deep well elevations not used for contouring.
- Hydraulic gradient vector determined using USEPA 3PE software and groundwater elevations for MW-2, MW-3 and MW-4 (shown in blue).

Service Layer Credits: Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

GROUNDWATER ELEVATION MAP MARCH 2016

ARCADIS

FIGURE
7

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-07\LCCS_Contours_Aug16_20170718.mxd

LEGEND

- Monitoring Well Location
- HPT/VAP Location
- Piezometer Location - Shallow
- Piezometer Location - Shallow/Deep
- ALBURN INCINERATOR / US DRUM
- Site Boundary
- Groundwater Elevation Contour (Dashed where inferred)
- Hydraulic Gradient Vector

NOTE:
- Deep well elevations not used for contouring.
- Piezometers were gauged on 7/29/16.
- Monitoring wells were gauged on 8/8/16.
- Hydraulic gradient vector determined using USEPA 3PE software and groundwater elevations for MW-2, MW-3, and MW-4 (blue).

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

GROUNDWATER ELEVATION MAP AUGUST 2016

ARCADIS

FIGURE
8

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_Contours_Sept16_20170608.mxd

LEGEND

- Monitoring Well Location
- HPT/VAP Location
- Piezometer Location - Shallow
- Piezometer Location - Shallow/Deep
- ALBURN INCINERATOR / US DRUM
- Site Boundary
- Groundwater Elevation Contour (Dashed where inferred)
- Hydraulic Gradient Vector

NOTE:
- Deep well elevations not used for contouring.
-Hydraulic gradient vector determined using USEPA 3PE software and groundwater elevations for MW-2, MW-3 and MW-4 (shown in blue).

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LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

GROUNDWATER ELEVATION MAP SEPTEMBER 2016

ARCADIS

FIGURE
9

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_Contours_Dec16_20170608.mxd

LEGEND

- Monitoring Well Location
- HPT/VAP Location
- Piezometer Location - Shallow
- Piezometer Location - Shallow/Deep
- ALBURN INCINERATOR / US DRUM
- Site Boundary
- Groundwater Elevation Contour (Dashed where inferred)
- Hydraulic Gradient Vector

NOTE:
- Deep well elevations not used for contouring.
- Hydraulic gradient vector determined using USEPA 3PE software and groundwater elevations for MW-2, MW-3 and MW-4 (shown in blue).

Service Layer Credits: Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

GROUNDWATER ELEVATION MAP DECEMBER 2016

ARCADIS

FIGURE
10

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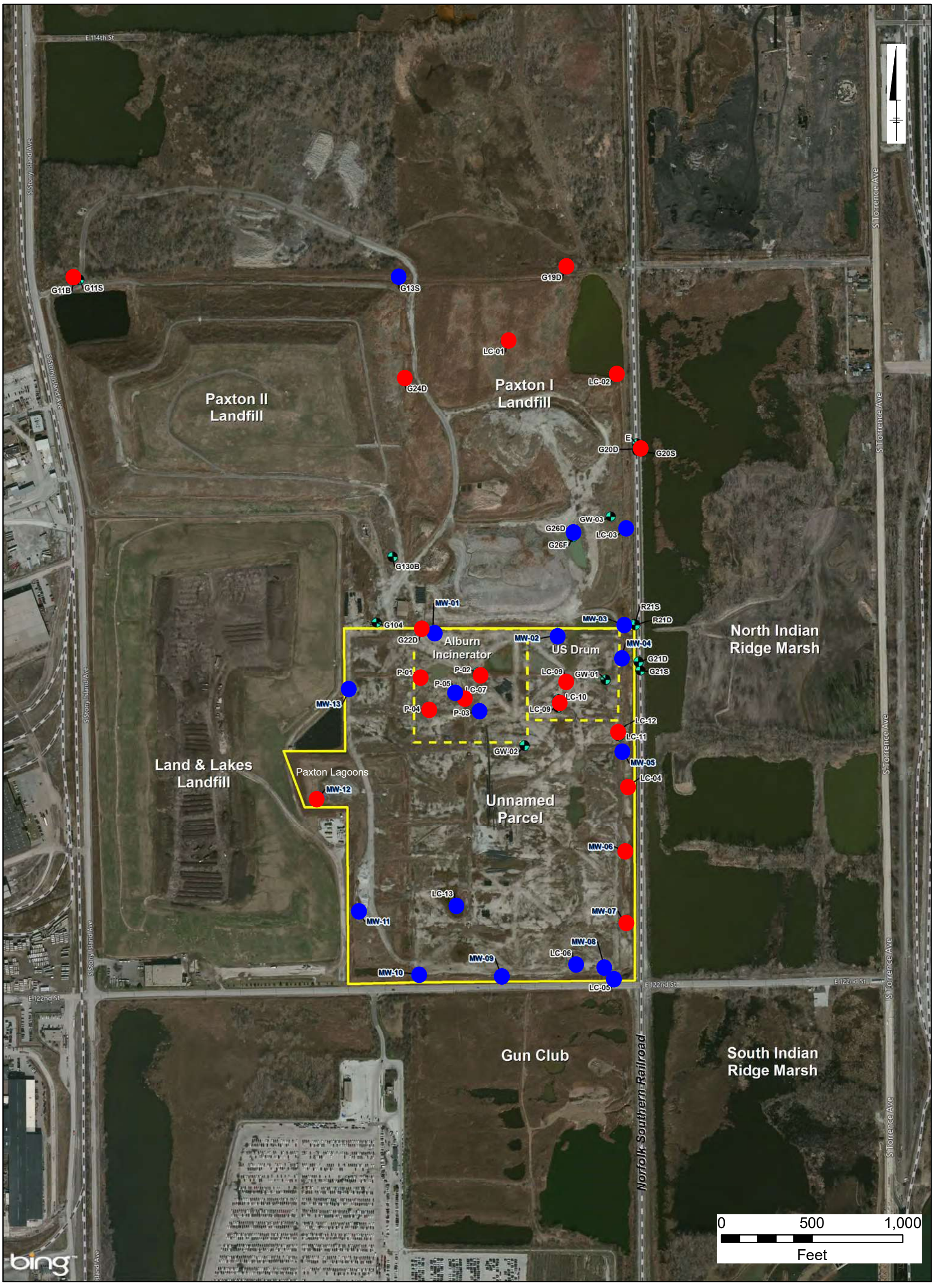

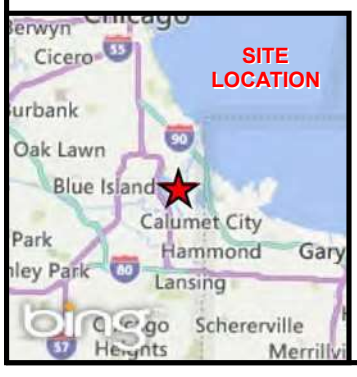

LEGEND

- Monitoring Well Location
- Previously Installed Monitoring Well
- Alburn Incinerator / US Drum
- Lake Calumet Cluster Site Boundary
- High concentrations
- Low concentrations

Notes:
-All sampling locations are estimated based on previously published reports.
-Previous monitoring wells shown in the site boundary were destroyed.
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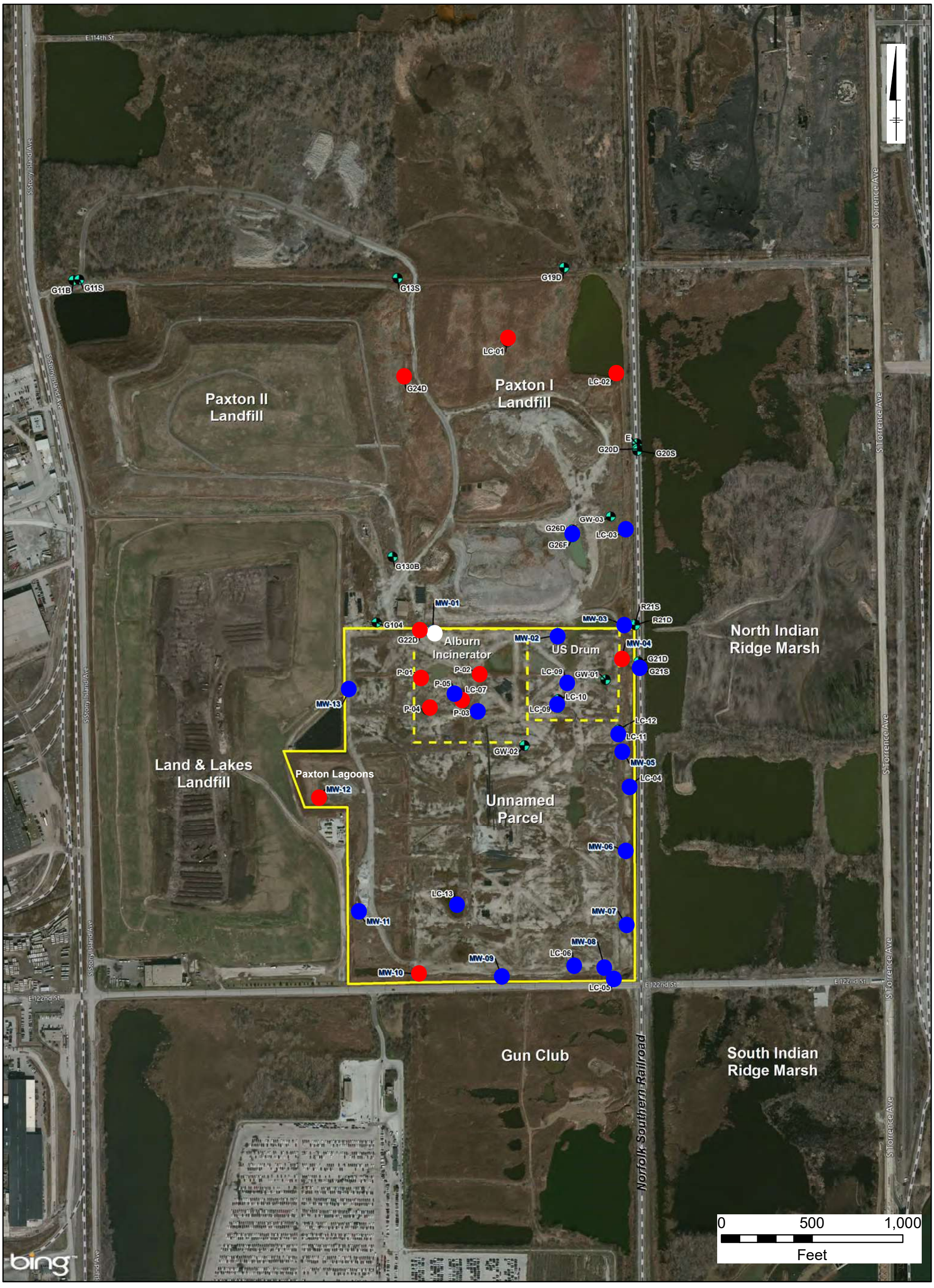
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

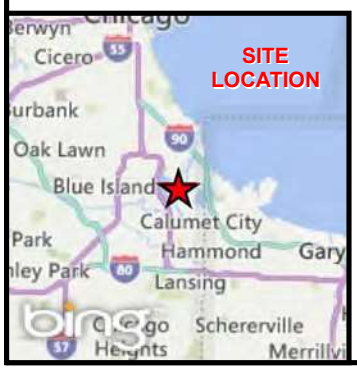
DISTRIBUTION OF INORGANIC CONSTITUENTS

ARCADIS

FIGURE
11

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_PrevMWs_20170628.mxd





LEGEND

- Monitoring Well Location
- Previously Installed Monitoring Well
- Alburn Incinerator / US Drum
- Lake Calumet Cluster Site Boundary
- High concentrations
- Low concentrations
- Not detected

Notes:
-All sampling locations are estimated based on previously published reports.
-Previous monitoring wells shown in the site boundary were destroyed.
-Bing Roads Base Image Source: ArcGIS Online Services, Access date: 6/28/2017, via ArcGIS v. 10.
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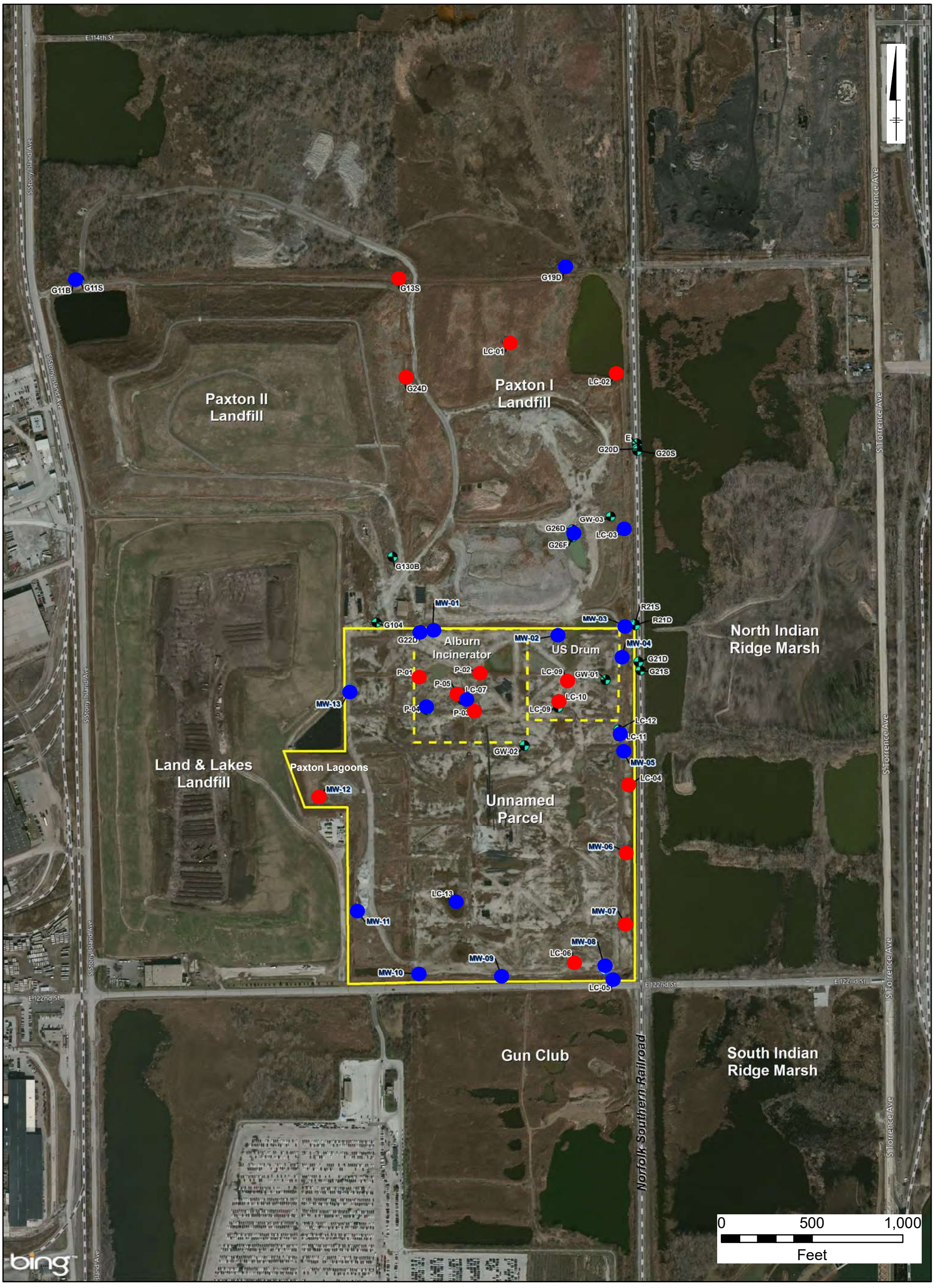
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

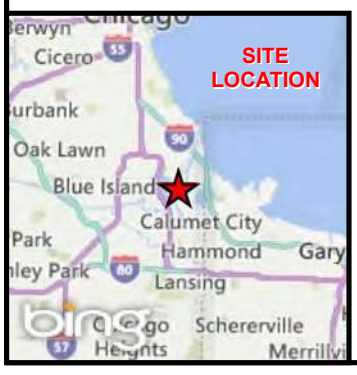
DISTRIBUTION OF MANGANESE

ARCADIS

FIGURE
12

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_PrevMWs_20170628.mxd





LEGEND

- Monitoring Well Location
- Previously Installed Monitoring Well
- Alburn Incinerator / US Drum
- Lake Calumet Cluster Site Boundary
- High concentrations
- Low concentrations
- No detections

Notes:
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-Previous monitoring wells shown in the site boundary were destroyed.
-Bing Roads Base Image Source: ArcGIS Online Services, Access date: 6/28/2017, via ArcGIS v. 10.
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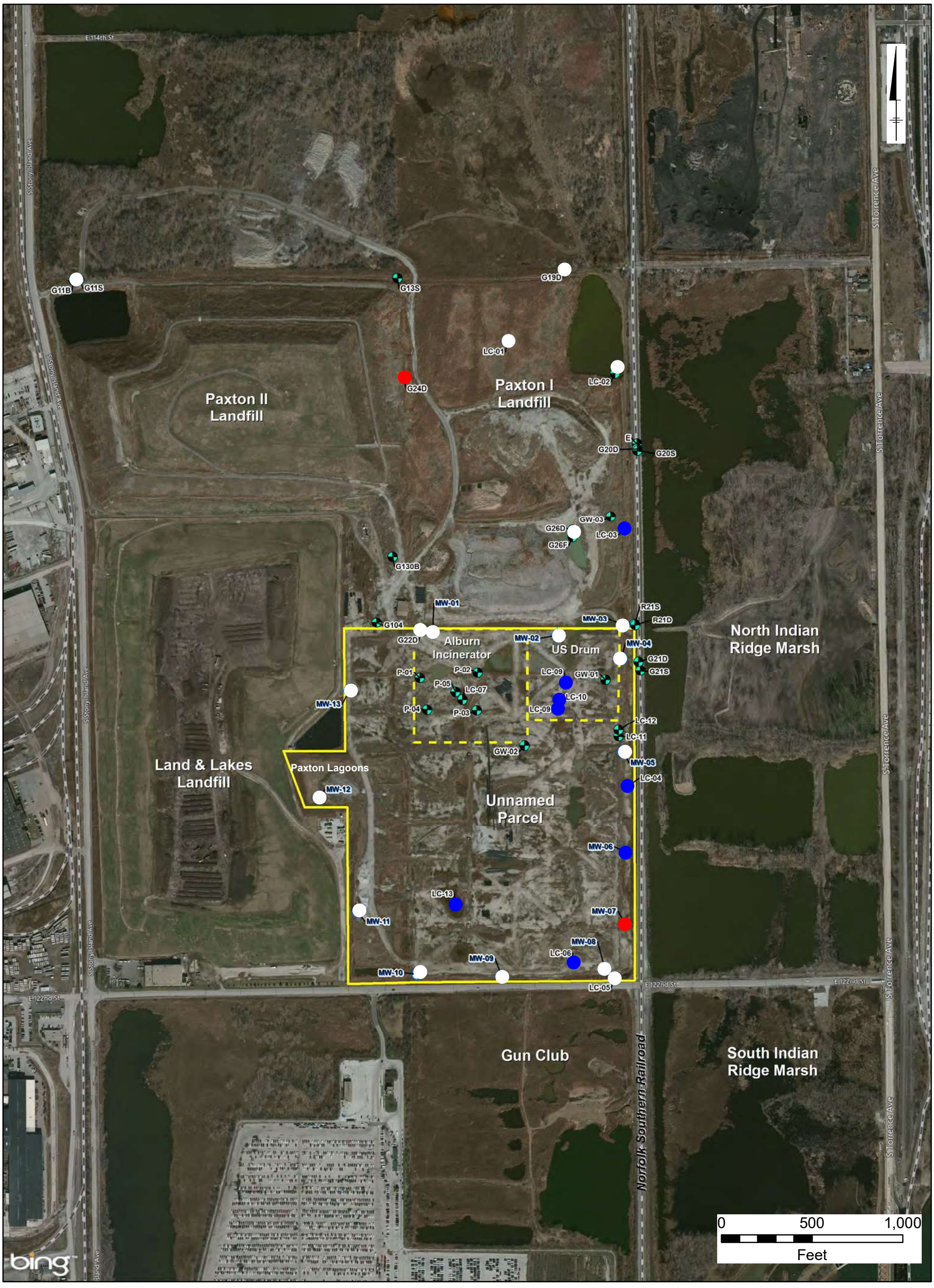
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

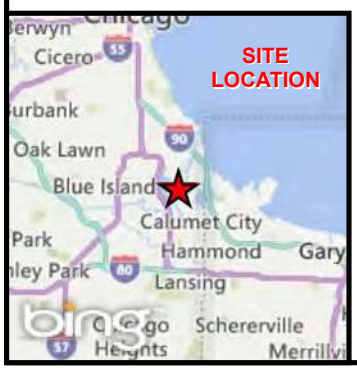
DISTRIBUTION OF AMMONIA

ARCADIS

FIGURE
13

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_PrevMWs_20170628.mxd





LEGEND

- Monitoring Well Location
- Previously Installed Monitoring Well
- Alburn Incinerator / US Drum
- Lake Calumet Cluster Site Boundary
- High concentrations
- Low concentrations
- No detections

Notes:
-All sampling locations are estimated based on previously published reports.
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-Bing Roads Base Image Source: ArcGIS Online Services, Access date: 6/28/2017, via ArcGIS v. 10.
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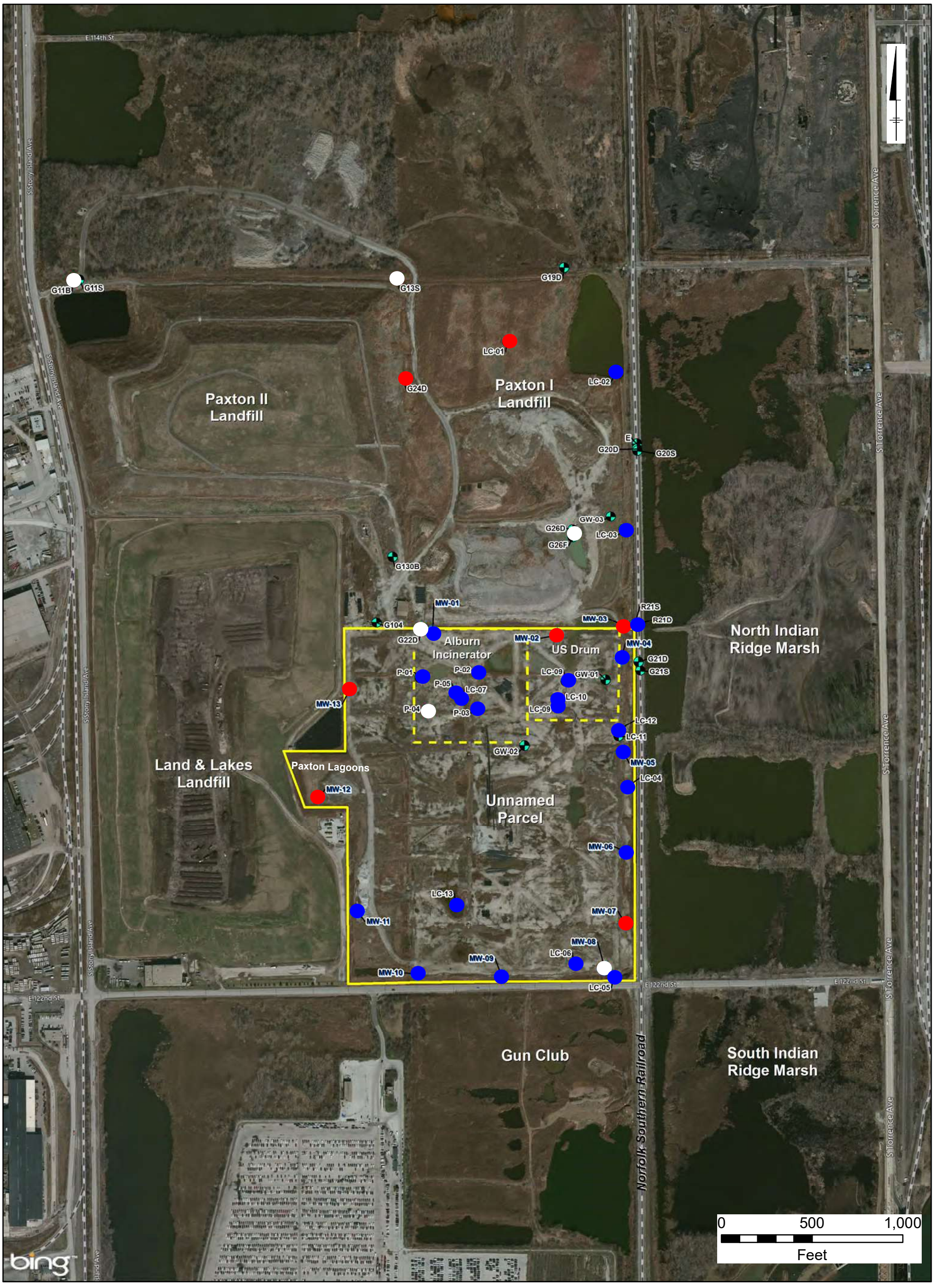
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

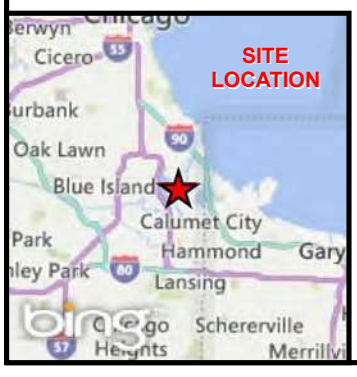
DISTRIBUTION OF POLYCHLORINATED BIPHENYL

ARCADIS

FIGURE
14

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_PrevMWs_20170628.mxd





LEGEND

- Monitoring Well Location
- Previously Installed Monitoring Well
- Alburn Incinerator / US Drum
- Lake Calumet Cluster Site Boundary
- High concentrations
- Low concentrations
- No detections

Notes:
-All sampling locations are estimated based on previously published reports.
-Previous monitoring wells shown in the site boundary were destroyed.
-Bing Roads Base Image Source: ArcGIS Online Services, Access date: 6/28/2017, via ArcGIS v. 10.
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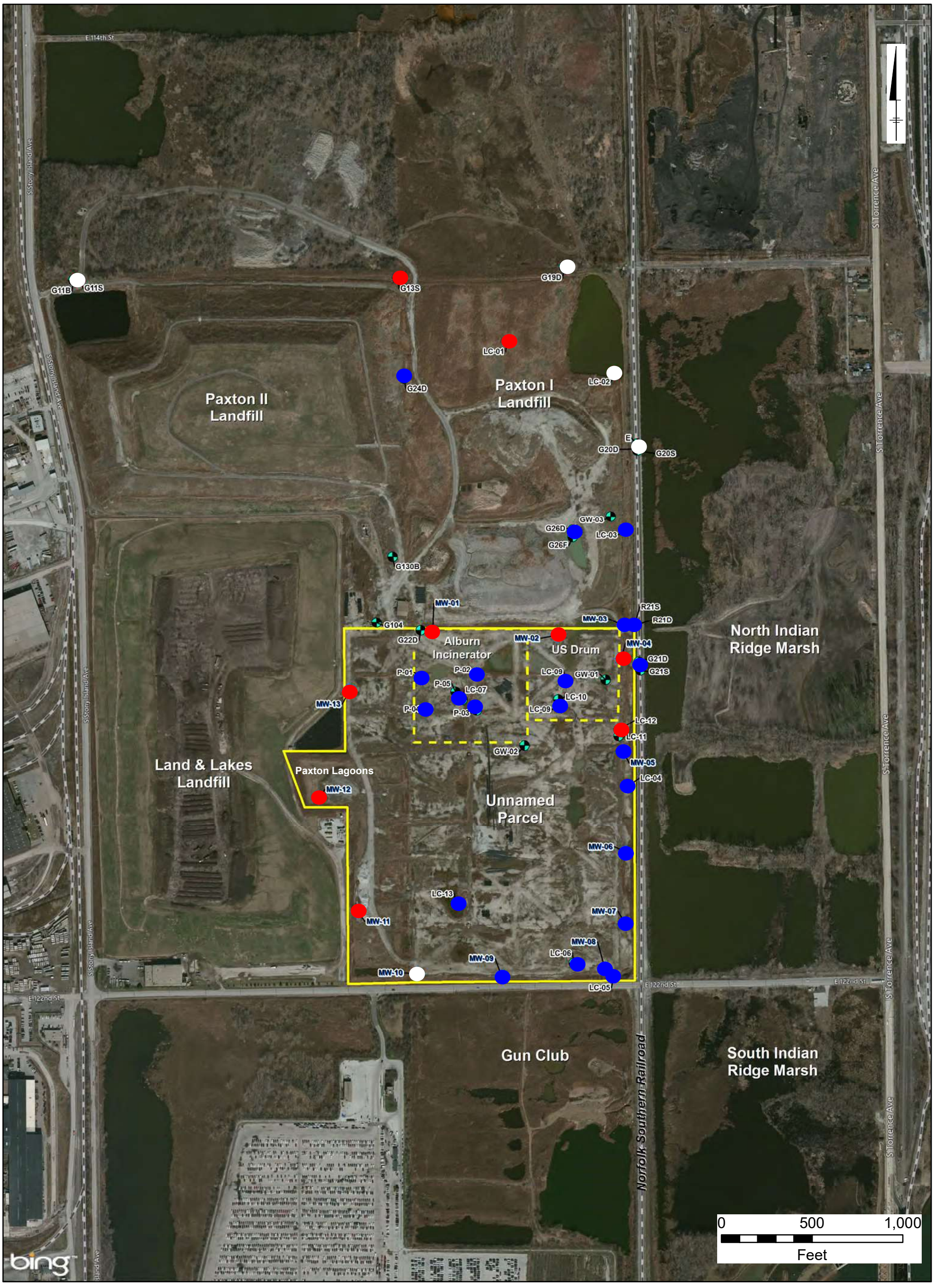
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

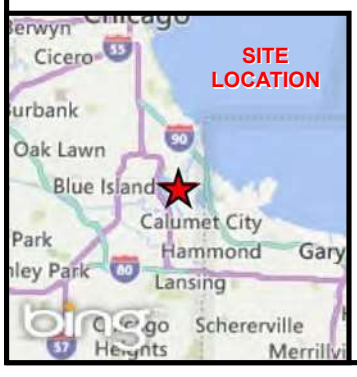
DISTRIBUTION OF SEMIVOLATILE ORGANIC COMPOUNDS

ARCADIS

FIGURE
15

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_PrevMWs_20170628.mxd





LEGEND

- Monitoring Well Location
- Previously Installed Monitoring Well
- Alburn Incinerator / US Drum
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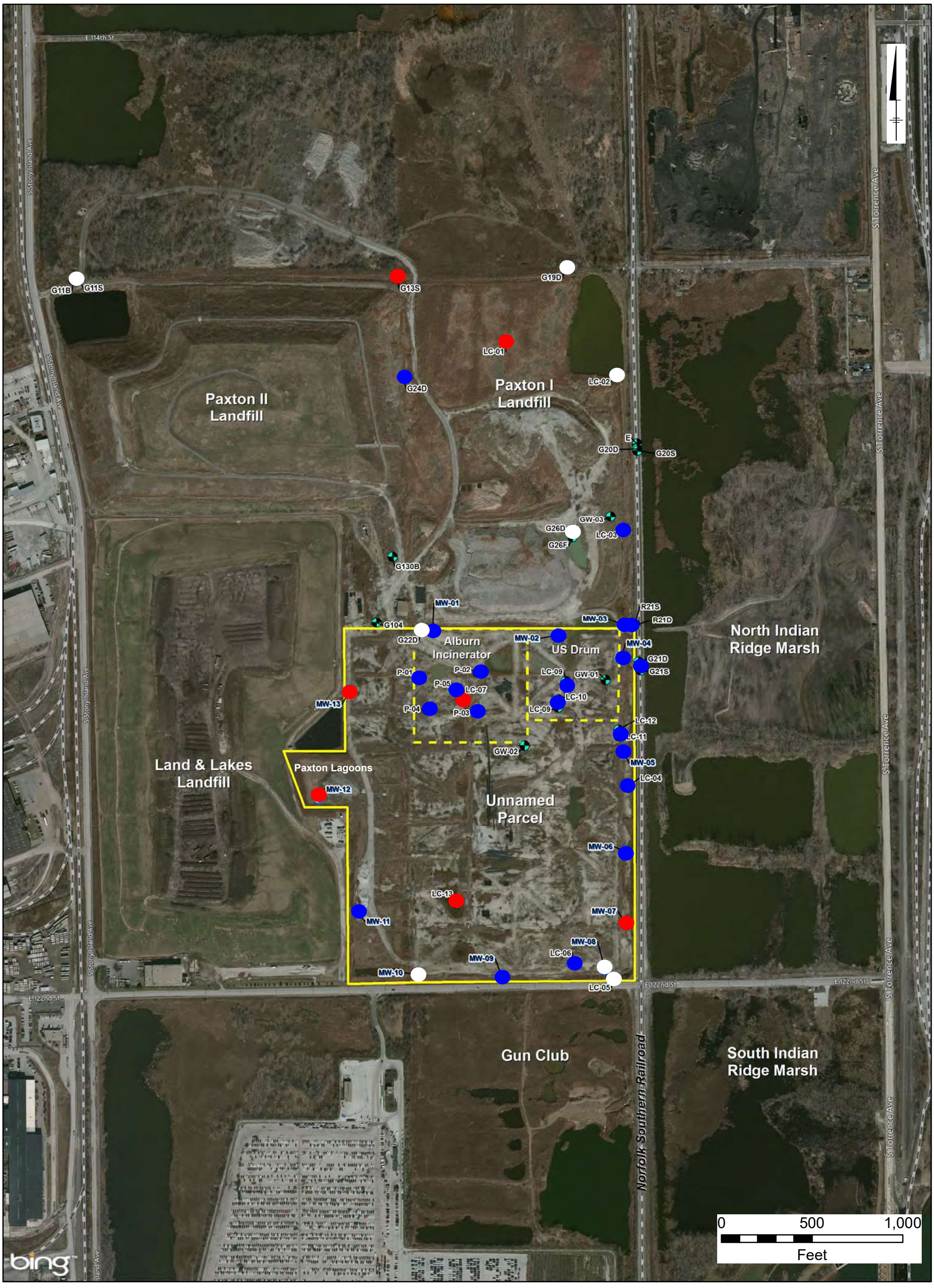
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

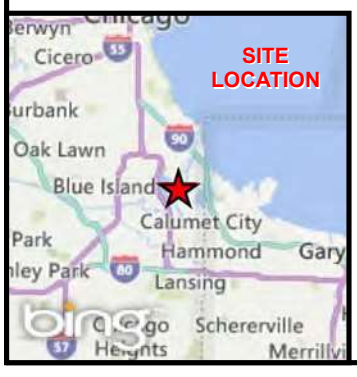
DISTRIBUTION OF VOLATILE ORGANIC COMPOUNDS

ARCADIS

FIGURE
16

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_PrevMWs_20170628.mxd





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- Alburn Incinerator / US Drum
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Notes:
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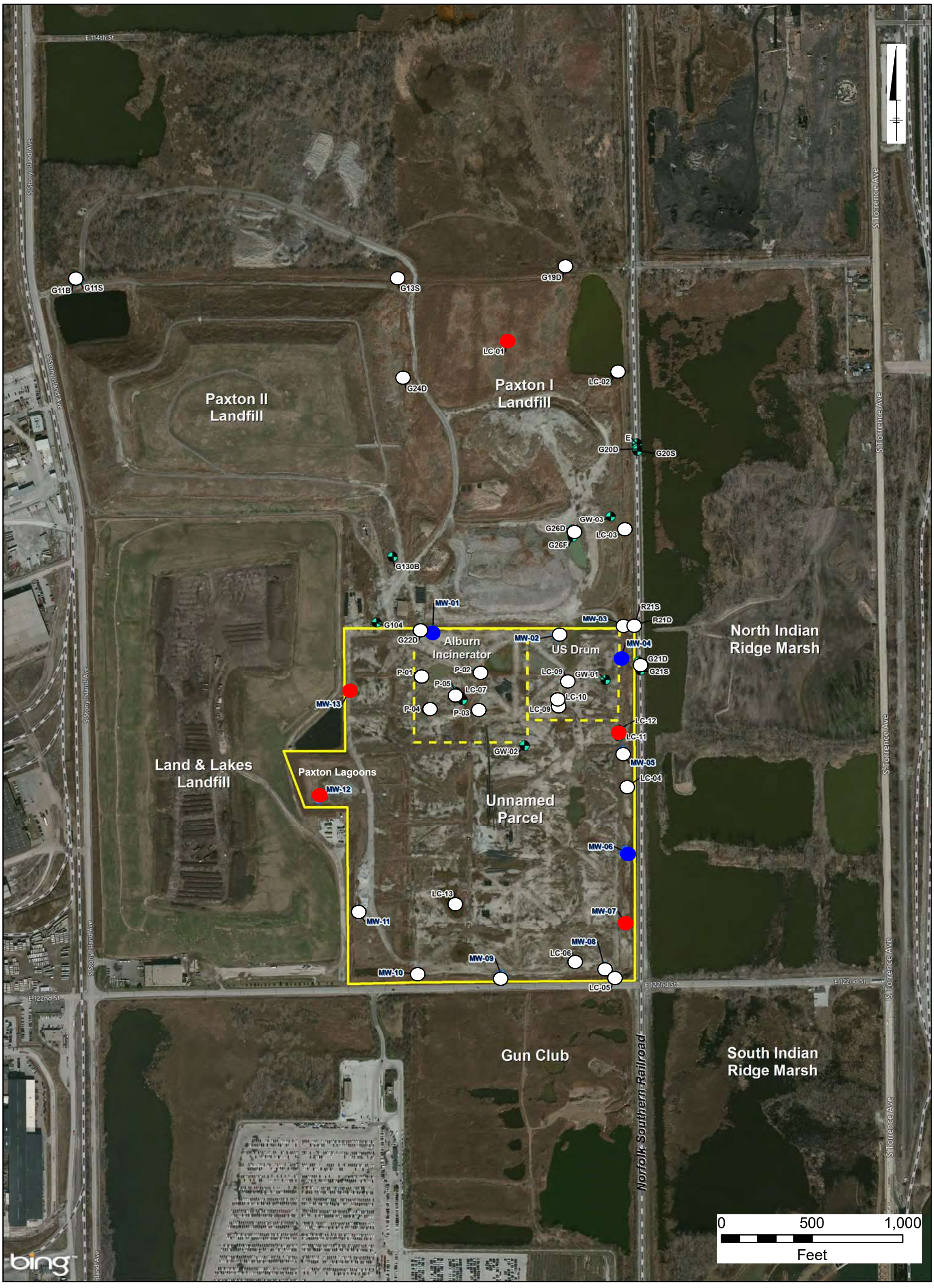
LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

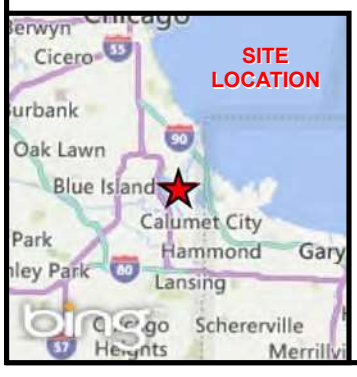
DISTRIBUTION OF BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENE

ARCADIS

FIGURE
17

City: CHI User: mgress
Path: Z:\GISProjects_ENV\LCCS\MXD\2017-06\LCCS_MWLocs_PrevMWs_20170628.mxd





LEGEND

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LAKE CALUMET CLUSTER SITE
CHICAGO, ILLINOIS

DISTRIBUTION OF VINYL CHLORIDE

ARCADIS

FIGURE
18

APPENDIX A

Indian Ridge Marsh Data Validation

Imagine the result

Indian Ridge Marsh

Data Review

CHICAGO, ILLINOIS

Semivolatiles, Pesticides, PCBs, Metals, AVS/SEM
and Miscellaneous Analyses

SDG#C9D090311 and C9F100120

Analyses Performed By:
TestAmerica Laboratories
Pittsburgh, Pennsylvania

Report: #23445R
Review Level: Tier III
Project: CI001805.0001.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # C9D090311 and C9F100120 for samples collected in association with the Indian Ridge Marsh Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						SVOC	AVS/ SEM	PEST/ PCB	MET	MISC
C9D090311	SD-01 04082009	C9D090311001	Sediment	4/8/2009			X			
	SD-02 04082009	C9D090311002	Sediment	4/8/2009		X	X	X		X
	SD-03 04082009	C9D090311003	Sediment	4/8/2009			X			
	SD-04 04082009	C9D090311004	Sediment	4/8/2009			X			
	SD-05 04082009	C9D090311005	Sediment	4/8/2009			X			
	SD-06 04082009	C9D090311006	Sediment	4/8/2009		X	X	X	X	X
	SW-01 04082009	C9D090311007	Water	4/8/2009					X	X
	SW-02 04082009	C9D090311008	Water	4/8/2009					X	X
	SW-03 04082009	C9D090311009	Water	4/8/2009					X	X
	SW-04 04082009	C9D090311010	Water	4/8/2009					X	X
	SW-05 04082009	C9D090311011	Water	4/8/2009					X	X
	SW-06 04082009	C9D090311012	Water	4/8/2009					X	X
C9F100120	SD-02 04082009	C9F100120001	Sediment	4/8/2009					*X*	
	SD-06 04082009	C9F100120002	Sediment	4/8/2009					*X*	

Note:

1. Miscellaneous analyses for surface waters include Ammonia-Nitrogen and Hardness.
2. Miscellaneous analyses for sediment samples include TOC.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8270C, 8082A and 8081A. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 and professional judgement.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMI-VOLATILE VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
SD-02 04082009 SD-06 04082009	CCV %D	2,2'-Oxybis(1-chloropropane)	21.6%
		Atrazine	-25.9%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SD-02 04082009 SD-06 04082009	Hexachloroethene	AC	<LL but >10%

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Please note: The MS/MSD was spiked with a subset list of the compounds that were analyzed and reported for client samples. Although not a SW-846 method requirement, the current industry standard is to include all target compounds in the MS/MSD spiking standard. This had no impact on the data usability; therefore, the data were not qualified.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

Please note: The LCS was spiked with a subset list of the compounds that were analyzed and reported for client samples. Although not a SW-846 method requirement, the current industry standard is to include all target compounds in the LCS spiking standard. This had no impact on the data usability; therefore, the data were not qualified.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included with this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-02	13.2%
SD-06	10.2%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X	X		
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

The instrument performance checks are performed to ensure adequate resolution and instrument sensitivity.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. pesticide analysis requires that one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SD-02 SD-06	Tetrachloro-m-xylene	D
	Decachlorobiphenyl	D

Diluted (D)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	J[1]
	Detect	

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The laboratory noted “Due to the concentration of the target compounds detected and/or matrix, the samples were analyzed at a dilution.” Since the MS/MSD analysis was performed at a 25-fold dilution, the

matrix spike compounds were diluted out; therefore, the percent recoveries associated with the MS/MSD analysis were not evaluated.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

Please note: The LCS was spiked with a subset list of the compounds that were analyzed and reported for client samples. Although not a SW-846 method requirement, the current industry standard is to include all target compounds in the LCS spiking standard. This had no impact on the data usability; therefore, the data were not qualified.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included with this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

The column %D was within control limits for detected all detected compounds.

10. System Performance and Overall Assessment

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-02	13.2%
SD-06	10.2%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

Pesticides; SW-846 8081	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column %D $\leq$ 40% (If dual column is performed for reporting-not confirmation)		X		X	
Dilution Factor		X		X	
Moisture Content		X	X		
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% for each peak is allowed. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All peaks associated with the opening continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%). The closing continuing calibration standard must exhibit a %D less than the control limit (50%)

All Aroclors associated with calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
SD-02 SD-06	CCV %D	Aroclor 1016	26.8%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 20%or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D >15% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >15% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires the surrogate compounds must exhibited recoveries within the method established acceptance limits.

All surrogate recoveries were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the method established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the method established acceptance limits.

> Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited recoveries within the control limits.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the method established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 35% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not performed on a sample within this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (%RPD) of detected sample results must be less than 40%.

The dual column analysis exhibited an acceptable %RPD between columns.

10. System Performance and Overall Assessment

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-02	13.2%
SD-06	10.2%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW-846 8082	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content		X	X		
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X	X		
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6020, 7470, 7471, EPA AVS/SEM, 350.1, SM 2340C and Lloyd Kahn. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004 and professional judgement.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

  J The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6020	Water	180 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
	Soil	180 days from collection to analysis	Cool to <6 °C.
SW-846 7470	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
SW-846 7471	Soil	28 days from collection to analysis	Cool to <6 °C.

The analyses that exceeded the holding time are presented in the following table.

Sample Locations	Holding Time	Criteria
SD-02 SD-06	64 Days	28 Days

Sample results associated with sample locations analyzed by analytical method Mercury by SW-846 7471 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ
Analysis completed greater than two times holding time	J	R

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SW-01 SW-02 SW-03 SW-06	Selenium	Detected sample results <RL and <BAL	"UB" at the RL
SW-04 SW-05	Thallium		
SD-06	Beryllium		

RL Reporting limit

The equipment blank contained low concentrations of certain metals; however it was not compared to sediment samples associated with this SDG since the equipment blank was collected on a different day.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard analysis are presented below in the CRDL standards evaluation table (if applicable).

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

A MS/MSD analysis was not performed on a sample location within this SDG.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate was not performed on a sample location within this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

A serial dilution analysis was not performed on a sample location within this SDG.

8. System Performance and Overall Assessment

The laboratory qualified detects above detection limit but less than reporting limit with a "B" qualifier; these results were flagged with "J" during validation.

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-02	13.2%
SD-06	10.2%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6000/7000	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
ICP Serial Dilution					X
Reporting Limit Verification		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard		X		X	
ICP Interference Check		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

SIMULTANEOUSLY EXTRACTED METALS (SEM) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA SEM 121/R-91-100	Solid	180 days to analysis	Cool to <6 °C.
		28 days to analysis	

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the IDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

A MS/MSD analysis was not performed on a sample location within this SDG.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate was not performed on a sample location within this SDG.

4. Field Duplicate Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil and sediment matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil and sediment matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

The laboratory qualified detects above detection limit but less than reporting limit with a “B” qualifier; these results were flagged with “J” during validation.

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-01	9.1%
SD-02	13.2%
SD-04	21.9%
SD-05	15.2%
SD-06	10.2%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SEM

SEM: EPA SEM 121/R-91-100	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP/MS)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X		X	
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Duplicate Sample		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Laboratory Duplicate Sample (RPD)					X
Field Duplicate Sample (RPD)					X
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard		X		X	
ICP Interference Check		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Organic Carbon by EPA Lloyd Kahn	Sediment	28 days from collection to analysis	Cooled @ <6°C.
Hardness by SM2340C	Water	6 months from collection to analysis	Cooled @ <6°C; preserved to a pH of less than 2.
Ammonia-N by EPA 350.1	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Acid Volatile Sulfide (AVS) by EPA AVS	Sediment	14 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (J). No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

A MS/MSD analysis was not performed on a sample location within this SDG.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

A field duplicate was not performed on a sample within this data set.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

The laboratory qualified detects above detection limit but less than reporting limit with a "B" qualifier; these results were flagged with "J" during validation.

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-01	9.1%
SD-02	13.2%
SD-04	21.9%
SD-05	15.2%
SD-06	10.2%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: Lloyd Kahn; SM2340C; EPA 350.1; EPA AVS	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
Lab Duplicate (RPD)		X		X	
Field Duplicate (RPD)					X
Dilution Factor		X		X	
Moisture Content		X	X		
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present				X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE:

DATE: April 21, 2015

PEER REVIEW: Dennis Capria

DATE: April 23, 2015

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

TAL-4124 (1007)

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client	Tetra Tech EMI
Address	1 S. Wacker
City	Chicago
State	IL
Zip Code	60606
Project Name and Location (State)	
Contract/Purchase Order/Quote No.	
Project Manager	Jack Brunner
Telephone Number (Area Code)/Fax Number	312-201-7778
Site Contact	
Lab Contact	
Carrier/Waybill Number	
Date	4/8/09
Chain of Custody Number	094671
Lab Number	
Page	_____ of _____

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): AVS/SEM	PCB/Pest	SVOC, TOC		Metals plus Fe, Ba, Mn, B, Hg	Total Ammonia	Hardness				Special Instructions/ Conditions of Receipt
SD-01	4/7/09	1430			X		X						X										
SD-02		1450			X		X						X	X	X								
SD-03		1515			X		X						X										
SD-04		1545			X		X						X										
SD-05		1600			X		X						X										
SD-06		1625			X		X						X	X	X								
SW-01		1430		X				X	X								X	X	X	X	X		
SW-02		1450		X				X	X								X	X	X	X	X		
SW-03		1515		X				X	X								X	X	X	X	X		
SW-04		1545		X				X	X								X	X	X	X	X		
SW-05		1600		X				X	X								X	X	X	X	X		
SW-06		1625		X				X	X								X	X	X	X	X		

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time
1. Relinquished By	4/8/09	1900
2. Relinquished By		
3. Relinquished By		

	Date	Time
1. Received By		
2. Received By		
3. Received By	4/9/9	1000

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Tetra Tech EM, Inc

Client Sample ID: SD-02

GC/MS Semivolatiles

Lot-Sample #...:	C9D090311-002	**Work Order #...:**	K9WLH1AC	**Matrix.....:**	SOLID
Date Sampled...:	04/08/09	**Date Received..:**	04/09/09	**MS Run #.....:**	9111019
Prep Date.....:	04/21/09	**Analysis Date..:**	04/23/09		
Prep Batch #...:	9111037	**Analysis Time..:**	22:04		
Dilution Factor:	2.5	**Initial Wgt/Vol:**	30 g	**Final Wgt/Vol..:**	5 mL
% Moisture.....:	87	**Analyst ID.....:**	403801	**Instrument ID..:**	732
		Method.....:	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	**470 J**	**1300**	**ug/kg**	**200**
Acenaphthylene	ND J	1300	ug/kg	250
Acetophenone	ND J	6300	ug/kg	290
Anthracene	**570 J**	**1300**	**ug/kg**	**220**
Atrazine	ND J	6300	ug/kg	300
Benzo(a)anthracene	**2400**	**1300**	**ug/kg**	**200**
Benzo(a)pyrene	**3700**	**1300**	**ug/kg**	**350**
Benzo(b)fluoranthene	**6400**	**1300**	**ug/kg**	**260**
Benzo(ghi)perylene	**2800**	**1300**	**ug/kg**	**93**
Benzo(k)fluoranthene	**2200**	**1300**	**ug/kg**	**260**
Benzaldehyde	ND	6300	ug/kg	170
1,1'-Biphenyl	ND	6300	ug/kg	290
bis(2-Chloroethoxy) methane	ND	6300	ug/kg	250
bis(2-Chloroethyl)-ether	ND	1300	ug/kg	110
bis(2-Ethylhexyl) phthalate	ND	6300	ug/kg	540
4-Bromophenyl phenyl ether	ND	6300	ug/kg	270
Butyl benzyl phthalate	ND	6300	ug/kg	440
Caprolactam	ND	32000	ug/kg	830
Carbazole	**270 J**	**1300**	**ug/kg**	**170**
4-Chloroaniline	ND J	6300	ug/kg	200
4-Chloro-3-methylphenol	ND	6300	ug/kg	190
2-Chloronaphthalene	ND	1300	ug/kg	170
2-Chlorophenol	ND	6300	ug/kg	190
4-Chlorophenyl phenyl ether	ND	6300	ug/kg	280
Chrysene	**3200**	**1300**	**ug/kg**	**220**
Dibenz(a,h)anthracene	**790 J**	**1300**	**ug/kg**	**280**
Dibenzofuran	**330 J**	**6300**	**ug/kg**	**210**
3,3'-Dichlorobenzidine	ND J	6300	ug/kg	1200
2,4-Dichlorophenol	ND	1300	ug/kg	260
Diethyl phthalate	ND	6300	ug/kg	360
2,4-Dimethylphenol	ND	6300	ug/kg	270
Dimethyl phthalate	ND	6300	ug/kg	210

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: SD-02

GC/MS Semivolatiles

Lot-Sample #...: C9D090311-002 **Work Order #...:** K9WLH1AC **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Di-n-butyl phthalate	ND J	6300	ug/kg	350
4,6-Dinitro-2-methylphenol	ND	32000	ug/kg	6100
2,4-Dinitrophenol	ND	32000	ug/kg	2000
2,4-Dinitrotoluene	ND	6300	ug/kg	300
2,6-Dinitrotoluene	ND	6300	ug/kg	320
Di-n-octyl phthalate	ND	6300	ug/kg	160
Fluoranthene	**3100**	**1300**	**ug/kg**	**110**
Fluorene	**400 J**	**1300**	**ug/kg**	**190**
Hexachlorobenzene	ND J	1300	ug/kg	240
Hexachlorobutadiene	ND	1300	ug/kg	270
Hexachlorocyclopentadiene	ND	6300	ug/kg	240
Hexachloroethane	ND	6300	ug/kg	210
Indeno(1,2,3-cd)pyrene	**2100**	**1300**	**ug/kg**	**70**
Isophorone	ND	6300	ug/kg	250
2-Methylnaphthalene	**610 J**	**1300**	**ug/kg**	**250**
2-Methylphenol	ND J	6300	ug/kg	230
4-Methylphenol	ND J	6300	ug/kg	280
Naphthalene	**900 J**	**1300**	**ug/kg**	**180**
2-Nitroaniline	ND J	32000	ug/kg	390
3-Nitroaniline	ND	32000	ug/kg	210
4-Nitroaniline	ND	32000	ug/kg	310
Nitrobenzene	ND	1300	ug/kg	320
2-Nitrophenol	ND	6300	ug/kg	240
4-Nitrophenol	ND	32000	ug/kg	3700
N-Nitrosodi-n-propylamine	ND	1300	ug/kg	350
N-Nitrosodiphenylamine	ND	1300	ug/kg	260
2,2'-oxybis(1-Chloropropane)	ND	1300	ug/kg	280
Pentachlorophenol	ND	6300	ug/kg	1100
Phenanthrene	**2100**	**1300**	**ug/kg**	**150**
Phenol	ND	1300	ug/kg	250
Pyrene	**3100**	**1300**	**ug/kg**	**340**
2,4,5-Trichlorophenol	ND	6300	ug/kg	160
2,4,6-Trichlorophenol	ND	6300	ug/kg	320

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: SD-02

GC/MS Semivolatiles

Lot-Sample #...: C9D090311-002 **Work Order #...:** K9WLH1AC **Matrix.....:** SOLID

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	52	(35 - 124)
2-Fluorobiphenyl	54	(35 - 105)
2-Fluorophenol	46	(39 - 103)
Nitrobenzene-d5	46	(25 - 104)
Phenol-d5	52	(25 - 105)
Terphenyl-d14	62	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SD-06

GC/MS Semivolatiles

Lot-Sample #...:	C9D090311-006	**Work Order #...:**	K9WLM1AC	**Matrix.....:**	SOLID
Date Sampled...:	04/08/09	**Date Received..:**	04/09/09	**MS Run #.....:**	9111019
Prep Date.....:	04/21/09	**Analysis Date..:**	04/23/09		
Prep Batch #...:	9111037	**Analysis Time..:**	21:04		
Dilution Factor:	2.5	**Initial Wgt/Vol:**	30 g	**Final Wgt/Vol..:**	5 mL
% Moisture.....:	90	**Analyst ID.....:**	403801	**Instrument ID..:**	732
		Method.....:	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND J	1600	ug/kg	260
Acenaphthylene	ND	1600	ug/kg	330
Acetophenone	ND	8100	ug/kg	380
Anthracene	ND	1600	ug/kg	290
Atrazine	ND	8100	ug/kg	390
Benzo(a)anthracene	**640 J**	**1600**	**ug/kg**	**260**
Benzo(a)pyrene	**590 J**	**1600**	**ug/kg**	**460**
Benzo(b)fluoranthene	**5800 J**	**1600**	**ug/kg**	**330**
Benzo(ghi)perylene	**500 J**	**1600**	**ug/kg**	**120**
Benzo(k)fluoranthene	**510 J**	**1600**	**ug/kg**	**340**
Benzaldehyde	ND J	8100	ug/kg	210
1,1'-Biphenyl	ND	8100	ug/kg	370
bis(2-Chloroethoxy) methane	ND	8100	ug/kg	330
bis(2-Chloroethyl)-ether	ND	1600	ug/kg	140
bis(2-Ethylhexyl) phthalate	ND	8100	ug/kg	690
4-Bromophenyl phenyl ether	ND	8100	ug/kg	350
Butyl benzyl phthalate	ND	8100	ug/kg	570
Caprolactam	ND	42000	ug/kg	1100
Carbazole	ND	1600	ug/kg	220
4-Chloroaniline	ND	8100	ug/kg	250
4-Chloro-3-methylphenol	ND	8100	ug/kg	240
2-Chloronaphthalene	ND	1600	ug/kg	220
2-Chlorophenol	ND	8100	ug/kg	250
4-Chlorophenyl phenyl ether	ND	8100	ug/kg	360
Chrysene	**650 J**	**1600**	**ug/kg**	**290**
Dibenz(a,h)anthracene	ND J	1600	ug/kg	360
Dibenzofuran	ND	8100	ug/kg	280
3,3'-Dichlorobenzidine	ND	8100	ug/kg	1500
2,4-Dichlorophenol	ND	1600	ug/kg	330
Diethyl phthalate	**500 J**	**8100**	**ug/kg**	**460**
2,4-Dimethylphenol	ND J	8100	ug/kg	340
Dimethyl phthalate	ND J	8100	ug/kg	280

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: SD-06

GC/MS Semivolatiles

Lot-Sample #...: C9D090311-006 **Work Order #...:** K9WLM1AC **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Di-n-butyl phthalate	ND J	8100	ug/kg	460
4,6-Dinitro-2-methylphenol	ND	42000	ug/kg	7900
2,4-Dinitrophenol	ND	42000	ug/kg	2600
2,4-Dinitrotoluene	ND	8100	ug/kg	380
2,6-Dinitrotoluene	ND	8100	ug/kg	420
Di-n-octyl phthalate	ND	8100	ug/kg	210
Fluoranthene	**900 J**	**1600**	**ug/kg**	**140**
Fluorene	ND J	1600	ug/kg	250
Hexachlorobenzene	ND	1600	ug/kg	310
Hexachlorobutadiene	ND	1600	ug/kg	350
Hexachlorocyclopentadiene	ND	8100	ug/kg	310
Hexachloroethane	ND	8100	ug/kg	280
Indeno(1,2,3-cd)pyrene	**370 J**	**1600**	**ug/kg**	**90**
Isophorone	ND J	8100	ug/kg	320
2-Methylnaphthalene	ND	1600	ug/kg	320
2-Methylphenol	ND	8100	ug/kg	300
4-Methylphenol	ND	8100	ug/kg	360
Naphthalene	ND	1600	ug/kg	240
2-Nitroaniline	ND	42000	ug/kg	500
3-Nitroaniline	ND	42000	ug/kg	270
4-Nitroaniline	ND	42000	ug/kg	400
Nitrobenzene	ND	1600	ug/kg	410
2-Nitrophenol	ND	8100	ug/kg	310
4-Nitrophenol	ND	42000	ug/kg	4800
N-Nitrosodi-n-propylamine	ND	1600	ug/kg	450
N-Nitrosodiphenylamine	ND	1600	ug/kg	340
2,2'-oxybis(1-Chloropropane)	ND	1600	ug/kg	360
Pentachlorophenol	ND	8100	ug/kg	1400
Phenanthrene	**460 J**	**1600**	**ug/kg**	**200**
Phenol	ND J	1600	ug/kg	330
Pyrene	**770 J**	**1600**	**ug/kg**	**440**
2,4,5-Trichlorophenol	ND J	8100	ug/kg	200
2,4,6-Trichlorophenol	ND J	8100	ug/kg	410

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: SD-06

GC/MS Semivolatiles

Lot-Sample #...: C9D090311-006 **Work Order #...:** K9WLM1AC **Matrix.....:** SOLID

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	55	(35 - 124)
2-Fluorobiphenyl	56	(35 - 105)
2-Fluorophenol	51	(39 - 103)
Nitrobenzene-d5	52	(25 - 104)
Phenol-d5	53	(25 - 105)
Terphenyl-d14	64	(25 - 127)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SD-02

GC Semivolatiles

Lot-Sample #...:	C9D090311-002	**Work Order #...:**	K9WLH1AD	**Matrix.....:**	SOLID
Date Sampled...:	04/08/09	**Date Received..:**	04/09/09	**MS Run #.....:**	9111020
Prep Date.....:	04/21/09	**Analysis Date..:**	04/23/09		
Prep Batch #...:	9111038	**Analysis Time..:**	19:26		
Dilution Factor:	25	**Initial Wgt/Vol:**	15 g	**Final Wgt/Vol..:**	10 mL
% Moisture.....:	87	**Analyst ID.....:**	402331	**Instrument ID..:**	C/D
		Method.....:	SW846 8081A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
alpha-BHC	ND J	320	ug/kg	48
beta-BHC	ND	320	ug/kg	37
delta-BHC	ND	320	ug/kg	33
gamma-BHC (Lindane)	ND	320	ug/kg	44
Heptachlor	ND	320	ug/kg	40
Aldrin	ND	320	ug/kg	34
Heptachlor epoxide	ND	320	ug/kg	32
Endosulfan I	ND	320	ug/kg	33
Dieldrin	ND	320	ug/kg	24
4,4'-DDE	ND	320	ug/kg	19
Endrin	ND	320	ug/kg	25
Endrin ketone	ND	320	ug/kg	37
Endrin aldehyde	ND	320	ug/kg	40
Endosulfan II	ND	320	ug/kg	73
4,4'-DDD	**970**	**320**	**ug/kg**	**28**
Endosulfan sulfate	ND	320	ug/kg	51
4,4'-DDT	ND	320	ug/kg	43
Methoxychlor	ND	630	ug/kg	130
alpha-Chlordane	ND	320	ug/kg	20
gamma-Chlordane	ND	320	ug/kg	32
Toxaphene	ND	13000	ug/kg	2200

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	NC,DIL	(45 - 130)
Decachlorobiphenyl	NC,DIL	(45 - 130)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Tetra Tech EM, Inc

Client Sample ID: SD-06

GC Semivolatiles

Lot-Sample #...:	C9D090311-006	**Work Order #...:**	K9WLM1AD	**Matrix.....:**	SOLID
Date Sampled...:	04/08/09	**Date Received..:**	04/09/09	**MS Run #.....:**	9111020
Prep Date.....:	04/21/09	**Analysis Date..:**	04/23/09		
Prep Batch #...:	9111038	**Analysis Time..:**	20:16		
Dilution Factor:	25	**Initial Wgt/Vol:**	15 g	**Final Wgt/Vol..:**	10 mL
% Moisture.....:	90	**Analyst ID.....:**	402331	**Instrument ID..:**	C/D
		Method.....:	SW846 8081A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
alpha-BHC	ND J	420	ug/kg	62
beta-BHC	ND	420	ug/kg	48
delta-BHC	ND	420	ug/kg	43
gamma-BHC (Lindane)	ND	420	ug/kg	57
Heptachlor	ND	420	ug/kg	52
Aldrin	ND	420	ug/kg	44
Heptachlor epoxide	ND	420	ug/kg	41
Endosulfan I	ND	420	ug/kg	43
Dieldrin	ND	420	ug/kg	30
4,4'-DDE	ND	420	ug/kg	25
Endrin	ND	420	ug/kg	33
Endrin ketone	ND	420	ug/kg	48
Endrin aldehyde	ND	420	ug/kg	52
Endosulfan II	ND	420	ug/kg	94
4,4'-DDD	ND	420	ug/kg	37
Endosulfan sulfate	ND	420	ug/kg	66
4,4'-DDT	ND	420	ug/kg	56
Methoxychlor	ND	810	ug/kg	170
alpha-Chlordane	ND	420	ug/kg	25
gamma-Chlordane	ND	420	ug/kg	42
Toxaphene	ND	16000	ug/kg	2800

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	NC,DIL	(45 - 130)
Decachlorobiphenyl	NC,DIL	(45 - 130)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

Tetra Tech EM, Inc

Client Sample ID: SD-02

GC Semivolatiles

Lot-Sample #...:	C9D090311-002	**Work Order #...:**	K9WLH1AE	**Matrix.....:**	SOLID
Date Sampled...:	04/08/09	**Date Received..:**	04/09/09	**MS Run #.....:**	9111021
Prep Date.....:	04/21/09	**Analysis Date..:**	04/27/09		
Prep Batch #...:	9111039	**Analysis Time..:**	18:59		
Dilution Factor:	0.5	**Initial Wgt/Vol:**	15 g	**Final Wgt/Vol..:**	10 mL
% Moisture.....:	87	**Analyst ID.....:**	001797	**Instrument ID..:**	S/T
		Method.....:	SW846 8082		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND J	63	ug/kg	9.4
Aroclor 1221	ND	63	ug/kg	12
Aroclor 1232	ND	63	ug/kg	11
Aroclor 1242	ND	63	ug/kg	10
Aroclor 1248	ND	63	ug/kg	6.0
Aroclor 1254	ND	63	ug/kg	9.0
Aroclor 1260	ND	63	ug/kg	9.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	100	(35 - 140)
Decachlorobiphenyl	95	(35 - 140)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech EM, Inc

Client Sample ID: SD-06

GC Semivolatiles

Lot-Sample #...:	C9D090311-006	**Work Order #...:**	K9WLM1AE	**Matrix.....:**	SOLID
Date Sampled...:	04/08/09	**Date Received..:**	04/09/09	**MS Run #.....:**	9111021
Prep Date.....:	04/21/09	**Analysis Date..:**	04/27/09		
Prep Batch #...:	9111039	**Analysis Time..:**	20:10		
Dilution Factor:	0.5	**Initial Wgt/Vol:**	15 g	**Final Wgt/Vol..:**	10 mL
% Moisture.....:	90	**Analyst ID.....:**	001797	**Instrument ID..:**	S/T
		Method.....:	SW846 8082		

PARAMETER	RESULT		REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	J	82	ug/kg	12
Aroclor 1221	ND		82	ug/kg	16
Aroclor 1232	ND		82	ug/kg	14
Aroclor 1242	ND		82	ug/kg	13
Aroclor 1248	ND		82	ug/kg	7.7
Aroclor 1254	ND		82	ug/kg	12
Aroclor 1260	ND		82	ug/kg	12

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	104	(35 - 140)
Decachlorobiphenyl	99	(35 - 140)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Tetra Tech EM, Inc

Client Sample ID: SD-01

TOTAL Metals

Lot-Sample #...: C9D090311-001
Date Sampled...: 04/08/09 Date Received..: 04/09/09 Matrix.....: SOLID
% Moisture.....: 91

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9120063						
Cadmium	**0.023** J	**0.012**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLF1AD**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.00040	
Copper	**0.97** ~~B~~ J	**22.1**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLF1AC**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0097	
Nickel	**0.27** J	**0.19**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLF1AF**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0054	
Lead	**1.1** J	**0.0080**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLF1AG**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0026	
Zinc	**12.4** J	**0.42**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLF1AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.031	
Prep Batch #...: 9120148						
Mercury	ND J	0.00069	umoles/gm	EPA SEM	04/30/09	K9WLF1AE
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 403938	
		Instrument ID..: HGHYDRA		MS Run #.....:	MDL.....: 0.000072	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SD-02

TOTAL Metals

Lot-Sample #...: C9D090311-002
Date Sampled...: 04/08/09 Date Received..: 04/09/09 Matrix.....: SOLID
% Moisture.....: 87

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9120063						
Cadmium	**0.026** J	**0.0084**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLH1AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.00027	
Copper	**1.0** ~~B~~ J	**15.3**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLH1AG**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0067	
Nickel	**0.25** J	**0.13**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLH1AK**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0037	
Lead	**1.4** J	**0.0055**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLH1AL**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0018	
Zinc	**13.8** J	**0.29**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLH1AM**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.021	
Prep Batch #...: 9120148						
Mercury	ND J	0.00047	umoles/gm	EPA SEM	04/30/09	K9WLH1AJ
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 403938	
		Instrument ID..: HGHYDRA		MS Run #.....:	MDL.....: 0.000049	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SD-03

TOTAL Metals

Lot-Sample #...: C9D090311-003
Date Sampled...: 04/08/09 **Date Received..:** 04/09/09
% Moisture.....: 66
Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9120063						
Cadmium	**0.0045**	**0.0033**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLJ1AD**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.00011	
Copper	**0.22** ~~B~~ J	**6.0**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLJ1AC**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0026	
Nickel	**0.099**	**0.051**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLJ1AF**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0015	
Lead	**0.14**	**0.0021**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLJ1AG**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.00071	
Zinc	**2.6**	**0.11**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLJ1AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0084	
Prep Batch #...: 9120148						
Mercury	ND	0.00018	umoles/gm	EPA SEM	04/30/09	K9WLJ1AE
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 403938	
		Instrument ID..: HGHYDRA		MS Run #.....:	MDL.....: 0.000019	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SD-04

TOTAL Metals

Lot-Sample #...: C9D090311-004
Date Sampled...: 04/08/09 Date Received..: 04/09/09 Matrix.....: SOLID
% Moisture.....: 78

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9120063						
Cadmium	**0.0097** J	**0.0051**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLK1AD**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.00016	
Copper	**0.62** ~~B~~ J	**9.2**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLK1AC**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0040	
Nickel	**0.32** J	**0.078**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLK1AF**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0022	
Lead	**0.34** J	**0.0033**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLK1AG**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0011	
Zinc	**5.1** J	**0.17**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLK1AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.013	
Prep Batch #...: 9120148						
Mercury	ND J	0.00028	umoles/gm	EPA SEM	04/30/09	K9WLK1AE
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 403938	
		Instrument ID..: HGHYDRA		MS Run #.....:	MDL.....: 0.000030	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SD-05

TOTAL Metals

Lot-Sample #...: C9D090311-005
Date Sampled...: 04/08/09 Date Received..: 04/09/09 Matrix.....: SOLID
% Moisture.....: 85

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9120063						
Cadmium	0.0099 J	0.0073	umoles/gm	EPA SEM	04/30-05/01/09	K9WLL1AD
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.00024	
Copper	0.61 ~~B~~ J	13.2	umoles/gm	EPA SEM	04/30-05/01/09	K9WLL1AC
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0058	
Nickel	0.26 J	0.11	umoles/gm	EPA SEM	04/30-05/01/09	K9WLL1AF
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0032	
Lead	0.34 J	0.0048	umoles/gm	EPA SEM	04/30-05/01/09	K9WLL1AG
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0016	
Zinc	6.0 J	0.25	umoles/gm	EPA SEM	04/30-05/01/09	K9WLL1AH
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.019	
Prep Batch #...: 9120148						
Mercury	ND J	0.00041	umoles/gm	EPA SEM	04/30/09	K9WLL1AE
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 403938	
		Instrument ID..: HGHYDRA		MS Run #.....:	MDL.....: 0.000043	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SD-06

TOTAL Metals

Lot-Sample #...: C9D090311-006
Date Sampled...: 04/08/09 Date Received..: 04/09/09 Matrix.....: SOLID
% Moisture.....: 90

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9120063						
Cadmium	**0.015** J	**0.011**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLM1AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.00035	
Copper	**0.71** ~~B~~ J	**19.7**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLM1AG**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0087	
Nickel	**0.21** J	**0.17**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLM1AK**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0048	
Lead	**0.64** J	**0.0071**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLM1AL**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.0023	
Zinc	**9.3** J	**0.38**	**umoles/gm**	**EPA SEM**	**04/30-05/01/09**	**K9WLM1AM**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....:	MDL.....: 0.028	
Prep Batch #...: 9120148						
Mercury	ND J	0.00061	umoles/gm	EPA SEM	04/30/09	K9WLM1AJ
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 403938	
		Instrument ID..: HGHYDRA		MS Run #.....:	MDL.....: 0.000064	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-01

TOTAL Metals

Lot-Sample #...: C9D090311-007
Date Sampled...: 04/08/09 **Date Received..:** 04/09/09 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AD
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**2.4**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WLN1AE**
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**62.9**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WLN1AF**
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AG
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**298**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WLN1AH**
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AJ
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**4.9 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WLN1AK**
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**2.7 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WLN1AL**
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**2220**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WLN1AM**
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-01

TOTAL Metals

Lot-Sample #...: C9D090311-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	315	0.50	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AN
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	4.4	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AP
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	8.2	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AQ
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	0.90 ~~B~~ J	2.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AR
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	5.0 ~~1.4 B,J~~ UB	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AT
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	0.12 ~~B~~ J	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AU
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	22.4	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WLN1AV
		Dilution Factor: 1		Analysis Time..: 12:17	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9119027

Mercury	ND	0.20	ug/L	SW846 7470A	04/29/09	K9WLN1AW
		Dilution Factor: 1		Analysis Time..: 09:29	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9119014	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-02

TOTAL Metals

Lot-Sample #...: C9D090311-008
Date Sampled...: 04/08/09 **Date Received..:** 04/09/09 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AD
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**1.6**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMJ1AE**
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**61.2**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMJ1AF**
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AG
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**299**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMJ1AH**
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AJ
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**5.5 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMJ1AK**
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**1.8 ~~B,J~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMJ1AL**
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**1970**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMJ1AM**
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-02

TOTAL Metals

Lot-Sample #...: C9D090311-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	312	0.50	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AN
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	3.8	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AP
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	7.1	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AQ
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	0.82 ~~B~~ J	2.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AR
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium 5.0	~~1.1 B,J~~ UB	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AT
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	0.074 ~~B~~ J	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AU
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	19.6	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WMJ1AV
		Dilution Factor: 1		Analysis Time..: 12:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9119027

Mercury	ND	0.20	ug/L	SW846 7470A	04/29/09	K9WMJ1AW
		Dilution Factor: 1		Analysis Time..: 09:31	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9119014	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-03

TOTAL Metals

Lot-Sample #...: C9D090311-009
Date Sampled...: 04/08/09 Date Received..: 04/09/09 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AD
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**1.9**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMK1AE**
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**57.4**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMK1AF**
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AG
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**317**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMK1AH**
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AJ
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**5.3 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMK1AK**
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**1.6 ~~B,J~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMK1AL**
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**1270**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMK1AM**
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-03

TOTAL Metals

Lot-Sample #...: C9D090311-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	303	0.50	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AN
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	3.8	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AP
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	3.3	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AQ
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	0.71 ~~B~~ J	2.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AR
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	5.0 ~~1.2 B,J~~ UB	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AT
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	0.041 ~~B~~ J	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AU
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	9.5	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WMK1AV
		Dilution Factor: 1		Analysis Time..: 12:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9119027

Mercury	ND	0.20	ug/L	SW846 7470A	04/29/09	K9WMK1AW
		Dilution Factor: 1		Analysis Time..: 09:32	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9119014	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-04

TOTAL Metals

Lot-Sample #...: C9D090311-010 **Matrix.....:** WATER
Date Sampled...: 04/08/09 **Date Received..:** 04/09/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AD
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**2.1**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WML1AE**
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**66.4**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WML1AF**
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	**0.076 ~~B~~** J	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WML1AG**
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**334**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WML1AH**
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AJ
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**5.1 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WML1AK**
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**2.6 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WML1AL**
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**1810**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WML1AM**
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-04

TOTAL Metals

Lot-Sample #...: C9D090311-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	277	0.50	ug/L	SW846 6020	04/27-05/04/09	K9WML1AN
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	4.9	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AP
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	5.4	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AQ
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	1.5 ~~B~~ J	2.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AR
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	1.7 ~~B,J~~ J	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AT
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	1.0 ~~0.047 B~~ UB	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AU
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	13.9	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WML1AV
		Dilution Factor: 1		Analysis Time..: 12:44	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9119027

Mercury	ND	0.20	ug/L	SW846 7470A	04/29/09	K9WML1AW
		Dilution Factor: 1		Analysis Time..: 09:34	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9119014	MDL.....: 0.038	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SW-05

TOTAL Metals

Lot-Sample #...: C9D090311-011
Date Sampled...: 04/08/09 **Date Received..:** 04/09/09 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AD
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**1.4**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMM1AE**
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**69.9**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMM1AF**
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AG
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**372**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMM1AH**
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AJ
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**4.5 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMM1AK**
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**1.5 ~~B,J~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMM1AL**
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**1400**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMM1AM**
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-05

TOTAL Metals

Lot-Sample #...: C9D090311-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	244	0.50	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AN
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	4.1	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AP
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	3.9	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AQ
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	0.90 ~~B~~ J	2.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AR
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	1.4 ~~B,J~~ J	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AT
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	1.0 ~~0.020 B~~ UB	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AU
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	8.2	5.0	ug/L	SW846 6020	04/27-05/04/09	K9WMM1AV
		Dilution Factor: 1		Analysis Time..: 12:48	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9119027

Mercury	ND	0.20	ug/L	SW846 7470A	04/29/09	K9WMM1AW
		Dilution Factor: 1		Analysis Time..: 09:39	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9119014	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-06

TOTAL Metals

Lot-Sample #...: C9D090311-012 **Matrix.....:** WATER
Date Sampled...: 04/08/09 **Date Received..:** 04/09/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMP1AD
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**0.72 ~~B~~** J	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AE**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**72.6**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AF**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMP1AG
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**378**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AH**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMP1AJ
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**5.0 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AK**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**1.4 ~~B,J~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AL**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**937**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AM**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-06

TOTAL Metals

Lot-Sample #...: C9D090311-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**227**	**0.50**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AN**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	**3.8**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AP**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	**4.9**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AQ**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	**0.90 ~~B~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AR**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	5.0 **~~1.2 B,J~~** UB	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AT**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K9WMP1AU
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	**11.4**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K9WMP1AV**
		Dilution Factor: 1		Analysis Time..: 12:53	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9119027

Mercury	ND	0.20	ug/L	SW846 7470A	04/29/09	K9WMP1AW
		Dilution Factor: 1		Analysis Time..: 09:41	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9119014	MDL.....: 0.038	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

TetraTech Em IndianRidgeMarsh

Acid Volatile Sulfide

Lab Name: TESTAMERICA PITTSBURGH
Client Name: Tetra Tech EM, Inc
Matrix: SOLID

Method: EPA AVS
Lot Number: C9D090311

AMBIENT MICRO-MIDI ACID PURGE

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SD-01	C9D090311 001	K9WLF1AJ	377 J	umoles/g --	1.7	5.5	1	4/22/2009 - 4/23/2009 00:00	9112451
SD-02	C9D090311 002	K9WLH1AN	227 J	umoles/g --	1.2	3.8	1	4/22/2009 - 4/23/2009 00:00	9112451
SD-03	C9D090311 003	K9WLJ1AJ	51.5	umoles/g --	0.46	1.5	1	4/22/2009 - 4/23/2009 00:00	9112451
SD-04	C9D090311 004	K9WLK1AJ	87.9 J	umoles/g --	0.71	2.3	1	4/22/2009 - 4/23/2009 00:00	9112451
SD-05	C9D090311 005	K9WLL1AJ	J 99.1	umoles/g --	1.0	3.3	1	4/22/2009 - 4/23/2009 00:00	9112451
SD-06	C9D090311 006	K9WLM1AN	74.8 J	umoles/g --	1.5	4.9	1	4/22/2009 - 4/23/2009 00:00	9112451

TetraTech Em IndianRidgeMarsh

Hardness, as CaCO3

Lab Name: TESTAMERICA PITTSBURGH
Client Name: Tetra Tech EM, Inc
Matrix: WATER

Method: SM20 2340C
Lot Number: C9D090311

NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SW-01	C9D090311 007	K9WLN1AA	408	mg/L	3.1	10.0	2	5/5/2009 - 5/5/2009 00:00	9125460
SW-02	C9D090311 008	K9WMJ1AA	400	mg/L	3.1	10.0	2	5/5/2009 - 5/5/2009 00:00	9125460
SW-03	C9D090311 009	K9WMK1A	456	mg/L	3.1	10.0	2	5/5/2009 - 5/5/2009 00:00	9125460
SW-04	C9D090311 010	K9WML1AA	400	mg/L	3.1	10.0	2	5/5/2009 - 5/5/2009 00:00	9125460
SW-05	C9D090311 011	K9WMM1A	396	mg/L	3.1	10.0	2	5/5/2009 - 5/5/2009 00:00	9125460
SW-06	C9D090311 012	K9WMP1A	352	mg/L	3.1	10.0	2	5/5/2009 - 5/5/2009 00:00	9125460

TetraTech Em IndianRidgeMarsh

Ammonia Nitrogen

Lab Name: TESTAMERICA PITTSBURGH
Client Name: Tetra Tech EM, Inc
Matrix: WATER

Method: MCAWW 350.1
Lot Number: C9D090311

NPDES Distillation

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SW-01	C9D090311 007	K9WLN1AC	2.9 J	mg/L	0.016	0.10	1	4/30/2009 - 5/4/2009 00:00	9120033
SW-02	C9D090311 008	K9WMJ1AC	3.3 J	mg/L	0.016	0.10	1	4/30/2009 - 5/4/2009 00:00	9120033
SW-03	C9D090311 009	K9WMK1A	3.1 J	mg/L	0.016	0.10	1	4/30/2009 - 5/4/2009 00:00	9120033
SW-04	C9D090311 010	K9WML1AC	3.3 J	mg/L	0.016	0.10	1	4/30/2009 - 5/4/2009 00:00	9120033
SW-05	C9D090311 011	K9WMM1A	3.1 J	mg/L	0.016	0.10	1	4/30/2009 - 5/4/2009 00:00	9120033
SW-06	C9D090311 012	K9WMP1A	3.0 J	mg/L	0.016	0.10	1	4/30/2009 - 5/4/2009 00:00	9120033

TetraTech Em IndianRidgeMarsh

Percent Solids

Lab Name: TESTAMERICA PITTSBURGH
Client Name: Tetra Tech EM, Inc
Matrix: SOLID

Method: SM20 2540G
Lot Number: C9D090311

NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SD-01	C9D090311 001	K9WLF1AA	9.1	%	0.0	1.0	1	4/18/2009 - 4/19/2009 07:02	9108018
SD-02	C9D090311 002	K9WLH1AA	13.2	%	0.0	1.0	1	4/18/2009 - 4/19/2009 07:02	9108018
SD-03	C9D090311 003	K9WLJ1AA	33.7	%	0.0	1.0	1	4/18/2009 - 4/19/2009 07:02	9108018
SD-04	C9D090311 004	K9WLK1AA	21.9	%	0.0	1.0	1	4/18/2009 - 4/19/2009 07:02	9108018
SD-05	C9D090311 005	K9WLL1AA	15.2	%	0.0	1.0	1	4/18/2009 - 4/19/2009 07:02	9108018
SD-06	C9D090311 006	K9WLM1AA	10.2	%	0.0		1	4/18/2009 - 4/19/2009 07:02	9108018

TetraTech Em IndianRidgeMarsh

TOC

Lab Name:	TESTAMERICA PITTSBURGH	**Method:**	EPA Lloyd Kahn
Client Name:	Tetra Tech EM, Inc	**Lot Number:**	C9D090311
Matrix:	SOLID		

Total Organic Carbon by Lloyd Kahn

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SD-02	C9D090311 002	K9WLH1AF	111000	mg/kg	360	3150	0.83	4/19/2009 - 4/19/2009 00:00	9107132
SD-06	C9D090311 006	K9WLM1AF	329000	mg/kg	539	4720	0.96	4/19/2009 - 4/19/2009 00:00	9107132

Tetra Tech EM, Inc

Client Sample ID: SD-02

TOTAL Metals

Lot-Sample #...: C9F100120-001 **Matrix.....:** SOLID
Date Sampled...: 04/08/09 **Date Received..:** 04/09/09
% Moisture.....: 87

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9161585						
Zinc	**2190** J	**7.6**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AC**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.85	
Beryllium	**1.9** J	**1.5**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AD**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.057	
Nickel	**62.4**	**15.2**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AE**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 1.5	
Copper	**182**	**9.5**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AF**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 1.3	
Antimony	**4.5**	**3.8**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AG**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.62	
Arsenic	**34.9**	**3.8**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AH**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.85	
Cadmium	**9.0**	**1.9**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AJ**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.091	
Chromium	**157**	**1.9**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AK**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.32	
Lead	**689**	**1.1**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AL**
		Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.55	

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Tetra Tech EM, Inc

Client Sample ID: SD-02

TOTAL Metals

Lot-Sample #...: C9F100120-001 **Matrix.....:** SOLID

PARAMETER	RESULT		REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	**3.2**	J	**1.9**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AM**
			Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
			Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.79	
Silver	**3.2**		**1.9**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL1W1AN**
			Dilution Factor: 0.5		Analysis Time..: 23:48	Analyst ID.....: 400491	
			Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.22	
Thallium	ND		7.6	mg/kg	SW846 6010B	06/10-06/15/09	LEL1W1AP
			Dilution Factor: 1		Analysis Time..: 16:09	Analyst ID.....: 400491	
			Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 1.6	

Prep Batch #...: 9162032

Mercury	**0.71**	J	**0.13**	**mg/kg**	**SW846 7471A**	**06/11/09**	**LEL1W1AQ**
			Dilution Factor: 0.5		Analysis Time..: 09:16	Analyst ID.....: 031043	
			Instrument ID..: HGHYDRA		MS Run #.....: 9162021	MDL.....: 0.041	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SD-06

TOTAL Metals

Lot-Sample #...: C9F100120-002
Date Sampled...: 04/08/09 Date Received..: 04/09/09
% Moisture.....: 78
Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9161585						
Zinc	561 J	4.6	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AC
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.51	
Beryllium	0.63 ~~B,J~~ UBJ	0.91	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AD
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.034	
Nickel	22.4 J	9.1	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AE
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.88	
Copper	57.2	5.7	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AF
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.78	
Antimony	1.2 B	2.3	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AG
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.37	
Arsenic	8.8	2.3	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AH
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.51	
Cadmium	2.1	1.1	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AJ
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.055	
Chromium	36.8	1.1	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AK
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.19	
Lead	131	0.69	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AL
		Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
		Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.33	

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: SD-06

TOTAL Metals

Lot-Sample #...: C9F100120-002 **Matrix.....:** SOLID

PARAMETER	RESULT		REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	**1.7**	J	**1.1**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL111AM**
			Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
			Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.47	
Silver	**1.1**		**1.1**	**mg/kg**	**SW846 6010B**	**06/10-06/11/09**	**LEL111AN**
			Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
			Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.13	
Thallium	ND		2.3	mg/kg	SW846 6010B	06/10-06/11/09	LEL111AP
			Dilution Factor: 0.5		Analysis Time..: 23:43	Analyst ID.....: 400491	
			Instrument ID..: TRACEICP		MS Run #.....: 9161323	MDL.....: 0.47	

Prep Batch #...: 9162032

Mercury	**0.31**	J	**0.075**	**mg/kg**	**SW846 7471A**	**06/11/09**	**LEL111AQ**
			Dilution Factor: 0.5		Analysis Time..: 09:18	Analyst ID.....: 031043	
			Instrument ID..: HGHYDRA		MS Run #.....: 9162021	MDL.....: 0.025	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Imagine the result

Indian Ridge Marsh

Data Review

CHICAGO, ILLINOIS

Semivolatiles, Pesticides, PCBs, Metals, AVS/SEM
and Miscellaneous Analyses

SDG#C9D110102

Analyses Performed By:
TestAmerica Laboratories
Pittsburgh, Pennsylvania

Report: #23466R
Review Level: Tier III
Project: CI001805.0001.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # C9D110102 for samples collected in association with the Indian Ridge Marsh Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						SVOC	AVS/ SEM	PEST/ PCB	MET	MISC
C9D110102	SD-07 04092009	C9D110102001	Sediment	4/9/2009			X			
	SD-08 04092009	C9D110102002	Sediment	4/9/2009			X			
	SD-09 04092009	C9D110102003	Sediment	4/9/2009			X			
	SD-09D 04092009	C9D110102004	Sediment	4/9/2009	SD-09		X			
	SD-10 04092009	C9D110102005	Sediment	4/9/2009			X			
	SW-07 04092009	C9D110102006	Water	4/9/2009					X	X
	SW-08 04092009	C9D110102007	Water	4/9/2009					X	X
	SW-09 04092009	C9D110102008	Water	4/9/2009					X	X
	SW-09D 04092009	C9D110102009	Water	4/9/2009	SW-09				X	X
	SW-10 04092009	C9D110102010	Water	4/9/2009					X	X
	ER-1 04092009	C9D110102011	Water	4/9/2009		X		X	X	X

Note:

1. Miscellaneous analyses for surface waters include Ammonia-Nitrogen and Hardness.
2. Miscellaneous analyses for sediment samples include TOC.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8270C, 8082A and 8081A. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 and professional judgement.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMI-VOLATILE VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270C	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
ER-1 04092009	CCV %D	Benzaldehyde	-33.5%
		Atrazine	-28.9%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location within this SDG.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

Please note: The LCS was spiked with a subset list of the compounds that were analyzed and reported for client samples. Although not a SW-846 method requirement, the current industry standard is to include all target compounds in the LCS spiking standard. This had no impact on the data usability; therefore, the data were not qualified.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included for this parameter.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X	X		
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

The instrument performance checks are performed to ensure adequate resolution and instrument sensitivity.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. pesticide analysis requires that one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD analysis was not performed on a sample location within this SDG.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

Please note: The LCS was spiked with a subset list of the compounds that were analyzed and reported for client samples. Although not a SW-846 method requirement, the current industry standard is to include all target compounds in the LCS spiking standard. This had no impact on the data usability; therefore, the data were not qualified.
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8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included for this parameter.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

The column %D was within control limits for detected all detected compounds.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

Pesticides; SW-846 8081	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column %D $\leq$ 40% (If dual column is performed for reporting-not confirmation)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% for each peak is allowed. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All peaks associated with the opening continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%). The closing continuing calibration standard must exhibit a %D less than the control limit (50%)

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires the surrogate compounds must exhibited recoveries within the method established acceptance limits.

All surrogate recoveries were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the method established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the method established acceptance limits.

> Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited recoveries within the control limits.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the method established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 35% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included for this parameter.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (%RPD) of detected sample results must be less than 40%.

The dual column analysis exhibited an acceptable %RPD between columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW-846 8082	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6020, 7470, EPA AVS/SEM, 350.1 and SM 2340C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004 and professional judgement.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

  J The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6020	Water	180 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
	Soil	180 days from collection to analysis	Cool to <6 °C.
SW-846 7470	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
SW-846 7471	Soil	28 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SW-08	Selenium Antimony	Detected sample results <RL and <BAL	"UB" at the RL
SW-09	Selenium		
SW-09D	Selenium Thallium		
SW-10	Copper Thallium		
SW-07	Thallium		

RL Reporting limit

The equipment blank contained low concentrations of certain metals; however, it was not compared to sediment sample results since the sediments analyzed for total metals were collected on a different day.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard analysis are presented below in the CRDL standards evaluation table (if applicable).

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis exhibited recoveries and RPD within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate was not performed on a sample location within this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SD-09 04092009/ SD-09W 04092009	Arsenic	1.7	0.91 B	AC
	Barium	34.7	33.7	2.9%
	Boron	50.0	45.7	AC
	Chromium	3.8 B	5.1	AC
	Copper	1.6 B	1.6 B	AC
	Iron	558	569	2.0%
	Manganese	131	128	2.3%
	Nickel	1.1	1.3	16.7%
	Lead	6.4	6.2	3.2%
	Antimony	1.1 B	1.1 B	AC
	Thallium	0.14 B	0.092 B	AC
	Zinc	10.7	11.4	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The sample locations associated with the deviant %D are also presented in the following table.

Sample Locations	Analytes	Serial Dilution (%D)
SW-08	Zinc	10.4%

The criteria used to evaluate the serial dilution are presented in the following table. In the case of a serial dilution deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. System Performance and Overall Assessment

The laboratory qualified detects above detection limit but less than reporting limit with a “B” qualifier; these results were flagged with “J” during validation.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6000/7000	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
ICP Serial Dilution		X	X		
Reporting Limit Verification		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard		X		X	
ICP Interference Check		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

SIMULTANEOUSLY EXTRACTED METALS (SEM) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
EPA SEM 121/R-91-100	Solid	180 days to analysis	Cool to <6 °C.
		28 days to analysis	

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the IDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
SD-08 04092009	Mercury	138%	136%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate was not performed on a sample location within this SDG.

4. Field Duplicate Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil and sediment matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil and sediment matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SD-09 04092009/ SD-09D 04092009	Cadmium	0.024	0.028	AC
	Copper	1.0 B	1.1 B	AC
	Nickel	0.34	0.36	AC
	Lead	1.4	1.7	19.4%
	Zinc	9.8	10.6	7.8%
	Mercury	0.00046 U	0.00046 U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

The laboratory qualified detects above detection limit but less than reporting limit with a “B” qualifier; these results were flagged with “J” during validation.

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-07	9.9%
SD-08	11.0%
SD-09	13.6%
SD-09D	13.6%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SEM

SEM: EPA SEM 121/R-91-100	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP/MS)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X		X	
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Duplicate Sample		X		X	
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample (RPD)					X
Field Duplicate Sample (RPD)		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard		X		X	
ICP Interference Check		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Hardness by SM2340C	Water	6 months from collection to analysis	Cooled @ <6°C; preserved to a pH of less than 2.
Ammonia-N by EPA 350.1	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Acid Volatile Sulfide (AVS) by EPA AVS	Sediment	14 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS/MSD analysis exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SD-09 04092009/ SD-09D 04092009	AVS	50.6	53.4	5.4%
SD-09 04092009/ SD-09W 04092009	Hardness	128	126	1.6%
	Nitrogen as Ammonia	0.60 U	0.85 B	AC

AC Acceptable
NC Not compliant

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

The laboratory qualified detects above detection limit but less than reporting limit with a “B” qualifier; these results were flagged with “J” during validation.

The calculated %solids were acceptable with the exception of the sample location presented in the following table.

Sample Location	%Solids
SD-07	9.9%
SD-08	11.0%
SD-09	13.6%
SD-09D	13.6%

The criteria used to evaluate percent solids are presented in the following table. The qualifications are applied to the all sample results associated with sample location.

Sample Concentration	Sample Result	Qualification
Percent solids < 30%	Non-detect	UJ
	Detect	J

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: SM2340C; EPA 350.1; EPA AVS	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
Lab Duplicate (RPD)		X		X	
Field Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content		X	X		
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present				X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE:

DATE: April 21, 2015

PEER REVIEW: Dennis Capria

DATE: April 23, 2015

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

TAL-4124 (1007)

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client: Tetra Tech	Project Manager: Jack Brunner	Date: 4/9/09	Chain of Custody Number: 094672
Address: 1 S. Wacker 37TH Fl	Telephone Number (Area Code)/Fax Number: 312-201-7788	Lab Number	Page _____ of _____
City: Chicago; State: IL; Zip Code: 60606	Site Contact	Lab Contact	
Project Name and Location (State): Indian Ridge Marsh - Chicago	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	AVS/SEM	Metals plus Fe, Ba, Mn, B, Hg	Ammonia-Nitrogen	Hardness	PCB/Pest	SVOC	Special Instructions/ Conditions of Receipt
SD-07	4/9/09	0830			X		X						X						
SD-08		0940			X		X						X						MS/MSD
SD-09		1005			X		X						X						
SD-09D		1005			X		X						X						
SD-10		1040			X		X						X						
SW-07		0830		X				X	X					X	X	X	X	X	
SW-08		0940		X				X	X					X	X	X	X	X	MS/MSD
SW09		1005		X				X	X					X	X	X	X	X	
SW-09D		1005		X				X	X					X	X	X	X	X	
SW-10		1040		X				X	X					X	X	X	X	X	
ER-1		1400		X			5		1					X	X	X	X	X	X X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	4/9/09	1600	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By	4/10/9	945

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Tetra Tech EM, Inc

Client Sample ID: ER-1

GC/MS Semivolatiles

Lot-Sample #...:	C9D110102-011	**Work Order #...:**	K900P1AA	**Matrix.....:**	WATER
Date Sampled...:	04/09/09 14:00	**Date Received..:**	04/10/09 09:45	**MS Run #.....:**	
Prep Date.....:	04/16/09	**Analysis Date..:**	04/29/09		
Prep Batch #...:	9106283	**Analysis Time..:**	09:30		
Dilution Factor:	0.95	**Initial Wgt/Vol:**	1050 mL	**Final Wgt/Vol..:**	10 mL
Analyst ID.....:	003200	**Instrument ID..:**	731		
		Method.....:	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	1.9	ug/L	0.14
Acenaphthylene	ND	1.9	ug/L	0.080
Acetophenone	ND	9.5	ug/L	0.21
Anthracene	ND	1.9	ug/L	0.99
Atrazine	ND J	9.5	ug/L	0.19
Benzo(a)anthracene	ND	1.9	ug/L	0.17
Benzo(a)pyrene	ND	1.9	ug/L	0.11
Benzo(b)fluoranthene	ND	1.9	ug/L	0.15
Benzo(ghi)perylene	ND	1.9	ug/L	0.082
Benzo(k)fluoranthene	ND	1.9	ug/L	0.16
Benzaldehyde	**5.3 J**	**9.5**	**ug/L**	**0.48**
1,1'-Biphenyl	ND	9.5	ug/L	0.15
bis(2-Chloroethoxy) methane	ND	9.5	ug/L	0.13
bis(2-Chloroethyl)-ether	ND	1.9	ug/L	0.25
bis(2-Ethylhexyl) phthalate	ND	9.5	ug/L	0.44
4-Bromophenyl phenyl ether	ND	9.5	ug/L	0.18
Butyl benzyl phthalate	ND	9.5	ug/L	2.9
Caprolactam	ND	48	ug/L	6.9
Carbazole	ND	1.9	ug/L	0.13
4-Chloroaniline	ND	9.5	ug/L	1.0
4-Chloro-3-methylphenol	ND	9.5	ug/L	0.24
2-Chloronaphthalene	ND	1.9	ug/L	0.14
2-Chlorophenol	ND	9.5	ug/L	0.20
4-Chlorophenyl phenyl ether	ND	9.5	ug/L	0.099
Chrysene	ND	1.9	ug/L	0.10
Dibenz(a,h)anthracene	ND	1.9	ug/L	0.12
Dibenzofuran	ND	9.5	ug/L	0.18
3,3'-Dichlorobenzidine	ND	9.5	ug/L	0.34
2,4-Dichlorophenol	ND	1.9	ug/L	0.13
Diethyl phthalate	ND	9.5	ug/L	0.43
2,4-Dimethylphenol	ND	9.5	ug/L	0.076
Dimethyl phthalate	ND	9.5	ug/L	0.13

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: ER-1

GC/MS Semivolatiles

Lot-Sample #...: C9D110102-011 **Work Order #...:** K900P1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Di-n-butyl phthalate	ND	9.5	ug/L	0.28
4,6-Dinitro-2-methylphenol	ND	48	ug/L	7.4
2,4-Dinitrophenol	ND	48	ug/L	5.8
2,4-Dinitrotoluene	ND	9.5	ug/L	0.16
2,6-Dinitrotoluene	ND	9.5	ug/L	0.18
Di-n-octyl phthalate	ND	9.5	ug/L	0.15
Fluoranthene	ND	1.9	ug/L	0.095
Fluorene	ND	1.9	ug/L	0.094
Hexachlorobenzene	ND	1.9	ug/L	0.17
Hexachlorobutadiene	ND	1.9	ug/L	0.12
Hexachlorocyclopentadiene	ND	9.5	ug/L	0.11
Hexachloroethane	ND	9.5	ug/L	0.073
Indeno(1,2,3-cd)pyrene	ND	1.9	ug/L	0.15
Isophorone	ND	9.5	ug/L	0.27
2-Methylnaphthalene	ND	1.9	ug/L	0.15
2-Methylphenol	ND	9.5	ug/L	0.13
4-Methylphenol	ND	9.5	ug/L	0.17
Naphthalene	ND	1.9	ug/L	0.26
2-Nitroaniline	ND	48	ug/L	0.16
3-Nitroaniline	ND	48	ug/L	0.25
4-Nitroaniline	ND	48	ug/L	0.22
Nitrobenzene	ND	1.9	ug/L	0.17
2-Nitrophenol	ND	9.5	ug/L	0.13
4-Nitrophenol	ND	48	ug/L	6.7
N-Nitrosodi-n-propylamine	ND	1.9	ug/L	0.37
N-Nitrosodiphenylamine	ND	1.9	ug/L	0.46
2,2'-oxybis(1-Chloropropane)	ND	1.9	ug/L	0.33
Pentachlorophenol	ND	9.5	ug/L	1.8
Phenanthrene	ND	1.9	ug/L	0.27
Phenol	ND	1.9	ug/L	0.22
Pyrene	ND	1.9	ug/L	0.11
2,4,5-Trichlorophenol	ND	9.5	ug/L	0.14
2,4,6-Trichlorophenol	ND	9.5	ug/L	0.086

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: ER-1

GC/MS Semivolatiles

Lot-Sample #...: C9D110102-011 **Work Order #...:** K900P1AA **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4,6-Tribromophenol	79	(33 - 122)
2-Fluorobiphenyl	85	(35 - 108)
2-Fluorophenol	77	(26 - 100)
Nitrobenzene-d5	83	(37 - 104)
Phenol-d5	81	(30 - 102)
Terphenyl-d14	94	(25 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: ER-1

GC Semivolatiles

Lot-Sample #...:	C9D110102-011	**Work Order #...:**	K900P1AC	**Matrix.....:**	WATER
Date Sampled...:	04/09/09	**Date Received..:**	04/10/09	**MS Run #.....:**	9103239
Prep Date.....:	04/13/09	**Analysis Date..:**	04/15/09		
Prep Batch #...:	9103396	**Analysis Time..:**	21:04		
Dilution Factor:	0.94	**Initial Wgt/Vol:**	1060 mL	**Final Wgt/Vol..:**	40 mL
Analyst ID.....:	402331	**Instrument ID..:**	C/D		
		Method.....:	SW846 8081A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
alpha-BHC	ND	0.047	ug/L	0.014
beta-BHC	ND	0.047	ug/L	0.014
delta-BHC	ND	0.047	ug/L	0.0089
gamma-BHC (Lindane)	ND	0.047	ug/L	0.014
Heptachlor	ND	0.047	ug/L	0.013
Aldrin	ND	0.047	ug/L	0.010
Heptachlor epoxide	ND	0.047	ug/L	0.0093
Endosulfan I	ND	0.047	ug/L	0.0070
Dieldrin	ND	0.047	ug/L	0.0075
4,4'-DDE	ND	0.047	ug/L	0.0064
Endrin	ND	0.047	ug/L	0.0072
Endrin ketone	ND	0.047	ug/L	0.0094
Endrin aldehyde	ND	0.047	ug/L	0.011
Endosulfan II	ND	0.047	ug/L	0.014
4,4'-DDD	ND	0.047	ug/L	0.0073
Endosulfan sulfate	ND	0.047	ug/L	0.015
4,4'-DDT	ND	0.047	ug/L	0.013
Methoxychlor	ND	0.094	ug/L	0.017
alpha-Chlordane	ND	0.047	ug/L	0.011
gamma-Chlordane	ND	0.047	ug/L	0.0071
Toxaphene	ND	1.9	ug/L	0.39

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	78	(45 - 130)
Decachlorobiphenyl	99	(45 - 130)

Tetra Tech EM, Inc

Client Sample ID: ER-1

GC Semivolatiles

Lot-Sample #...:	C9D110102-011	**Work Order #...:**	K900P1AD	**Matrix.....:**	WATER
Date Sampled...:	04/09/09	**Date Received..:**	04/10/09	**MS Run #.....:**	
Prep Date.....:	04/13/09	**Analysis Date..:**	04/16/09		
Prep Batch #...:	9103400	**Analysis Time..:**	20:57		
Dilution Factor:	0.94	**Initial Wgt/Vol:**	1060 mL	**Final Wgt/Vol..:**	40 mL
Analyst ID.....:	402360	**Instrument ID..:**	S/T		
		Method.....:	SW846 8082		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	0.38	ug/L	0.095
Aroclor 1221	ND	0.38	ug/L	0.094
Aroclor 1232	ND	0.38	ug/L	0.11
Aroclor 1242	ND	0.38	ug/L	0.070
Aroclor 1248	ND	0.38	ug/L	0.085
Aroclor 1254	ND	0.38	ug/L	0.086
Aroclor 1260	ND	0.38	ug/L	0.051

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	107	(35 - 140)
Decachlorobiphenyl	116	(35 - 140)

Tetra Tech EM, Inc

Client Sample ID: SD-07

TOTAL Metals

Lot-Sample #...: C9D110102-001 **Matrix.....:** SOLID
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09
% Moisture.....: 90

PARAMETER	RESULT		REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9121031							
Cadmium	0.014	J	0.011	umoles/gm	EPA SEM	05/01-05/06/09	K90X51AD
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.00036	
Copper	0.79 ~~B,J~~		20.2	umoles/gm	EPA SEM	05/01-05/06/09	K90X51AC
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0089	
Nickel	0.27		0.17	umoles/gm	EPA SEM	05/01-05/06/09	K90X51AF
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0049	
Lead	0.61		0.0073	umoles/gm	EPA SEM	05/01-05/06/09	K90X51AG
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0024	
Zinc	8.6 ~~J~~		0.38	umoles/gm	EPA SEM	05/01-05/06/09	K90X51AH
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.028	
Prep Batch #...: 9124023							
Mercury	ND	J	0.00063	umoles/gm	EPA SEM	05/04/09	K90X51AE
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 031043	
			Instrument ID..: HGHYDRA		MS Run #.....: 9124014	MDL.....: 0.000065	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SD-08

TOTAL Metals

Lot-Sample #...: C9D110102-002 **Matrix.....:** SOLID
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09
% Moisture.....: 89

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9121031						
Cadmium	**0.035** J	**0.010**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X71AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.00033	
Copper	**1.4** ~~B,J~~	**18.2**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X71AE**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0080	
Nickel	**0.39**	**0.15**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X71AP**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0044	
Lead	**1.8**	**0.0066**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X71AT**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0022	
Zinc	**16.4** ~~J~~	**0.35**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X71AW**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.026	
Prep Batch #...: 9124023						
Mercury	ND J	0.00056	umoles/gm	EPA SEM	05/04/09	K90X71AL
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9124014	MDL.....: 0.000059	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SD-09

TOTAL Metals

Lot-Sample #...: C9D110102-003 **Matrix.....:** SOLID
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09
% Moisture.....: 86

PARAMETER	RESULT		REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9121031							
Cadmium	**0.024**	J	**0.0082**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X91AD**
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.00027	
Copper	**1.0** ~~**B,J**~~		**14.8**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X91AC**
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0065	
Nickel	**0.34**		**0.13**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X91AF**
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0036	
Lead	**1.4**		**0.0053**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X91AG**
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0018	
Zinc	**9.8** ~~**J**~~		**0.28**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K90X91AH**
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
			Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.021	
Prep Batch #...: 9124023							
Mercury	ND	J	0.00046	umoles/gm	EPA SEM	05/04/09	K90X91AE
			Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 031043	
			Instrument ID..: HGHYDRA		MS Run #.....: 9124014	MDL.....: 0.000048	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SD-09D

TOTAL Metals

Lot-Sample #...: C9D110102-004 **Matrix.....:** SOLID
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09
% Moisture.....: 86

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9121031						
Cadmium	**0.028** J	**0.0082**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900C1AD**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.00027	
Copper	**1.1** ~~B,J~~	**14.8**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900C1AC**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0065	
Nickel	**0.36**	**0.13**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900C1AF**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0036	
Lead	**1.7**	**0.0053**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900C1AG**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0018	
Zinc	**10.6** ~~J~~	**0.28**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900C1AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.021	
Prep Batch #...: 9124023						
Mercury	ND J	0.00046	umoles/gm	EPA SEM	05/04/09	K900C1AE
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9124014	MDL.....: 0.000048	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SD-10

TOTAL Metals

Lot-Sample #...: C9D110102-005 **Matrix.....:** SOLID
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09
% Moisture.....: 25

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9121031						
Cadmium	**0.00066** ~~B~~ J	**0.0015**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900E1AD**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.000048	
Copper	**0.025** ~~B,J~~ J	**2.7**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900E1AC**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0012	
Nickel	**0.028**	**0.023**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900E1AF**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.00066	
Lead	**0.028**	**0.00097**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900E1AG**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.00032	
Zinc	**0.49** ~~J~~	**0.051**	**umoles/gm**	**EPA SEM**	**05/01-05/06/09**	**K900E1AH**
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 022952	
		Instrument ID..: TRACEICP		MS Run #.....: 9121018	MDL.....: 0.0038	
Prep Batch #...: 9124023						
Mercury	ND	0.000083	umoles/gm	EPA SEM	05/04/09	K900E1AE
		Dilution Factor: 1		Analysis Time..: 00:00	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9124014	MDL.....: 0.000008	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SW-07

TOTAL Metals

Lot-Sample #...: C9D110102-006 **Matrix.....:** WATER
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900G1AD
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**1.3**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AE**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**81.1**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AF**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900G1AG
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**423**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AH**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900G1AJ
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**6.5 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AK**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**2.4 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AL**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**1480**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AM**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-07

TOTAL Metals

Lot-Sample #...: C9D110102-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**291**	**0.50**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AN**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	**4.3**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AP**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	**6.9**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AQ**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	**0.92 ~~B~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AR**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	**1.6 ~~B,J~~** J	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AT**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	1.0 **~~0.020 B~~** UB	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AU**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	**19.3** J	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900G1AV**
		Dilution Factor: 1		Analysis Time..: 12:57	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9120031

Mercury	ND	0.20	ug/L	SW846 7470A	04/30/09	K900G1AW
		Dilution Factor: 1		Analysis Time..: 09:19	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9120021	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-08

TOTAL Metals

Lot-Sample #...: C9D110102-007 **Matrix.....:** WATER
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900K1AH
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**1.4**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1AL**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**55.0**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1AP**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900K1AT
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**52.7**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1AW**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900K1A1
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**5.3** ~~J~~	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1A4**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**1.9** ~~B,J~~ J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1A7**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**954**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1CA**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-08

TOTAL Metals

Lot-Sample #...: C9D110102-007 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**97.4**	**0.50**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1CE**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	**1.3**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1CH**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	**7.0**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1CL**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	2.0 ~~0.74 B~~ UB	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1CP**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	5.0 ~~0.61 B,J~~ UB	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1CT**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900K1CW
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	**21.2** J	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900K1C1**
		Dilution Factor: 1		Analysis Time..: 13:01	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9120031

Mercury	ND	0.20	ug/L	SW846 7470A	04/30/09	K900K1C4
		Dilution Factor: 1		Analysis Time..: 09:20	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9120021	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-09

TOTAL Metals

Lot-Sample #...: C9D110102-008 **Matrix.....:** WATER
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AD
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**1.7**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900L1AE**
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**34.7**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900L1AF**
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AG
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**50.0**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900L1AH**
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AJ
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**3.8 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900L1AK**
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**1.6 ~~B,J~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900L1AL**
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**558**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900L1AM**
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-09

TOTAL Metals

Lot-Sample #...: C9D110102-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	131	0.50	ug/L	SW846 6020	04/27-05/04/09	K900L1AN
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	1.1	1.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AP
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	6.4	1.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AQ
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	1.1 ~~B~~ J	2.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AR
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	5.0 ~~0.65 B,J~~ UB	5.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AT
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	0.14 ~~B~~ J	1.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AU
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	10.7 J	5.0	ug/L	SW846 6020	04/27-05/04/09	K900L1AV
		Dilution Factor: 1		Analysis Time..: 13:22	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9120031

Mercury	ND	0.20	ug/L	SW846 7470A	04/30/09	K900L1AW
		Dilution Factor: 1		Analysis Time..: 09:25	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9120021	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: SW-09D

TOTAL Metals

Lot-Sample #...: C9D110102-009 **Matrix.....:** WATER
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AD
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**0.91 ~~B~~** J	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900M1AE**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**33.7**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900M1AF**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AG
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**45.7**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900M1AH**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AJ
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**5.1 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900M1AK**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**1.6 ~~B,J~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900M1AL**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**569**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900M1AM**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-09D

TOTAL Metals

Lot-Sample #...: C9D110102-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	128	0.50	ug/L	SW846 6020	04/27-05/04/09	K900M1AN
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	1.3	1.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AP
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	6.2	1.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AQ
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	1.1 ~~B~~ J	2.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AR
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	5.0 ~~0.70 B,J~~ UB	5.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AT
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	1.0 ~~0.092 B~~ UB	1.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AU
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	11.4 J	5.0	ug/L	SW846 6020	04/27-05/04/09	K900M1AV
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9120031

Mercury	ND	0.20	ug/L	SW846 7470A	04/30/09	K900M1AW
		Dilution Factor: 1		Analysis Time..: 09:27	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9120021	MDL.....: 0.038	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: SW-10

TOTAL Metals

Lot-Sample #...: C9D110102-010
Date Sampled...: 04/09/09 Date Received..: 04/10/09 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900N1AD
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**1.3**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AE**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**75.4**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AF**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900N1AG
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**446**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AH**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900N1AJ
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**4.9 ~~J~~**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AK**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper 2.0	**~~1.1 B,J~~** UB	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AL**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**384**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AM**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: SW-10

TOTAL Metals

Lot-Sample #...: C9D110102-010 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**175**	**0.50**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AN**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	**3.5**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AP**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	**3.0**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AQ**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	**1.6 ~~B~~** J	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AR**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	**1.4 ~~B,J~~** J	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AT**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	1.0 **~~0.046 B~~** UB	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AU**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	**7.0** J	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900N1AV**
		Dilution Factor: 1		Analysis Time..: 13:45	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9120031

Mercury	ND	0.20	ug/L	SW846 7470A	04/30/09	K900N1AW
		Dilution Factor: 1		Analysis Time..: 09:29	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9120021	MDL.....: 0.038	

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Tetra Tech EM, Inc

Client Sample ID: ER-1

TOTAL Metals

Lot-Sample #...: C9D110102-011 **Matrix.....:** WATER
Date Sampled...: 04/09/09 **Date Received..:** 04/10/09

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9117204						
Silver	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900P1AG
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.077	
Arsenic	**0.52 ~~B~~ J**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AH**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Barium	**0.19 ~~B~~ J**	**10.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AJ**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.076	
Beryllium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900P1AK
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.068	
Boron	**5.3**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AL**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.42	
Cadmium	ND	1.0	ug/L	SW846 6020	04/27-05/04/09	K900P1AM
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Chromium	**4.6 J**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AN**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.11	
Copper	**4.2 J**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AP**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.14	
Iron	**856**	**50.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AQ**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 7.4	

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Tetra Tech EM, Inc

Client Sample ID: ER-1

TOTAL Metals

Lot-Sample #...: C9D110102-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**5.3**	**0.50**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AR**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Nickel	**26.1**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AT**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.073	
Lead	**0.077 ~~B~~ J**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AU**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.020	
Antimony	**0.18 ~~B~~ J**	**2.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AV**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.047	
Selenium	**0.43 ~~B~~,J**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AW**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.21	
Thallium	**0.029 ~~B~~ J**	**1.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1AX**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.018	
Zinc	**5.6**	**5.0**	**ug/L**	**SW846 6020**	**04/27-05/04/09**	**K900P1A0**
		Dilution Factor: 1		Analysis Time..: 13:49	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9117121	MDL.....: 0.60	

Prep Batch #...: 9120031

Mercury	ND	0.20	ug/L	SW846 7470A	04/30/09	K900P1A1
		Dilution Factor: 1		Analysis Time..: 09:30	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9120021	MDL.....: 0.038	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

TetraTech Em IndianRidgeMarsh

Acid Volatile Sulfide

Lab Name: TESTAMERICA PITTSBURGH
Client Name: Tetra Tech EM, Inc
Matrix: SOLID

Method: EPA AVS
Lot Number: C9D110102

AMBIENT MICRO-MIDI ACID PURGE

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SD-07	C9D110102 001	K90X51AJ	213 J	umoles/g --	1.6	5.0	1	4/23/2009 - 4/24/2009 00:00	9113350
SD-08	C9D110102 002	K90X71A1	72.4 J	umoles/g --	1.4	4.5	1	4/23/2009 - 4/24/2009 00:00	9113350
SD-09	C9D110102 003	K90X91AJ	50.6 J	umoles/g --	1.1	3.7	1	4/23/2009 - 4/24/2009 00:00	9113350
SD-09D	C9D110102 004	K900C1AJ	53.4 J	umoles/g --	1.1	3.7	1	4/23/2009 - 4/24/2009 00:00	9113350
SD-10	C9D110102 005	K900E1AJ	6.7	umoles/g --	0.21	0.67	1	4/23/2009 - 4/24/2009 00:00	9113350

TetraTech Em IndianRidgeMarsh

Hardness, as CaCO3

Lab Name: TESTAMERICA PITTSBURGH
Client Name: Tetra Tech EM, Inc
Matrix: WATER

Method: SM20 2340C
Lot Number: C9D110102

NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SW-07	C9D110102 006	K900G1AA	350	mg/L	7.7	25.0	5	5/12/2009 - 5/12/2009 00:00	9132290
SW-08	C9D110102 007	K900K1AA	122	mg/L	1.5	5.0	1	5/12/2009 - 5/12/2009 00:00	9132290
SW-09	C9D110102 008	K900L1AA	128	mg/L	1.5	5.0	1	5/12/2009 - 5/12/2009 00:00	9132290
SW-09D	C9D110102 009	K900M1AA	126	mg/L	1.5	5.0	1	5/12/2009 - 5/12/2009 00:00	9132290
SW-10	C9D110102 010	K900N1AA	340	mg/L	7.7	25.0	5	5/12/2009 - 5/12/2009 00:00	9132290
ER-1	C9D110102 011	K900P1AF	ND	mg/L	1.5	5.0	1	5/12/2009 - 5/12/2009 00:00	9132290

TetraTech Em IndianRidgeMarsh

Nitrogen, as Ammonia

Lab Name: TESTAMERICA NORTH CANTO
Client Name: Tetra Tech EM, Inc
Matrix: WATER

Method: SM18 4500 NH3 E
Lot Number: C9D110102

Distillation - 4500NH3B SM18

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SW-07	C9D110102 006	K900G1AX	4.5	mg/L	0.60	2.0	1	5/6/2009 - 5/6/2009 00:00	9126323
SW-08	C9D110102 007	K900K1C7	ND	mg/L	0.60	2.0	1	5/6/2009 - 5/6/2009 00:00	9126323
SW-09	C9D110102 008	K900L1AX	ND	mg/L	0.60	2.0	1	5/6/2009 - 5/6/2009 00:00	9126323
SW-09D	C9D110102 009	K900M1AX	0.85 ~~B~~ J	mg/L	0.60	2.0	1	5/6/2009 - 5/6/2009 00:00	9126323
SW-10	C9D110102 010	K900N1AX	3.4	mg/L	0.60	2.0	1	5/6/2009 - 5/6/2009 00:00	9126323
ER-1	C9D110102 011	K900P1A2	1.7 ~~B~~ J	mg/L	0.60	2.0	1	5/6/2009 - 5/6/2009 00:00	9126323

TetraTech Em IndianRidgeMarsh

Percent Solids

Lab Name: TESTAMERICA PITTSBURGH
Client Name: Tetra Tech EM, Inc
Matrix: SOLID

Method: SM20 2540G
Lot Number: C9D110102

NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION

Client Sample ID	Sample Number	Workorder	Result	Units	Min. Detection Limit	Reporting Limit	Dilution Factor	Prep Date - Analysis Date/Time	QC Batch
SD-07	C9D110102 001	K90X51AA	9.9	%	0.0		1	4/23/2009 - 4/24/2009 09:15	9113270
SD-08	C9D110102 002	K90X71AA	11.0	%	0.0		1	4/23/2009 - 4/24/2009 09:15	9113270
SD-09	C9D110102 003	K90X91AA	13.6	%	0.0		1	4/23/2009 - 4/24/2009 09:15	9113270
SD-09D	C9D110102 004	K900C1AA	13.6	%	0.0		1	4/23/2009 - 4/24/2009 09:15	9113270
SD-10	C9D110102 005	K900E1AA	74.7	%	0.0		1	4/23/2009 - 4/24/2009 09:15	9113270

Imagine the result

Indian Ridge Marsh

Data Review

CHICAGO, ILLINOIS

Metals Analysis

SDG#C9E160102 and C9F170216

Analyses Performed By:
TestAmerica Laboratories
Pittsburgh, Pennsylvania

Report: #23467R
Review Level: Tier III
Project: CI001805.0001.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # C9E160102 and C9F170216 for samples collected in association with the Indian Ridge Marsh Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						SVOC	AVS/ SEM	PEST/ PCB	MET	MISC
C9E160102	IRM-V-1 05142009	C9E160102001	Vegetation	05/14/2009					X	
	IRM-V-2 05142009	C9E160102002	Vegetation	05/14/2009					X	
	IRM-V-3 05142009	C9E160102003	Vegetation	05/14/2009					X	
	IRM-V-4 05142009	C9E160102004	Vegetation	05/14/2009					X	
C9F170216	IRM-V-1D 05142009	C9F170216001	Vegetation	05/14/2009					X	
	IRM-V-2D 05142009	C9F170216002	Vegetation	05/14/2009					X	
	IRM-V-3D 05142009	C9F170216003	Vegetation	05/14/2009					X	
	IRM-V-4D 05142009	C9F170216004	Vegetation	05/14/2009					X	

Note:

1. The samples with a “D” suffix are reanalyses of the original samples.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6020 and 7471. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004 and professional judgement.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

  J The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6020	Water	180 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
	Soil	180 days from collection to analysis	Cool to <6 °C.
SW-846 7470	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
SW-846 7471	Soil	28 days from collection to analysis	Cool to <6 °C.

The analyses that exceeded the holding time are presented in the following table.

Sample Locations	Holding Time	Criteria
IRM-V-1D 05142009 IRM-V-2D 05142009 IRM-V-3D 05142009 IRM-V-4D 05142009	41 Days	28 Days

Sample results associated with sample locations analyzed by analytical method SW-846 7471 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ

The laboratory noted the plant tissue samples were received at ambient temperature with no Ice. Based on professional judgment, there is no impact on the metals analyses and therefore, no qualification of the sample results was necessary, with the exception of mercury. Mercury tends to volatilize more readily; therefore, all results for mercury have been qualified as estimated (J).

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the

associated sample results to determine the appropriate qualification of the sample results, if needed.

Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
IRM-V-1 05142009 IRM-V-2 05142009 IRM-V-3 05142009 IRM-V-4 05142009 IRM-V-1D 05142009 IRM-V-2D 05142009 IRM-V-3D 05142009 IRM-V-4D 05142009	Thallium	Detected sample results <RL and <BAL	"UB" at the RL

RL Reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard analysis are presented below in the CRDL standards evaluation table (if applicable).

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis exhibited recoveries and RPD within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate was not performed on a sample location within this SDG.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution performed on sample location IRM-V-4 05142009 and IRM-V-4D 05142009 exhibited %D within the control limit.

8. System Performance and Overall Assessment

The laboratory qualified detects above detection limit but less than reporting limit with a “B” qualifier; these results were flagged with “J” during validation.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6000/7000	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
ICP Serial Dilution		X		X	
Reporting Limit Verification		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard		X		X	
ICP Interference Check		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference

VALIDATION PERFORMED BY: Jeffrey L. Davin

SIGNATURE:

DATE: April 22, 2015

PEER REVIEW: Dennis Capria

DATE: April 24, 2015

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

C9E160102

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: Tetra Tech EMI	Project Manager: Jack Brunner	Date: 5/14/09	Chain of Custody Number: 094673
Address: 1 S. Wacker 37TH Fl	Telephone Number (Area Code)/Fax Number: 312-201-7788		Lab Number:
City: Chicago; State: IL; Zip Code: 60606	Site Contact:	Lab Contact:	Page 1 of 1
Project Name and Location (State): Indian Ridge Marsh	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.: 82460			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Vog	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Metals (PPL) 6020	Mercury 7471A	Special Instructions/ Conditions of Receipt
IRM-V-1	5/14/09	1220					X	X						X	X	Please run duplicate + MS/MSD on sample(s) with adequate mass
IRM-V-2	↓	1245					X	X						X	X	
IRM-V-3		1300					X	X						X	X	
IRM-V-4		1315					X	X						X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	5/14/09	1400	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By: [signature]	5/15/9	1000

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Tetra Tech EM, Inc

Client Sample ID: IRM-V-1

TOTAL Metals

Lot-Sample #...: C9E160102-001 **Matrix.....:** BIOLOGIC
Date Sampled...: 05/14/09 **Date Received..:** 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9147550						
Zinc	**11.7**	**0.50**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AA**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68H1AC
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0037	
Nickel	**0.11**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AD**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0068	
Copper	**1.2**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AE**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0085	
Antimony	**0.030** ~~B~~ J	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AF**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0033	
Arsenic	**0.023** ~~B~~ J	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AG**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.016	
Cadmium	**0.031** ~~B~~ J	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AH**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0091	
Chromium	**0.28** ~~J~~	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AJ**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0080	
Lead	**0.36**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68H1AK**
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0034	

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: IRM-V-1

TOTAL Metals

Lot-Sample #...: C9E160102-001 Matrix.....: BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	0.066 ~~B~~ J	0.50	mg/kg	SW846 6020	05/27-05/30/09	LC68H1AL
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.041	
Silver	0.0038 ~~B~~ J	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68H1AM
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0024	
Thallium	0.10 ~~0.014 B,J~~ UB	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68H1AN
		Dilution Factor: 1		Analysis Time..: 01:55	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0020	

Prep Batch #...: 9148018

Mercury	ND	0.033	mg/kg	SW846 7471A	05/28/09	LC68H1AP
		Dilution Factor: 1		Analysis Time..: 08:30	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9148009	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: IRM-V-2

TOTAL Metals

Lot-Sample #...: C9E160102-002 Matrix.....: BIOLOGIC
Date Sampled...: 05/14/09 Date Received..: 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9147550						
Zinc	**9.5**	**0.50**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AA**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68J1AC
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0037	
Nickel	**0.17**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AD**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0068	
Copper	**2.0**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AE**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0085	
Antimony	**0.015 ~~B~~ J**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AF**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0033	
Arsenic	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68J1AG
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.016	
Cadmium	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68J1AH
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0091	
Chromium	**0.44 ~~J~~**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AJ**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0080	
Lead	**0.15**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AK**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0034	

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: IRM-V-2

TOTAL Metals

Lot-Sample #...: C9E160102-002 **Matrix.....:** BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	**0.062 ~~B~~ J**	**0.50**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AL**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.041	
Silver	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68J1AM
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0024	
Thallium	0.10 **~~0.0095 B,J~~** UB	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68J1AN**
		Dilution Factor: 1		Analysis Time..: 01:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0020	

Prep Batch #...: 9148018

Mercury	ND	0.033	mg/kg	SW846 7471A	05/28/09	LC68J1AP
		Dilution Factor: 1		Analysis Time..: 08:32	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9148009	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: IRM-V-3

TOTAL Metals

Lot-Sample #...: C9E160102-003 Matrix.....: BIOLOGIC
Date Sampled...: 05/14/09 Date Received..: 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9147550						
Zinc	**5.8**	**0.50**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AA**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68K1AC
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0037	
Nickel	**0.19**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AD**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0068	
Copper	**1.6**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AE**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0085	
Antimony	**0.0097 ~~B~~ J**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AF**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0033	
Arsenic	**0.023 ~~B~~ J**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AG**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.016	
Cadmium	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68K1AH
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0091	
Chromium	**0.27 ~~J~~**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AJ**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0080	
Lead	**0.10**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AK**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0034	

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Tetra Tech EM, Inc

Client Sample ID: IRM-V-3

TOTAL Metals

Lot-Sample #...: C9E160102-003 **Matrix.....:** BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	**0.081 ~~B~~**	**0.50**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AL**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.041	
Silver	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68K1AM
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0024	
Thallium 0.10	**~~0.0076 B,J~~** UB	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68K1AN**
		Dilution Factor: 1		Analysis Time..: 02:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0020	

Prep Batch #...: 9148018

Mercury	ND	0.033	mg/kg	SW846 7471A	05/28/09	LC68K1AP
		Dilution Factor: 1		Analysis Time..: 08:34	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9148009	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: IRM-V-4

TOTAL Metals

Lot-Sample #...: C9E160102-004 **Matrix.....:** BIOLOGIC
Date Sampled...: 05/14/09 **Date Received..:** 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9147550						
Zinc	**7.5**	**0.50**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1AA**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68L1AE
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0037	
Nickel	**0.18**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1AH**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0068	
Copper	**1.8**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1AL**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0085	
Antimony	**0.0084 ~~B~~ J**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1AP**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0033	
Arsenic	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68L1AT
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.016	
Cadmium	**0.015 ~~B~~ J**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1AW**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0091	
Chromium	**0.32 ~~J~~**	**0.20**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1A1**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0080	
Lead	**0.23**	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1A4**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0034	

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Tetra Tech EM, Inc

Client Sample ID: IRM-V-4

TOTAL Metals

Lot-Sample #...: C9E160102-004 **Matrix.....:** BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	ND	0.50	mg/kg	SW846 6020	05/27-05/30/09	LC68L1A7
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.041	
Silver	ND	0.10	mg/kg	SW846 6020	05/27-05/30/09	LC68L1CA
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0024	
Thallium	0.10 ~~0.0065 B,J~~ UB	**0.10**	**mg/kg**	**SW846 6020**	**05/27-05/30/09**	**LC68L1CE**
		Dilution Factor: 1		Analysis Time..: 02:07	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9147322	MDL.....: 0.0020	

Prep Batch #...: 9148018

Mercury	ND	0.033	mg/kg	SW846 7471A	05/28/09	LC68L1CH
		Dilution Factor: 1		Analysis Time..: 08:35	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9148009	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: IRM-V-1

TOTAL Metals

Lot-Sample #...: C9F170216-001 **Matrix.....:** BIOLOGIC
Date Sampled...: 05/14/09 **Date Received..:** 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9169116						
Zinc	**18.0**	**0.50**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AA**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KD1AC
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0037	
Nickel	**0.082 ~~B~~** J	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AD**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0068	
Copper	**1.3**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AE**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0085	
Antimony	**0.041 ~~B~~** J	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AF**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0033	
Arsenic	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KD1AG
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.016	
Cadmium	**0.035 ~~B~~** J	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AH**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0091	
Chromium	**0.29 ~~J~~**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AJ**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0080	
Lead	**0.63**	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AK**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0034	

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Tetra Tech EM, Inc

Client Sample ID: IRM-V-1

TOTAL Metals

Lot-Sample #...: C9F170216-001 **Matrix.....:** BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	**0.076 ~~B~~** J	**0.50**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AL**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.041	
Silver	**0.0047 ~~B~~** J	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AM**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0024	
Thallium 0.10	**~~0.011~~ ~~B,J~~** UB	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KD1AN**
		Dilution Factor: 1		Analysis Time..: 16:59	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0020	

Prep Batch #...: 9175014

Mercury	ND J	0.033	mg/kg	SW846 7471A	06/24/09	LE4KD1AP
		Dilution Factor: 1		Analysis Time..: 08:28	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9175006	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: IRM-V-2

TOTAL Metals

Lot-Sample #...: C9F170216-002 **Matrix.....:** BIOLOGIC
Date Sampled...: 05/14/09 **Date Received..:** 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9169116						
Zinc	**6.8**	**0.50**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AA**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KK1AC
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0037	
Nickel	**0.12**	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AD**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0068	
Copper	**1.5**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AE**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0085	
Antimony	**0.018 ~~B~~** J	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AF**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0033	
Arsenic	**0.039 ~~B~~** J	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AG**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.016	
Cadmium	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KK1AH
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0091	
Chromium	**0.31 ~~J~~**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AJ**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0080	
Lead	**0.14**	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AK**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0034	

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Tetra Tech EM, Inc

Client Sample ID: IRM-V-2

TOTAL Metals

Lot-Sample #...: C9F170216-002 **Matrix.....:** BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	**0.059** ~~B~~ J	**0.50**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AL**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.041	
Silver	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KK1AM
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0024	
Thallium 0.10	~~**0.0064**~~ ~~**B,J**~~ UB	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KK1AN**
		Dilution Factor: 1		Analysis Time..: 17:03	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0020	

Prep Batch #...: 9175014

Mercury	ND J	0.033	mg/kg	SW846 7471A	06/24/09	LE4KK1AP
		Dilution Factor: 1		Analysis Time..: 08:33	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9175006	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: IRM-V-3

TOTAL Metals

Lot-Sample #...: C9F170216-003 **Matrix.....:** BIOLOGIC
Date Sampled...: 05/14/09 **Date Received..:** 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9169116						
Zinc	**6.0**	**0.50**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AA**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KN1AC
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0037	
Nickel	**0.17**	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AD**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0068	
Copper	**1.7**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AE**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0085	
Antimony	**0.014 ~~B~~ J**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AF**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0033	
Arsenic	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KN1AG
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.016	
Cadmium	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KN1AH
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0091	
Chromium	**0.25 ~~J~~**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AJ**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0080	
Lead	**0.10**	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AK**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0034	

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Tetra Tech EM, Inc

Client Sample ID: IRM-V-3

TOTAL Metals

Lot-Sample #...: C9F170216-003 **Matrix.....:** BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	**0.053 ~~B~~** J	**0.50**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AL**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.041	
Silver	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KN1AM
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0024	
Thallium	0.10 **~~0.0068~~ ~~B,J~~** UB	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KN1AN**
		Dilution Factor: 1		Analysis Time..: 17:08	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0020	

Prep Batch #...: 9175014

Mercury	ND J	0.033	mg/kg	SW846 7471A	06/24/09	LE4KN1AP
		Dilution Factor: 1		Analysis Time..: 08:35	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9175006	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Tetra Tech EM, Inc

Client Sample ID: IRM-V-4

TOTAL Metals

Lot-Sample #...: C9F170216-004 **Matrix.....:** BIOLOGIC
Date Sampled...: 05/14/09 **Date Received..:** 05/15/09
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9169116						
Zinc	**8.4**	**0.50**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AA**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.012	
Beryllium	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KQ1AC
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0037	
Nickel	**0.11**	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AD**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0068	
Copper	**1.8**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AE**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0085	
Antimony	**0.013 ~~B~~** J	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AF**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0033	
Arsenic	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KQ1AG
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.016	
Cadmium	**0.016 ~~B~~** J	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AH**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0091	
Chromium	**0.30 ~~J~~**	**0.20**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AJ**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0080	
Lead	**0.23**	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AK**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0034	

(Continued on next page)

Tetra Tech EM, Inc

Client Sample ID: IRM-V-4

TOTAL Metals

Lot-Sample #...: C9F170216-004 **Matrix.....:** BIOLOGI

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	ND	0.50	mg/kg	SW846 6020	06/18-06/19/09	LE4KQ1AL
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.041	
Silver	ND	0.10	mg/kg	SW846 6020	06/18-06/19/09	LE4KQ1AM
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0024	
Thallium 0.10	~~**0.0064 B,J**~~ UB	**0.10**	**mg/kg**	**SW846 6020**	**06/18-06/19/09**	**LE4KQ1AN**
		Dilution Factor: 1		Analysis Time..: 17:12	Analyst ID.....: 400149	
		Instrument ID..: ICPMS2		MS Run #.....: 9169079	MDL.....: 0.0020	

Prep Batch #...: 9175014

Mercury	ND J	0.033	mg/kg	SW846 7471A	06/24/09	LE4KQ1AP
		Dilution Factor: 1		Analysis Time..: 08:37	Analyst ID.....: 031043	
		Instrument ID..: HGHYDRA		MS Run #.....: 9175006	MDL.....: 0.011	

NOTE(S):

B Estimated result. Result is less than RL.

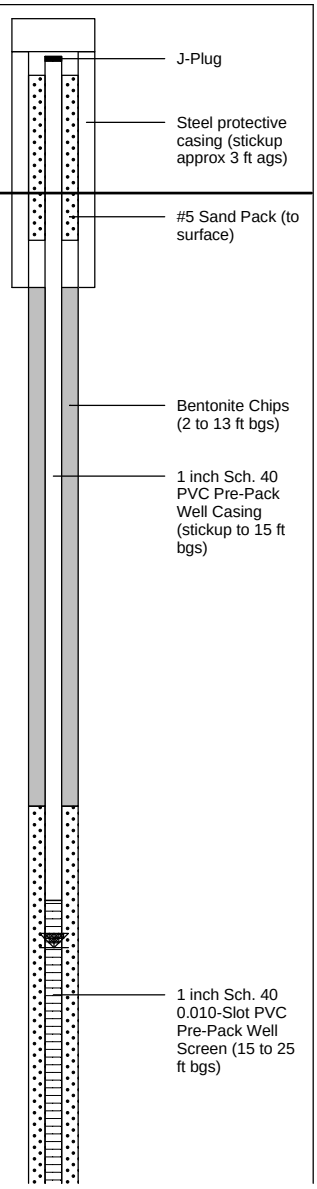
J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

APPENDIX B

Piezometer Boring Logs

Date Start/Finish: 10/05/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-1S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.7			ORGANICS: Grass and rootlets.
2		0-4	3.3				SILTY CLAY and SAND (FILL): very dense (>4 tons/sft); very fine to coarse grained sand; trace to little gravel; subangular; poorly sorted; trace roots in upper portion; 10YR 3/2, very dark grayish brown; dry; no odor. (1.8) After 1.8 ft bgs, moist to damp.
3				0.8			(3.5-5.6) CONCRETE/GRAVEL (FILL): Crushed gravel or concrete; White N/8; dry.
4							
5				0.8			
6		4-8	2.5				(5.6-8.0) SILTY CLAY as above; 2.5Y 4/1, dark gray.
7				8.8			
8							(8.0-8.7) SILTY CLAY as above; nonplastic to low plasticity; generally coarser grained; angular; 2.5Y 3/1, very dark gray.
9				399.0			(8.8-9.5) ORGANIC RICH SILT; stiff to very stiff (3.5 tons/sft); no dilatency; organic rich; little clay; GLEY1 2.5/N, black; dense rootlets throughout.
10		8-12	3.6				(9.5-10.9) SILTY CLAY; moderate plasticity; very stiff (3.25 tons/sft); decreased (trace) sand and gravel; subrounded to subangular; well sorted; 2.5Y 4/1, dark gray.
11				1,802	(FILL)		(10.9-12) SAND; fine to coarse grained sand; some gravel (granule to large pebble); angular to subangular; poorly sorted; loose to very loose (1.5 tons/sft); 10YR 3/1, very dark gray, trace mottling throughout; moist to damp. (11.6) Trace purple coloring on matrix and on gravel piece at 11.6 ft bgs; odor of paint.
12							
13				172.6			(12.0-15.2) CLAY: medium to high plasticity; hard (>4 tons/sft); trace sand; subangular; 10YR 2/1, black, with small and streaked mottles of GLEY1 2.5/N, black and 5Y 4/2, olive gray; trace fibrous, weathered concrete; moist to damp; no odor.
14		12-16	3.6				
15				305.1			(15.2-16.0) SAND with SILTY CLAY: sand as above, with silty clay matrix. Loose to medium dense (2 tons/sft); little to some green glass shards; trace red and blue stained matrix; odor of paint; GLEY1 2.5/N, black; moist; slight odor.
16							(16.0) Wet after 16 ft bgs.
17				21.6			SLAG, FILL, and MUNICIPAL WASTE (FILL): generally loosely consolidated; wet. (17.1-17.7) Fibrous organics
18		16-20	2.1				
19				7.1			(18.9-20.3) Slag, coarse grained and gravelly mixture.
20							
21				3.1			(20.3-21.7) Very fine grained material; smooth; no plasticity; White N/8; saturated; no odor.



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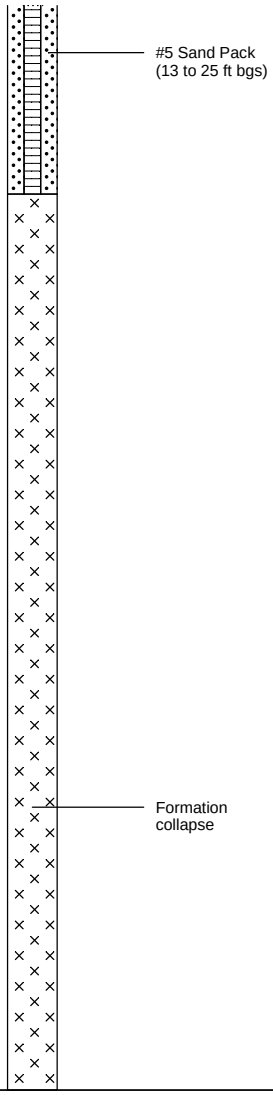
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

Date Start/Finish: 10/05/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-1S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
21							
22		20-24	3.5		(FILL)		(21.7-25.3) Slag, coarse grained and gravelly mixture; GLEY1 2.5/N, black; saturated.
23				2.2			
24							
25				1.8			
26		24-28	3.8				SAND (likely FILL): fine to medium grained sand; rounded; well sorted; medium dense (2.75 tons/sft); 2.5Y 4/1, dark gray; saturated; no odor.
27				17.3			
28					CL		CLAY (NATIVE): high plasticity; soft (1.75 tons/sft); 2.5Y 4/1, dark gray; wet; no odor. (28.0-32.0) stiff (3.5 tons/sft).
29				5.4			
30		28-32	2.0				
31				1.1			
32							(32.0-40.0) very stiff to hard (4.5 ton/sft)
33				1.2			
34		32-36	4.1				
35				0.7			
36							
37				1.7			(40.0-44.0) soft to medium stiff (2 tons/sft)
38		36-40	2.3				
39				0.4			
40							
41				1.4			
42		40-44	4.2				
43				1.2			
44							
45							END OF BORING AT 44 FT BGS.

Well/Boring Construction



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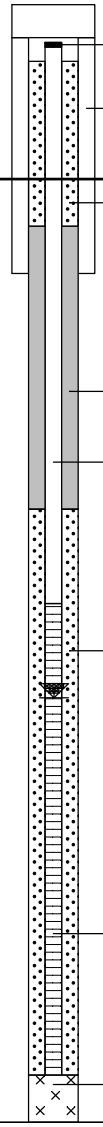
Interval descriptions expanded for full recovery.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-2S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.0			SILTY CLAY and SAND (FILL): low to medium plasticity; hard (>4.5 tons/sft); very fine to coarse grained sand; little granule; little gravel (small to large pebble); subangular to subrounded; 10YR 4/2, dark grayish brown; dry; no odor. (1.7) After 1.7 ft bgs, moist.
2		0-4	2.9				
3				0.0			
4							
5				0.6			SILTY CLAY (FILL): medium to high plasticity; soft to very soft (1 tons/sft); trace organics (woody material) and organic matrix with "spongy" feel; trace medium grained sand; 2.5Y 2.5/1, black; dry to moist; no odor.
6		4-8	3				CLAY (FILL): very high plasticity; hard (>4.5 tons/sft); little to some silt; little fine to coarse grained sand; 2.5Y 3/1, very dark gray; moist to very moist; no odor.
7				0.1			
8							
9				0.6			SLAG, FILL, and INDUSTRIAL WASTE (FILL): (8.9-10.6) Sandy and gravelly fill; coarse grained; fine to coarse grained sand, granule, and small to large pebble; trace silt; medium dense; generally White N/8 to grayish White N/9.5; dry; no odor. (10.6) After 10.6 ft bgs, black; saturated; slight odor.
10		8-12	2.3		(FILL)		
11				1.4			
12							(12.0-16.0) Plastic, paper pulp, woody material, glass shards, very thin metal wires in black matrix material; cohesive; very soft; saturated; strong odor.
13				8.7			
14		12-16	1.2				
15				9.4			
16							(16.0-17.4) Woody debris; strong odor.
17				249.0			(17.4-19.8) Slag material; some wood debris; very fine grained; cohesive; mostly black, some 10YR 5/1, gray; saturated; strong odor.
18		16-20	2.2				
19				29.9			(19.8-20.0) Woody debris; saturated; strong odor.
20							END OF BORING AT 20 FT BGS.
21							



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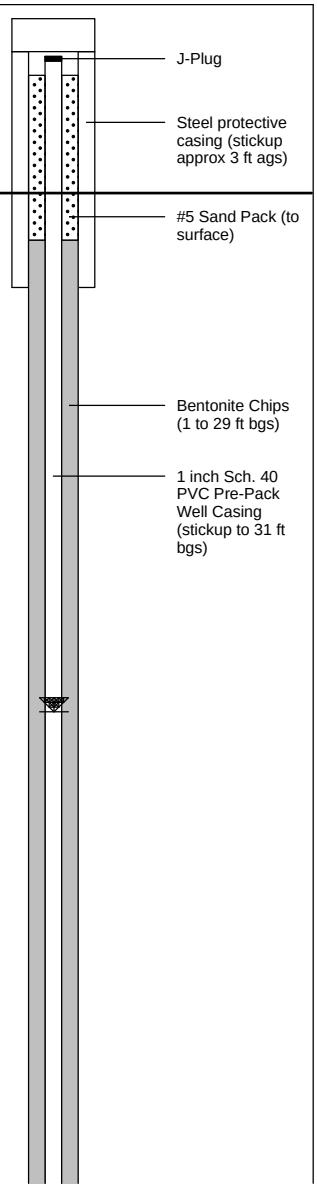
Interval descriptions expanded for full recovery.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-3D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.1			ORGANICS: Grass and rootlets. SILTY CLAY and SAND (FILL): medium plasticity; very stiff (3.5 tons/sft); fine to very coarse grained sand; little granule; trace to litle gravel (small to large pebble); subangular to subrounded; 10YR 3/2, very dark grayish brown; dry; no odor.
2		0-4	2.9				
3				0.0			
4							(3.8-4.0) After 3.8 ft bgs, increased sand and gravel; saturated. (4.0-5.4) Moist to wet.
5				0.2			
6		4-8	3.2				SILTY CLAY (FILL): medium plasticity; stiff to very stiff (3.5 tons/sft); trace fine to coarse grained sand; trace gravel; subrounded to subangular; 10YR 3/1, very dark gray, with 5Y 4/2, olive gray medium mottles; moist to wet; no odor.
7				0.6			
8							SILTY CLAY and SAND (FILL): medium plasticity; very stiff (3.5 tons/sft); fine to very coarse grained sand; little granule; trace to litle gravel (small to large pebble); subangular to subrounded; 10YR 3/2, very dark grayish brown; moist to wet; no odor.
9				0.7			SILTY CLAY (FILL): very high plasticity; soft to very soft (1 ton/sft); "spongy" feel (organic?); trace medium grained sand;trace organics (rootlets); 2.5Y 2.5/1, black; moist to wet; no odor.
10		8-12	3.7				
11				0.7	(FILL)		CLAY (FILL): high plasticity; soft to very soft (1.5 tons/sft); little to some silt; trace sand; 2.5Y 4/1, dark gray; moist to very moist; no odor.
12							SAND (FILL): medium to very coarse grained; little to some granule; little small to large pebble; poorly sorted; some to little silty clay; slightly cohesive (medium dense); 2.5Y 4/1, dark gray; saturated; no odor.
13				0.6			SILTY CLAY (FILL): medium to high plasticity; medium stiff to soft (1 ton/sft); trace fine to coarse grained sand; trace gravel; subrounded to subangular; 10YR 3/1, very dark gray; wet; no odor.
14		12-16	3.4				
15				0.8			(14.5) Burned material, black. (15.4-15.5) Limestone gravel or concrete chunks; pulverized; angular; White N/8.
16							
17				0.8			
18		16-20	2.4				SLAG, FILL, and MUNICIPAL WASTE (FILL): generally loosely consolidated; saturated. Blue plastic, orange spongy inorganic material; wood and cardboard waste; newspaper and paper waste; clear glass shards. (18.0-18.3) Fibrous tree waste. (18.3-18.9) Slag and sand; light brown.
19				1.0			
20							
21				17.6			



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Interval descriptions expanded for full recovery.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-3D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
21								
22		20-24	1.6		(FILL)			
23				7.8				
24							(24.0-25.3) Wood waste.	
25				11.4			(25.3 - 26.3) Slag-like material, tan.	
26		24-28	1.9					
27				8.8				
28								
29								
30		28-32	0.7	8.2				#5 Sand Pack (29 to 36 ft bgs)
31								
32								1 inch Sch. 40 0.010-Slot PVC Pre-Pack Well Screen (31 to 36 ft bgs)
33				NA				
34		32-36	0.0					
35				NA				
36					CL		CLAY (NATIVE): High plasticity; soft to medium stiff (1-1.5 tons/sft); 10YR 5/1, gray; wet to saturated.	
37				3.5				
38		36-40	4.1					Formation collapse
39				7.6				
40								
41				3.0				
42		40-44	4.2					
43				2.2				
44								
45							END OF BORING AT 44 FT BGS.	

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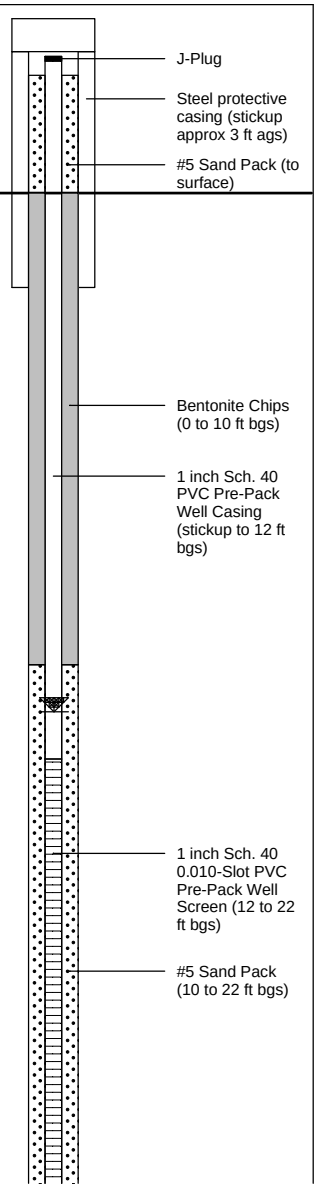
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-3S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.1			ORGANICS: Grass and rootlets. SILTY CLAY and SAND (FILL): medium plasticity; very stiff (3.5 tons/sft); fine to very coarse grained sand; little granule; trace to litle gravel (small to large pebble); subangular to subrounded; 10YR 3/2, very dark grayish brown; dry; no odor.
2		0-4	2.9				
3				0.0			
4							(3.8-4.0) After 3.8 ft bgs, increased sand and gravel; saturated. (4.0-5.4) Moist to wet.
5				0.2			
6		4-8	3.2				SILTY CLAY (FILL): medium plasticity; stiff to very stiff (3.5 tons/sft); trace fine to coarse grained sand; trace gravel; subrounded to subangular; 10YR 3/1, very dark gray, with 5Y 4/2, olive gray medium mottles; moist to wet; no odor.
7				0.6			
8							SILTY CLAY and SAND (FILL): medium plasticity; very stiff (3.5 tons/sft); fine to very coarse grained sand; little granule; trace to litle gravel (small to large pebble); subangular to subrounded; 10YR 3/2, very dark grayish brown; moist to wet; no odor.
9				0.7			SILTY CLAY (FILL): very high plasticity; soft to very soft (1 ton/sft); "spongy" feel (organic?); trace medium grained sand;trace organics (rootlets); 2.5Y 2.5/1, black; moist to wet; no odor.
10		8-12	3.7				
11				0.7	(FILL)		CLAY (FILL): high plasticity; soft to very soft (1.5 tons/sft); little to some silt; trace sand; 2.5Y 4/1, dark gray; moist to very moist; no odor.
12							SAND (FILL): medium to very coarse grained; little to some granule; little small to large pebble; poorly sorted; some to little silty clay; slightly cohesive (medium dense); 2.5Y 4/1, dark gray; saturated; no odor.
13				0.6			SILTY CLAY (FILL): medium to high plasticity; medium stiff to soft (1 ton/sft); trace fine to coarse grained sand; trace gravel; subrounded to subangular; 10YR 3/1, very dark gray; wet; no odor.
14		12-16	3.4				
15				0.8			(14.5) Burned material, black. (15.4-15.5) Limestone gravel or concrete chunks; pulverized; angular; White N/8.
16							
17				0.8			
18		16-20	2.4				SLAG, FILL, and MUNICIPAL WASTE (FILL): generally loosely consolidated; saturated. Blue plastic, orange spongy inorganic material; wood and cardboard waste; newspaper and paper waste; clear glass shards. (18.0-18.3) Fibrous tree waste. (18.3-18.9) Slag and sand; light brown.
19				1.0			
20							
21				17.6			

Well/Boring Construction



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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

PZ-5S was installed adjacent to PZ-4D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-3S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
21								
22		20-24	1.6		(FILL)			
23				7.8				
24							(24.0-25.3) Wood waste.	
25				11.4			(25.3 - 26.3) Slag-like material, tan.	
26		24-28	1.9					
27				8.8				
28								
29								
30		28-32	0.7	8.2				
31								
32								
33				NA				
34		32-36	0.0					
35				NA				
36					CL		CLAY (NATIVE): High plasticity; soft to medium stiff (1-1.5 tons/sft); 10YR 5/1, gray; wet to saturated.	
37				3.5				
38		36-40	4.1					
39				7.6				
40								
41				3.0				
42		40-44	4.2					
43				2.2				
44								
45							END OF BORING AT 44 FT BGS.	

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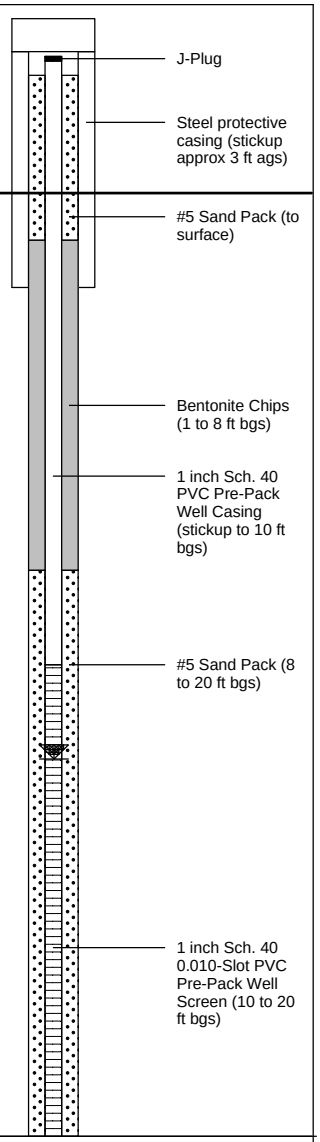
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

PZ-5S was installed adjacent to PZ-4D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-4S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.4			ORGANICS: roots, twigs; dry. SILTY CLAY and SAND (FILL): low plasticity; hard (>4.5 tons/sft); very fine to coarse grained sand; little granule; little gravel (small to large pebble); subangular to angular; 10YR 3/3, dark brown; dry; no odor. (1.0-1.1) Pulverized concrete; fine pieces; angular; White N/8. (1.7) After 1.7 ft bgs, moist; 10YR 3/1, very dark gray.
2		0-4	2.9				
3				0.5			
4							
5				0.4			
6		4-8	2.8				
7				0.4			
8							
9				0.4			
10		8-12	1.8		(FILL)		
11				0.4			CLAY (FILL): high plasticity; very stiff to hard (4.25 tons/sft); little to some silt; little to trace fine to medium grained sand; 2.5Y 4/1, dark gray with fine 2.5Y 4/3, olive brown mottling and streaking; moist; no odor. (12.0-13.6) Interval of increased sand and gravel content; soft to medium stiff (2.5 tons/sft); fine to coarse sand; trace granule; trace small pebbles; subangular to subrounded; moist to wet.
12							
13				0.4			
14		12-16	2.0				
15				0.6			
16							
17				0.5			SILT and CLAY (FILL): low plasticity; very stiff to hard; trace coarse grained sand and granule; 2.5Y 4/1, dark gray; cohesive, but crumbles when rollled; very dry; no odor. -Intermittently moist
18		16-20	3.0				
19				0.6			SILT (FILL): nonplastic; slow to rapid dilatancy; very soft (<0.25 tons/sft); little to some medium to coarse grained sand; 10YR 2/1, black; saturated; no odor.
20							END OF BORING AT 20 FT BGS.
21							



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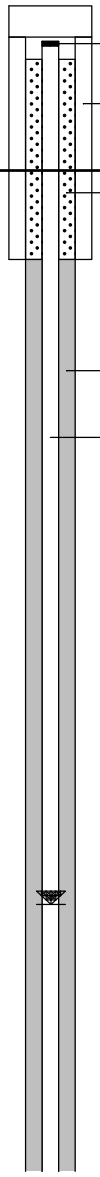
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

Date Start/Finish: 10/05/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 48 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-5D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.0			ORGANICS: Grass and rootlets.
2		0-4	3.4				SILTY CLAY and SAND (FILL): medium plasticity; very stiff/very dense (>4 tons/sft); some fine to very coarse grained sand; little granule; trace small to large pebble; subangular to subrounded; poorly sorted; 10YR 4/1, dark gray; dry; no odor. (2.4) After 2.4 ft bgs, moist; 10YR 3/1, very dark gray.
3				0.0			
4							GRAVEL/LIMESTONE (FILL): Crushed gravel or limestone; angular and fractured; White N/8; dry; no odor.
5				0.0			SILTY CLAY and SAND (FILL): nonplastic; very stiff/very dense (>4 tons/sft); some fine to very coarse grained sand; little granule; trace small to large pebble; subangular to subrounded; poorly sorted; 10YR 3/1, very dark gray; dry to moist; no odor.
6		4-8	3.7				(5.5-6.0) Crushed gravel/limestone mixed into matrix; as above; dry. (6.5-6.8) Sand lense; medium to coarse grained; subangular; well sorted; 10YR 4/4, dark yellowish brown.
7				0.1			
8							(8.0) After 8 ft bgs, low to medium plasticity, moist to wet. (8.2) At 8.2 ft bgs, greenish vesicular fine-grained rock (potentially concrete or slag); approx 1 inch by 1 inch.
9				0.7			
10		8-12	4.0		(FILL)		
11				1.4			
12							(12.0) After 12 ft bgs, 10YR 4/1, dark gray; dry to moist.
13				0.8			
14		12-16	4.1				
15				1.3			SILTY CLAY (FILL): low to medium plasticity; hard (>4 tons/sft); little fine to very coarse sand; trace granule; trace small to medium pebble; subangular to subrounded; poorly sorted; 10YR 2/1, black; moist; no odor. (16.0) After 16 ft bgs, very stiff (3.25 tons/sft); 10YR 4/1, dark gray; moist to dry. (16.5) After 16.5, saturated.
16							
17				0.7			
18		16-20	3.9				SILT and CLAY (FILL): high plasticity; very stiff to hard (?4 tons/sft); little fine grained sand; trace coarse sand and granule; 10YR 3/2, very dark grayish brown matrix, with 10YR 4/3, brown mottles; moist to wet; no odor. (18.0) At 18 ft bgs, woody material ~1 inch interval.
19				0.5			
20							
21				0.8			SILT and CLAY (FILL): very high plasticity; soft to very soft (<0.5 tons/sft); little very fine grained sand; GLEY1 2.5/N, black; moist to wet; slight odor.
22		20-24	2.8				

Well/Boring Construction



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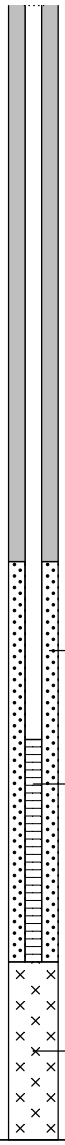
Interval descriptions expanded for full recovery.

Gas pocket encountered while drilling; vented relatively quickly.

Date Start/Finish: 10/05/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 48 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-5D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
23				38.9	(FILL)		SLAG, FILL, and MUNICIPAL WASTE (FILL): Matrix is coarse grained slag; loose; trace to little glass shards, green and clear; GLEY1 2.5/N, black; moist to wet; slight odor.
24							(23.0-23.1) Woody material, some brick debris.
25							
26		24-28	0.5	63.9			
27							
28							(28.0-32.0) Newspaper (domestic), plastic, styrofoam, wood.
29				403.0			
30		28-32	1.8				
31				98.0			
32							(32.0-36.0) Woody debris
33				63.1			
34		32-36	1.3				
35				65.2			
36							
37							NO RECOVERY
38		36-40	0.0	NR			
39							
40							
41							(40-44) Woody debris.
42		40-44	0.4	21.1			
43							
44							
45					CL		CLAY (NATIVE): High plasticity; soft to medium stiff (1.5 tons/sft); 10YR 5/1, gray; saturated; no odor.
46		44-48	1.0	4.5			
47							
48							
49							END OF BORING AT 48 FT BGS.

Well/Boring Construction



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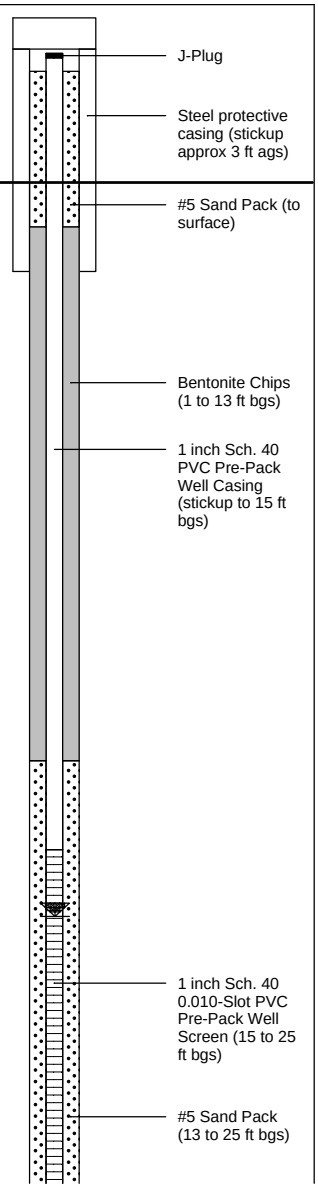
Interval descriptions expanded for full recovery.

Gas pocket encountered while drilling; vented relatively quickly.

Date Start/Finish: 10/05/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 48 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-5S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.0			ORGANICS: Grass and rootlets.
2		0-4	3.4				SILTY CLAY and SAND (FILL): medium plasticity; very stiff/very dense (>4 tons/sft); some fine to very coarse grained sand; little granule; trace small to large pebble; subangular to subrounded; poorly sorted; 10YR 4/1, dark gray; dry; no odor. (2.4) After 2.4 ft bgs, moist; 10YR 3/1, very dark gray.
3				0.0			
4							GRAVEL/LIMESTONE (FILL): Crushed gravel or limestone; angular and fractured; White N/8; dry; no odor.
5				0.0			SILTY CLAY and SAND (FILL): nonplastic; very stiff/very dense (>4 tons/sft); some fine to very coarse grained sand; little granule; trace small to large pebble; subangular to subrounded; poorly sorted; 10YR 3/1, very dark gray; dry to moist; no odor.
6		4-8	3.7				(5.5-6.0) Crushed gravel/limestone mixed into matrix; as above; dry. (6.5-6.8) Sand lense; medium to coarse grained; subangular; well sorted; 10YR 4/4, dark yellowish brown.
7				0.1			
8							(8.0) After 8 ft bgs, low to medium plasticity, moist to wet. (8.2) At 8.2 ft bgs, greenish vesicular fine-grained rock (potentially concrete or slag); approx 1 inch by 1 inch.
9				0.7			
10		8-12	4.0		(FILL)		
11				1.4			
12							(12.0) After 12 ft bgs, 10YR 4/1, dark gray; dry to moist.
13				0.8			
14		12-16	4.1				
15				1.3			SILTY CLAY (FILL): low to medium plasticity; hard (>4 tons/sft); little fine to very coarse sand; trace granule; trace small to medium pebble; subangular to subrounded; poorly sorted; 10YR 2/1, black; moist; no odor. (16.0) After 16 ft bgs, very stiff (3.25 tons/sft); 10YR 4/1, dark gray; moist to dry. (16.5) After 16.5, saturated.
16							
17				0.7			
18		16-20	3.9				SILT and CLAY (FILL): high plasticity; very stiff to hard (?4 tons/sft); little fine grained sand; trace coarse sand and granule; 10YR 3/2, very dark grayish brown matrix, with 10YR 4/3, brown mottles; moist to wet; no odor. (18.0) At 18 ft bgs, woody material ~1 inch interval.
19				0.5			
20							
21				0.8			SILT and CLAY (FILL): very high plasticity; soft to very soft (<0.5 tons/sft); little very fine grained sand; GLEY1 2.5/N, black; moist to wet; slight odor.
22		20-24	2.8				

Well/Boring Construction



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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.
Gas pocket encountered while drilling; vented relatively quickly.

PZ-3S was installed adjacent to PZ-2D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/05/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 48 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-5S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
23				38.9	(FILL)		SLAG, FILL, and MUNICIPAL WASTE (FILL): Matrix is coarse grained slag; loose; trace to little glass shards, green and clear; GLEY1 2.5/N, black; moist to wet; slight odor. (23.0-23.1) Woody material, some brick debris.	
24								
25								
26		24-28	0.5	63.9				
27								
28							(28.0-32.0) Newspaper (domestic), plastic, styrofoam, wood.	
29				403.0				
30		28-32	1.8					
31				98.0				
32							(32.0-36.0) Woody debris	
33				63.1				
34		32-36	1.3					
35				65.2				
36							NO RECOVERY	
37								
38		36-40	0.0	NR				
39								
40							(40-44) Woody debris.	
41								
42		40-44	0.4	21.1				
43								
44								
45							CLAY (NATIVE): High plasticity; soft to medium stiff (1.5 tons/sft); 10YR 5/1, gray; saturated; no odor.	
46		44-48	1.0	4.5	CL			
47								
48							END OF BORING AT 48 FT BGS.	
49								

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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

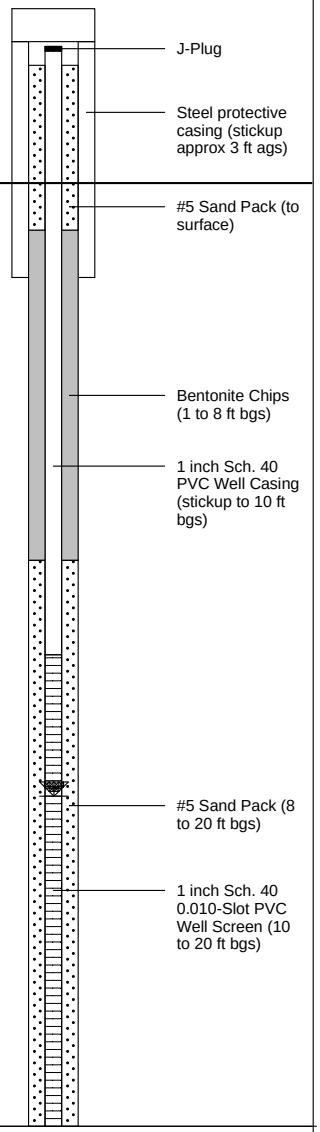
Interval descriptions expanded for full recovery.
Gas pocket encountered while drilling; vented relatively quickly.

PZ-3S was installed adjacent to PZ-2D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-6S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.0			SILTY CLAY and SAND (FILL): Low plasticity; very stiff to hard (>4.5 tons/sft); sand very fine to very coarse grained; little granule; little gravel (small to large pebble); angular to subangular; 10YR 4/3, brown; dry; no odor.
2		0-4	2.1				After 1.5 ft bgs, 10YR 3/1, very dark gray; moist.
3				0.0			
4							
5				0.0			
6		4-8	2.7				
7				0.0			Trace trash in interval, orange and white material around 7.5 ft bgs.
8							
9				0.0			
10		8-12	3.9		(FILL)		SLAG, FILL, and MUNICIPAL WASTE (FILL): Slightly cohesive but soft, mostly GLEY1 2/5/N, black; moist to wet. (10 to 13.8) SLAG and FILL; sandy and gravelly; fine to very coarse grained sand-size to small to large pebble-size; trace to little glass shards and colored plastics, both <1/4 inch diameter; loosely consolidated; saturated; no odor.
11				1.4			
12							
13				1.1			(13.0) After 13 ft bgs, saturated.
14		12-16	2.5				(13.8 to 15.1) Thin flexible plastic (shopping bag thinness); wood pieces. Saturated.
15				6.3			(15.1 to 20.0) Newspaper, slag, glass, wood chunks and fibrous debris. Saturated.
16							(16.0 to 18.0) Faint odor of coal tar. Thick coating.
17				70.1			
18		16-20	1.3				
19				14.4			
20							
21							END OF BORING AT 20 FT BGS.

Well/Boring Construction



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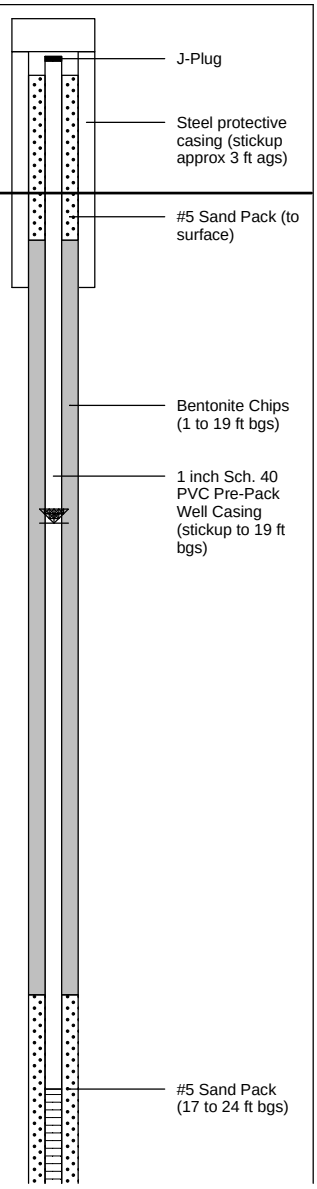
Interval descriptions expanded for full recovery.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-7D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1		0-4	1.7	0.0	(FILL)		ORGANICS: Reeds. SILTY CLAY and SAND (FILL): low plasticity; medium stiff (1.5 tons/sft); little to some fine to medium grained sand; trace coarse grained sand; trace granule to small pebble; angular to subangular; trace to little organics; 2.5Y 4/2, dark grayish brown; moist; no odor.
2							
3				0.0			BRICK (FILL): Crushed brick; red. SAND (FILL): Fine to medium grained sand; subrounded; well sorted; loose to medium dense; trace to little silt; 2.5Y 4/2, dark grayish brown; wet; no odor.
4							
5		4-8	2.2	0.2			SILTY CLAY (FILL): medium plasticity; hard (>4.5 tons/sft); trace granule; trace little fine to coarse sand; angular; 10YR 3/2, very dark grayish brown; dry to moist; no odor.
6							SLAG, FILL, and MUNICIPAL WASTE (FILL): generally fine to very coarse grained; little granule-size; little smal; to large pebble size; angular; trace crushed, subrounded glass pieces size of very coarse grained sand; loosely consolidated to medium dense; GLEY1 2.5/N, black; moist; no odor. (5.4) Plastic sheeting
7				0.2			
8							
9							NO RECOVERY
10		8-12	0.0	NA			
11							
12							
13							(12.0) After 12 ft bgs, saturated; no odor. (12.0) After 12 ft bgs, small, thin plastic shards; clear to white.
14		12-16	1.2	3.1			(14.3) Woody material; cohesive fibers; approx 1/2 inch length.
15							
16							
17							NO RECOVERY
18		16-20	0.0	NA			
19							
20							
21				3.1			SAND (FILL): Fine to medium grained sand; subrounded; well sorted; loose to medium dense; trace organics; trace silt; GLEY1 4/N, dark gray; saturated; no odor.

Well/Boring Construction



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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-7D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
21								
22		20-24	3.3		(FILL)		(22.9) Near bottom of interval, metal wire/nail portion; fin gauge; approx 1 inch length. Black, fibrous burned material, thin, ~1" interval.	1 inch Sch. 40 0.010-Slot PVC Pre-Pack Well Screen (19 to 24 ft bgs)
23				2.8			CLAY (NATIVE): high plasticity; soft (1.25 tons/sft); 2.5Y 4/1, dark gray; saturated; no odor.	
24								
25				1.7				
26		24-28	3.6					
27				0.7				
28								
29								
30		28-32	4.1	0.5				
31								
32								
33								
34		32-36	3.8	0.2	CL			Formation collapse
35								
36								
37							NO RECOVERY	
38		36-40	0.0	NA				
39								
40								
41				0.3			(36.0-40.0) No recovery from 36 to 40 ft bgs; 40 to 44 ft bgs interval may be partially from 36 to 40 ft bgs interval.	
42		40-44	4.1					
43				0.7				
44								
45							END OF BORING AT 44 FT BGS.	

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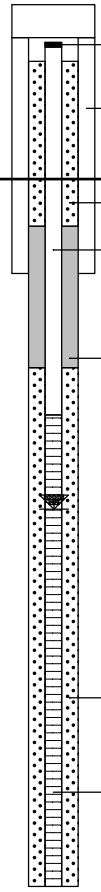
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-7S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.0			ORGANICS: Reeds.
							SILTY CLAY and SAND (FILL): low plasticity; medium stiff (1.5 tons/sft); little to some fine to medium grained sand; trace coarse grained sand; trace granule to small pebble; angular to subangular; trace to little organics; 2.5Y 4/2, dark grayish brown; moist; no odor.
2		0-4	1.7				
3				0.0			BRICK (FILL): Crushed brick; red.
							SAND (FILL): Fine to medium grained sand; subrounded; well sorted; loose to medium dense; trace to little silt; 2.5Y 4/2, dark grayish brown; wet; no odor.
4							
5				0.2			SILTY CLAY (FILL): medium plasticity; hard (>4.5 tons/sft); trace granule; trace little fine to coarse sand; angular; 10YR 3/2, very dark grayish brown; dry to moist; no odor.
6		4-8	2.2				SLAG, FILL, and MUNICIPAL WASTE (FILL): generally fine to very coarse grained; little granule-size; little smal; to large pebble size; angular; trace crushed, subrounded glass pieces size of very coarse grained sand; loosely consolidated to medium dense; GLEY1 2.5/N, black; moist; no odor. (5.4) Plastic sheeting
7				0.2			
8							
9							NO RECOVERY
10		8-12	0.0	NA	(FILL)		
11							
12							
13							(12.0) After 12 ft bgs, saturated; no odor. (12.0) After 12 ft bgs, small, thin plastic shards; clear to white.
14		12-16	1.2	3.1			(14.3) Woody material; cohesive fibers; approx 1/2 inch length.
15							
16							
17							NO RECOVERY
18		16-20	0.0	NA			
19							
20							
21				3.1			SAND (FILL): Fine to medium grained sand; subrounded; well sorted; loose to medium dense; trace organics; trace silt; GLEY1 4/N, dark gray; saturated; no odor.

Well/Boring Construction



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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

PZ-9S was installed adjacent to PZ-8D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/06/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 44 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-7S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
21								
22		20-24	3.3		(FILL)		(22.9) Near bottom of interval, metal wire/nail portion; fin gauge; approx 1 inch length. Black, fibrous burned material, thin, ~1" interval.	
23				2.8			CLAY (NATIVE): high plasticity; soft (1.25 tons/sft); 2.5Y 4/1, dark gray; saturated; no odor.	
24								
25				1.7				
26		24-28	3.6					
27				0.7				
28								
29								
30		28-32	4.1	0.5				
31								
32								
33								
34		32-36	3.8	0.2	CL			
35								
36								
37							NO RECOVERY	
38		36-40	0.0	NA				
39								
40								
41				0.3			(36.0-40.0) No recovery from 36 to 40 ft bgs; 40 to 44 ft bgs interval may be partially from 36 to 40 ft bgs interval.	
42		40-44	4.1					
43				0.7				
44								
							END OF BORING AT 44 FT BGS.	
45								

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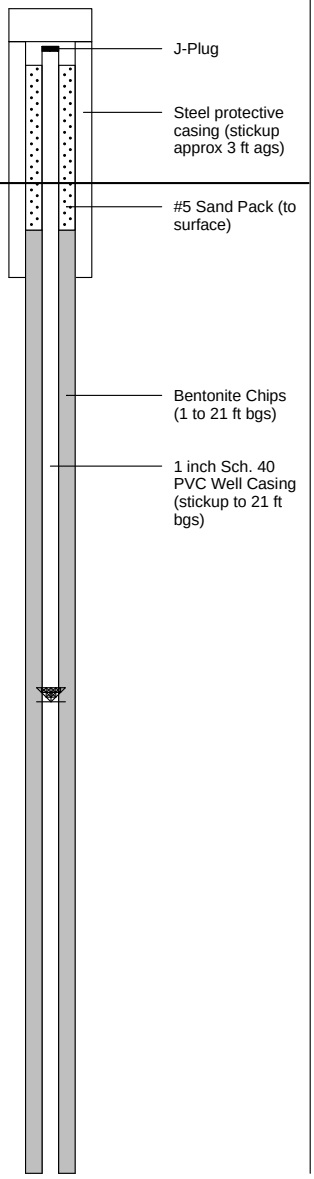
Interval descriptions expanded for full recovery.

PZ-9S was installed adjacent to PZ-8D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 36 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-8D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				1.1			ORGANIC LAYER: Reed pieces. SAND (FILL): Fine to medium grained sand; little silt; well sorted; subrounded; loose to medium dense (1 ton/sft); 10YR 3/3, dark brown; moist; no odor.
2		0-4	1.9				
3				2.4			SAND (FILL): Fine to very coarse grained sand; little granule; trace silt; poorly sorted; subangular to subrounded; loose (0.5 tons/sft); 10YR 4/4, dark yellowish brown; moist; no odor.
4							
5				10.4			SILT and CLAY (FILL): Silt and clay; trace medium to coarse grained sand; low plasticity; hard (>4.5 tons/sft); 10YR 3/2, very dakr grayish brown; dry to moist; no odor.
6		4-8	2.6				
7				73.8			SLAG, FILL, and INDUSTRIAL WASTE (FILL): Mostly GLEY1 2/5/N, black; moist to wet. (6.3-8.0) Crushed rock; fine to coarse sand-size; trace large pebble-size; medium dense matrix; moist.
8							(8.0-8.7) Slag, appearing as fine-grained vesicular concrete; gray.
9				479.0			(8.7-11.6) Burned, ashy gray organic material (possibly paper); moist.
10		8-12	1.1				
11				1,730	(FILL)		
12							(11.6-12.0) Slag, appearing as fine-grained vesicular concrete; gray; saturated. (12.0-16.0) Crushed gravel and large wood chunks.
13							
14		12-16	0.9	495.1			
15							
16							(16.0-24.0) After 16 ft bgs, moderate odor, sheen. (16.0-20.0) Wood chunks and organics.
17							
18		16-20	0.8	883.0			
19							
20							(20.0-24.0) Loose slag.
21							

Well/Boring Construction



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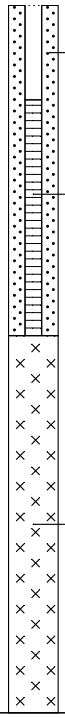
Interval descriptions expanded for full recovery.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 36 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-8D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
21							
22		20-24	0.6	1,030			
23							
24							
25				10.0	(FILL)		SAND (FILL): Fine to medium grained sand; trace silt; well sorted; subrounded; loose to medium dense (1.75 tons/sft); 2.5Y 3/2, very dark grayish brown; saturated; no odor. (24.4-25.5) Trace organics in interval; thin plant material.
26		24-28	4.0				(26.0) At 26 ft bgs, glass shard <1/8 inch diameter; angular; clear.
27				27.7			
28							
29				5.8			CLAY (NATIVE): High plasticity; soft (1.5 tons/sft); 2.5 4/1, dark gray; saturated; no odor.
30		28-32	4.0				
31				10.7			
32					CL		
33				19.7			
34		32-36	4.0				
35				17.0			
36							
37							END OF BORING AT 36 FT BGS.

Well/Boring Construction



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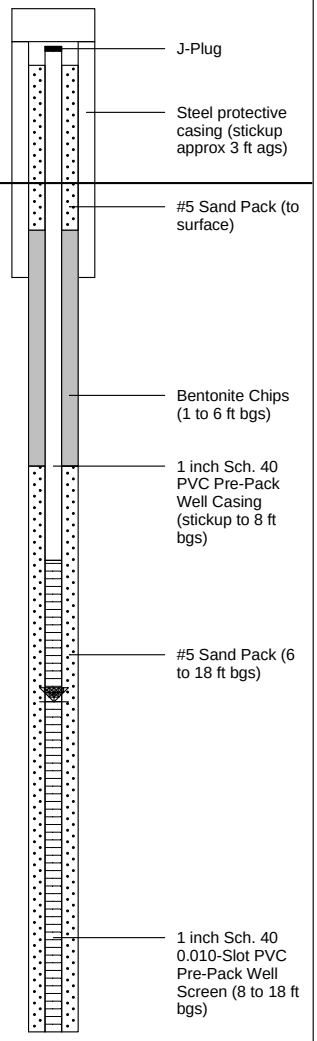
Interval descriptions expanded for full recovery.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 36 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-8S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						ORGANIC LAYER: Reed pieces.
1				1.1			SAND (FILL): Fine to medium grained sand; little silt; well sorted; subrounded; loose to medium dense (1 ton/sft); 10YR 3/3, dark brown; moist; no odor.
2		0-4	1.9				
3				2.4			SAND (FILL): Fine to very coarse grained sand; little granule; trace silt; poorly sorted; subangular to subrounded; loose (0.5 tons/sft); 10YR 4/4, dark yellowish brown; moist; no odor.
4							SILT and CLAY (FILL): Silt and clay; trace medium to coarse grained sand; low plasticity; hard (>4.5 tons/sft); 10YR 3/2, very dakr grayish brown; dry to moist; no odor.
5				10.4			
6		4-8	2.6				
7				73.8			SLAG, FILL, and INDUSTRIAL WASTE (FILL): Mostly GLEY1 2/5/N, black; moist to wet. (6.3-8.0) Crushed rock; fine to coarse sand-size; trace large pebble-size; medium dense matrix; moist.
8							(8.0-8.7) Slag, appearing as fine-grained vesicular concrete; gray.
9				479.0	(FILL)		(8.7-11.6) Burned, ashy gray organic material (possibly paper); moist.
10		8-12	1.1				
11				1,730			(11.6-12.0) Slag, appearing as fine-grained vesicular concrete; gray; saturated. (12.0-16.0) Crushed gravel and large wood chunks.
12							
13							
14		12-16	0.9	495.1			
15							
16							(16.0-24.0) After 16 ft bgs, moderate odor, sheen. (16.0-20.0) Wood chunks and organics.
17							
18		16-20	0.8	883.0			
19							
20							(20.0-24.0) Loose slag.
21							

Well/Boring Construction



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Interval descriptions expanded for full recovery.

PZ-12S was installed adjacent to PZ-11D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 36 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-8S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
21								
22		20-24	0.6	1,030	(FILL)			
23								
24								
25				10.0			SAND (FILL): Fine to medium grained sand; trace silt; well sorted; subrounded; loose to medium dense (1.75 tons/sft); 2.5Y 3/2, very dark grayish brown; saturated; no odor. (24.4-25.5) Trace organics in interval; thin plant material.	
26		24-28	4.0				(26.0) At 26 ft bgs, glass shard <1/8 inch diameter; angular; clear.	
27				27.7				
28								
29				5.8				
30		28-32	4.0		CL		CLAY (NATIVE): High plasticity; soft (1.5 tons/sft); 2.5 4/1, dark gray; saturated; no odor.	
31				10.7				
32								
33				19.7				
34		32-36	4.0					
35				17.0				
36								
							END OF BORING AT 36 FT BGS.	
37								

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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

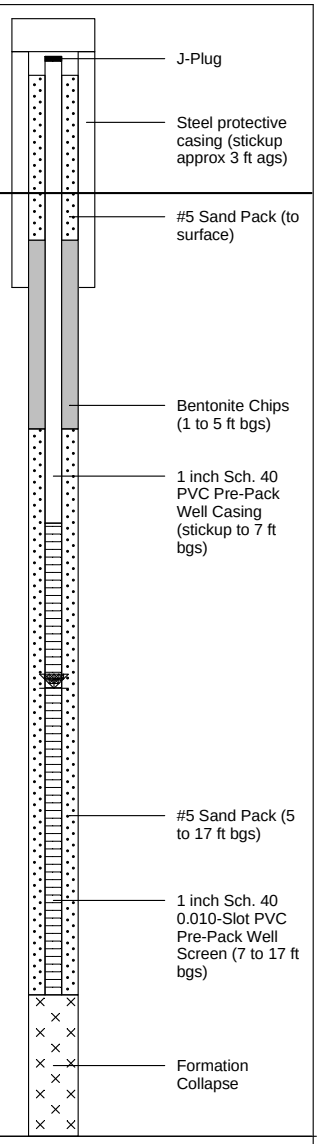
Interval descriptions expanded for full recovery.

PZ-12S was installed adjacent to PZ-11D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-9S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				1.4			SAND (FILL): Fine grained sand; little medium grained sand; trace granule; trace organics; well sorted; subrounded; loose to very loose; 10YR 5/4, yellowish brown; moist; no odor.
2		0-4	1.9				CONCRETION (FILL): Conglomerate chunk; fine to coarse grained; dense; hard; concrete-like; 2.5YR 5/6, red with trace black grains.
3				1.7			SAND, some SILTY CLAY (FILL): Fine to medium grained sand; little to some granule to small to large pebble; poorly sorted; subangular to subrounded; nonplastic; loose (<1 tons/sft); 10YR 4/3, brown; moist; no odor.
4							
5				3.0			SILTY CLAY and SAND (FILL): Fine to very coarse grained sand; some gravel (granule to small to large pebble); subangular to subrounded; low plasticity; hard (>4.5 tons/sft); 10YR 3/2, very dark grayish brown; moist; no odor.
6		4-8	3.1				
7				1.9			
8							
9				3.0			
10		8-12	2.8		(FILL)		SLAG, FILL, and INDUSTRIAL WASTE (FILL): with silt and clay matrix material. (10.0-11.2) Silty clay; little organics; trace plastic; trace glass shards; high plasticity; soft (1 ton/sft); 10YR 3/2, very dark grayish brown; moist; no odor.
11				4.7			(11.2 - 12.8) Slag; coarse; loosely consolidated; GLEY1 2.5/N, black; saturated; no odor. After 12 ft bgs, purple coloring until 12.8 ft bgs; strong odor to end of core.
12							
13				197.0			(12.8-18.5) Loosely consolidated slag; wood; angular gravel; cardboard pulp; glass shards; coal pieces; metal residual; GLEY1 2.5/N, black; saturated.
14		12-16	2.7				
15				254.2			
16							
17				11.1			
18		16-20	2.6				
19				8.2			(18.5-20.0) Same material as above, except "soupy" or oversaturated; stained purplish/black; very strong odor. No visible sheen.
20							END OF BORING AT 20 FT BGS.
21							

Well/Boring Construction



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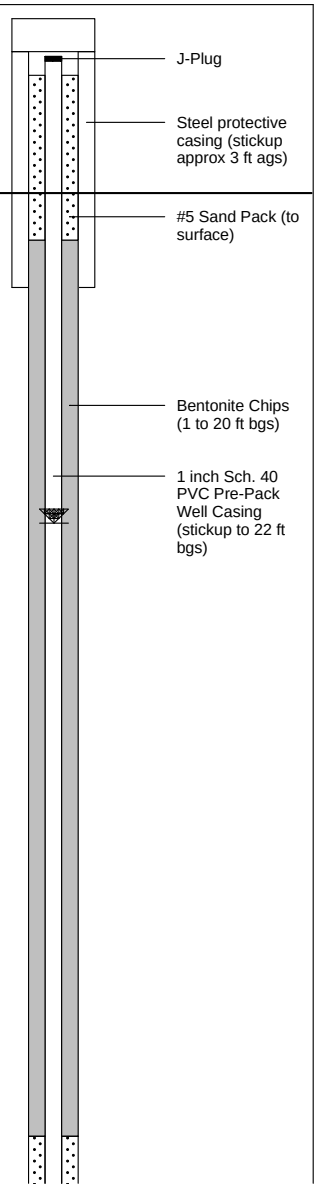
Interval descriptions expanded for full recovery.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 40 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-10D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1		0-4	3.5	181.6	(FILL)		SAND, GRAVEL, some SILTY CLAY (FILL): Sand very fine to very coarse grained; little to some granule; little to some small to large pebble; subangular to subrounded; poorly sorted; hard/very dense (>4.5 tons/sft); 10YR 4/2, dark grayish brown; dry; no odor. (2.1) After 2.1 ft bgs, moist.
2							(1.7-1.8) Angular, white gravel chunk; white 7.5YR 9.5/1, white.
3				20.9			
4		4-8	2.7				SAND and GRAVEL (FILL): Very fine grained sand to granule, and small to large pebble; loose; 10YR 4/4, dark yellowish brown; dry; no odor.
5				16.9			SILTY CLAY (FILL): little to some medium to coarse grained sand; little granule; trace small to large pebble; low plasticity; hard (>4.5 tons/sft); 10YR 4/1, dark gray; dry to moist; no odor.
6							
7				10.0			-Wet at 7 ft bgs.
8		8-12	3.3				SILTY CLAY (FILL): little fine to coarse sand and granule; subangular; high plasticity; soft to medium stiff (2.25 tons/sft); 2.5Y 3/2, very dark grayish brown, trace small mottles 2.5Y 5/3, light olive brown; moist to wet; no odor. -Trace red brick pieces, trace soft plastic; trace organics.
9				2.7			
10							
11				4.6			
12		12-16	3.2				
13				27.1			SLAG, FILL, and INDUSTRIAL WASTE (FILL): generally loosely consolidated; coarse grained after 16 ft bgs; colors vary more than other core locations onsite; saturated throughout. (13-13.5) Slag, little silt and clay; loose; fairly cohesive until crumbling; reddish coloring. (13.5-13.6) Very fine grained gray vesicular slag or concrete mass. (13.6-14.1) Reddish slag material. Faint coal tar-like odor. -Strong odor after 14 ft bgs through end of core. (14.1-14.3) Very fine grained gray vesicular slag or concrete mass. (14.3-16.0) Slag, little silt and clay; loose; fairly cohesive until crumbling; reddish coloring. (15.4) At 15.4, Crumbly blue limestone-like substance. -After 16 ft bg, weak sheen. (16.0-28.0) Fill material; very fine grained; loose to very loose; GLEY1 2.5/N, black; oversaturated; glass shards throughout (to 1/2 inch diameter), colored plastic pieces (<1/16 inch diameter); very soft and soupy; coal tar-like odor; faint sheen.
14							
15				988.0			
16		16-20	2.4				
17				392.2			
18							
19				20.1			
20							
21							



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Interval descriptions expanded for full recovery.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 40 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-10D** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
21								
22		20-24	~1.4	30.7	(FILL)			#5 Sand Pack (20 to 27 ft bgs)
23								
24								
25								1 inch Sch. 40 0.010-Slot PVC Pre-Pack Well Screen (22 to 27 ft bgs)
26		24-28	0.4	14.1				
27								
28					CL		CLAY (NATIVE): High plasticity; soft to medium stiff (1-1.5 tons/sft); 10YR 5/1, gray; wet; no odor.	
29				5.7				
30		28-32	4.2					
31				9.1				
32								Formation collapse
33				5.3				
34		32-36	3.8					
35				7.4				
36								
37				5.8				
38			4.1					
39				7.6				
40							END OF BORING AT 40 FT BGS.	
41								

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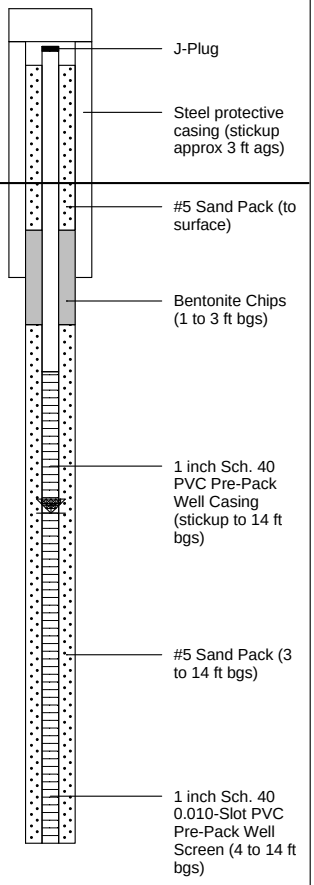
Interval descriptions expanded for full recovery.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 40 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-10S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1		0-4	3.5	181.6	(FILL)		SAND, GRAVEL, some SILTY CLAY (FILL): Sand very fine to very coarse grained; little to some granule; little to some small to large pebble; subangular to subrounded; poorly sorted; hard/very dense (>4.5 tons/sft); 10YR 4/2, dark grayish brown; dry; no odor. (2.1) After 2.1 ft bgs, moist.
2							(1.7-1.8) Angular, white gravel chunk; white 7.5YR 9.5/1, white.
3				20.9			
4							SAND and GRAVEL (FILL): Very fine grained sand to granule, and small to large pebble; loose; 10YR 4/4, dark yellowish brown; dry; no odor.
5		4-8	2.7	16.9			SILTY CLAY (FILL): little to some medium to coarse grained sand; little granule; trace small to large pebble; low plasticity; hard (>4.5 tons/sft); 10YR 4/1, dark gray; dry to moist; no odor.
6							
7				10.0			-Wet at 7 ft bgs.
8							
9		8-12	3.3	2.7			SILTY CLAY (FILL): little fine to coarse sand and granule; subangular; high plasticity; soft to medium stiff (2.25 tons/sft); 2.5Y 3/2, very dark grayish brown, trace small mottles 2.5Y 5/3, light olive brown; moist to wet; no odor. -Trace red brick pieces, trace soft plastic; trace organics.
10							
11				4.6			
12							
13		12-16	3.2	27.1			SLAG, FILL, and INDUSTRIAL WASTE (FILL): generally loosely consolidated; coarse grained after 16 ft bgs; colors vary more than other core locations onsite; saturated throughout. (13-13.5) Slag, little silt and clay; loose; fairly cohesive until crumbling; reddish coloring. (13.5-13.6) Very fine grained gray vesicular slag or concrete mass. (13.6-14.1) Reddish slag material. Faint coal tar-like odor. -Strong odor after 14 ft bgs through end of core. (14.1-14.3) Very fine grained gray vesicular slag or concrete mass. (14.3-16.0) Slag, little silt and clay; loose; fairly cohesive until crumbling; reddish coloring. (15.4) At 15.4, Crumbly blue limestone-like substance. -After 16 ft bg, weak sheen. (16.0-28.0) Fill material; very fine grained; loose to very loose; GLEY1 2.5/N, black; oversaturated; glass shards throughout (to 1/2 inch diameter), colored plastic pieces (<1/16 inch diameter); very soft and soupy; coal tar-like odor; faint sheen.
14							
15				988.0			
16							
17		16-20	2.4	392.2			
18							
19				20.1			
20							
21							

Well/Boring Construction



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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

PZ-15S was installed adjacent to PZ-14D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/07/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 40 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-10S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
21								
22		20-24	~1.4	30.7	(FILL)			
23								
24								
25		24-28	0.4	14.1				
26								
27								
28								
29				5.7	CL		CLAY (NATIVE): High plasticity; soft to medium stiff (1-1.5 tons/sft); 10YR 5/1, gray; wet; no odor.	
30		28-32	4.2					
31				9.1				
32								
33				5.3				
34		32-36	3.8					
35				7.4				
36								
37				5.8				
38			4.1					
39				7.6				
40							END OF BORING AT 40 FT BGS.	
41								

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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

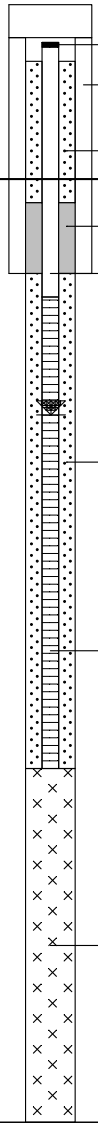
Interval descriptions expanded for full recovery.

PZ-15S was installed adjacent to PZ-14D, and uses the same core description. It was blind drilled to installation depth.

Date Start/Finish: 10/08/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-11S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.9			SILTY CLAY, SAND, and GRAVEL (FILL): nonplastic; dense/stiff to very stiff (3.5 tons/sft); crumbled moderately easily; very fine to very coarse grained sand; trace granule; little gravel (small to large pebble); subangular; 2.5Y 3/2, very dark grayish brown; dry; no odor.
2		0-4	2.9				
3				1.1			
4							SILT and CLAY (FILL): low plasticity; hard (>4.5 tons/sft); does not crumble easily; trace to little sand and granule; subangular to subrounded; poorly sorted; 10YR 4/1, dark gray; dry to moist; no odor.
5				0.9			
6		4-8	3.5				SILTY CLAY, SAND, and GRAVEL (FILL): nonplastic; dense/stiff to very stiff (3.5 tons/sft); crumbled moderately easily; very fine to very coarse grained sand; trace granule; little gravel (small to large pebble); subangular; 2.5Y 3/2, very dark grayish brown; saturated; no odor.
7				1.5			-Greenish-purple staining and odor from 7.4 to 7.5 ft bgs; fibrous woody pieces ~1 inch long, soft and flexible.
8							
9				65.9			SLAG, FILL, INDUSTRIAL and MUNICIPAL WASTE (FILL): Gley1 2.5/N, black throughout; saturated throughout; strong odor throughout. (8.0-10.6) Slag; very coarse grained (very coarse grained sand-size to granule; mostly granule to large pebble size); very loosely consolidated; trace silt; thick, viscous, black coating; moderate odor.
10		8-12	2.7		(FILL)		
11				88.0			(10.7-12.0) Silty, spongy fill; fine grained; little coarse sand-size particles; loosely consolidated; nonplastic.
12							(12.0-16.0) Slag; very coarse grained (very coarse grained sand-size to granule; mostly granule to large pebble size); very loosely consolidated; trace silt; thick, viscous, black coating; moderate odor. Oversaturated. Plastic bag-like material at bottom.
13				26.1			
14		12-16	1.8				
15				19.9			
16							(16.0-17.3) Poor recovery. Silty, spongy fill; 1 inch x 1 inch wood chunk; fine grained; little coarse sand-size particles; loosely consolidated; nonplastic.
17				6.5			(17.0-19.6) Liquified; no recovery.
18		16-20	1.2				
19				3.1			(19.6-20) Sand and silt; very fine grained; saturated.
20							
21							END OF BORING AT 20 FT BGS.

Well/Boring Construction



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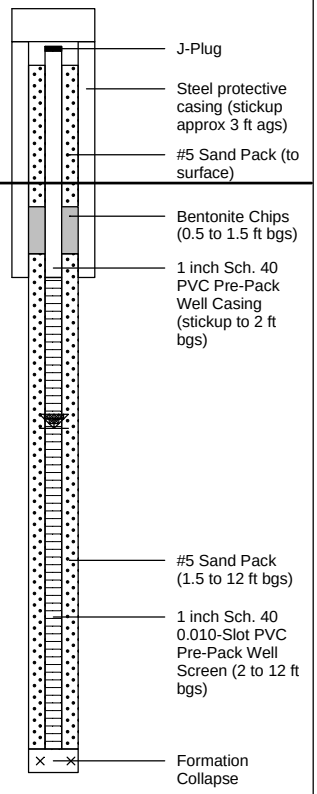
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

Date Start/Finish: 10/08/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 15.5 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-12S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				2.1			SAND and GRAVEL (FILL): very fine to very coarse grained sand; some granule; some small to large pebble; subangular to subrounded; poorly sorted; some to little silty clay; loosely consolidated (crumbles) but very stiff (>4.5 tons/sft); 2.5Y 3/2, very dark grayish brown; dry; no odor.
2		0-4	2.6				SILT (FILL): nonplastic; hard (>4.5 tons/sft), (crumbles when rolled); little clay; some sand to granule; subangular to subrounded; trace rootlets; 2.5Y 3/2, very dark grayish brown; dry to moist; no odor.
3				1.6			
4							
5				1.6			SAND and GRAVEL (FILL): very fine to very coarse grained sand; some granule; some small to large pebble; subangular to subrounded; poorly sorted; some to little silty clay; loosely consolidated (crumbles) but very stiff (>4.5 tons/sft); 2.5Y 3/2, very dark grayish brown; dry; no odor. (5.2) Moist to wet after 5.2 ft bgs.
6		4-8	2.2				
7				2.5			
8							SLAG, FILL, INDUSTRIAL and MUNICIPAL WASTE (FILL): (7.1-8.0) Rusted metal, plastic, wood; reddish coloring; 5YR 2.5/1, black; moist.
9				4.2			(8.0-12.0) Wood pieces, plastic; 1 inch diameter.
10		8-12	0.6		(FILL)		
11				19.7			
12							(12.0-15.2) Slag; coarse; loosely consolidated; trace metal (small springs) in interval; GLEY1 2.5/N, black; wet to saturated.
13							
14		12-15.5	1.4	10.9			
15							(15.2-15.5) Crushed limestone gravel or concrete; White N/8; dry; no odor.
16							END OF BORING AT 15.5 FT BGS.

Well/Boring Construction



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Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

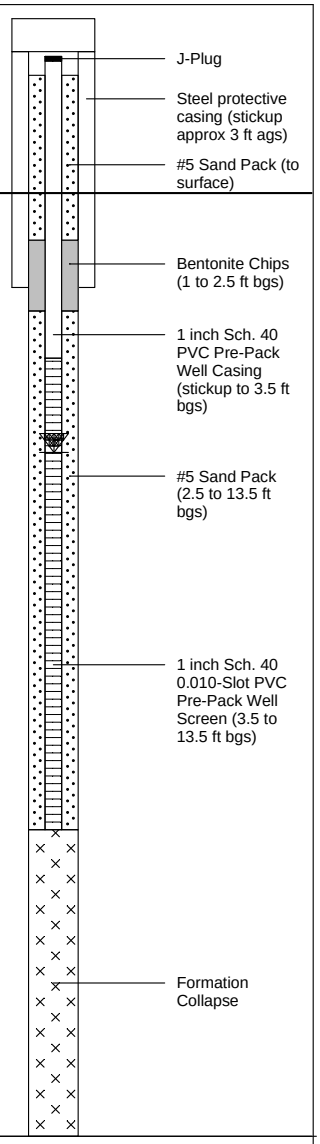
Interval descriptions expanded for full recovery.

Refusal at several locations in area on concreted slag. Refusal at 15.5 ft bgs.

Date Start/Finish: 10/08/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-13S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				214.0			ORGANIC Layer: Rootlets, twigs, reed pieces. SILTY CLAY, SAND, and GRAVEL (FILL): nonplastic; hard (>4.5 tons/sft); crumbles moderately easily; very fine to very coarse grained sand; little to some granule; trace gravel (small to large pebble); trace brick pieces; trace organics; 2.5Y 3/2, very dark grayish brown; moist; no odor. (2.9-3.0) Sandy
2		0-4	2.5				
3				128.5			
4							
5				25.7			
6		4-8	3.6				
7				5.2			SILT and CLAY (FILL): low plasticity; soft to medium stiff (2.5 tons/sft); can break apart with some effort; little to some sand to granule; poorly sorted; subangular to subrounded; trace organics (roots, wood fibers); 10YR 3/2, very dark grayish brown; moist to wet; no odor. (8.0-12.0) After 8 ft bgs, hard (>4.5 tons/sft).
8							
9				6.3			
10		8-12	2.9		(FILL)		
11				113.4			
12							
13				15,000			SLAG, FILL, INDUSTRIAL and MUNICIPAL WASTE (FILL): Gley1 2.5/N, black throughout; saturated throughout; strong odor throughout. (12.0-14.0) Silty, spongy fill; fine grained; little sand; coarse sand-sized particles; loosely consolidated; nonplastic. (14.0-16) Organic fibers in silty fill; thin plastic (bag or sheeting-thickness) throughout; organic-like wood pulp texture. (16.0-18.0) Sandier slag. (18.0-20.0) Silty, spongy fill; fine grained; little sand; coarse sand-sized particles; loosely consolidated; nonplastic.
14		12-16	2.9				
15				3,337			
16							
17				46.9			
18		16-20	2.0				
19				331.0			
20							
21							END OF BORING AT 20 FT BGS.

Well/Boring Construction



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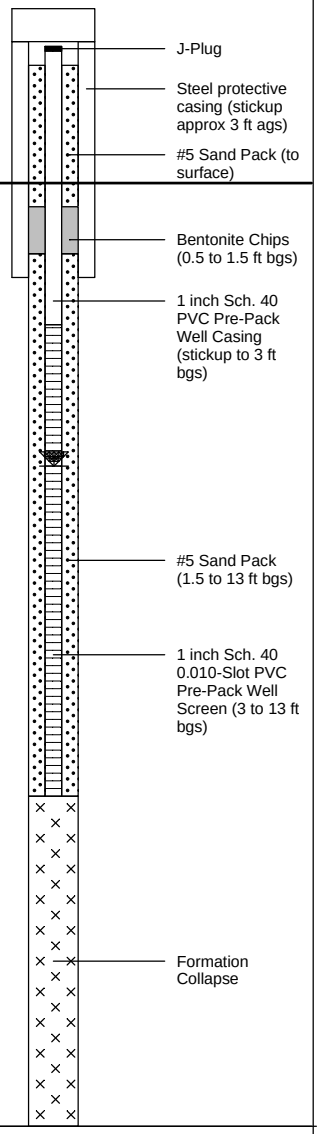
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

Date Start/Finish: 10/08/2015 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push **Sampling Method:** 4' Macrocore	**Northing:** --- **Easting:** --- **Casing Elevation:** --- **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **PZ-14S** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH	ELEVATION	Sample Interval	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				4.7			SILTY CLAY, SAND, and GRAVEL (FILL): nonplastic; hard (>4.5 tons/sft); some very fine to very coarse grained sand; little to some granule; trace to little gravel (small to large pebble); subangular; 10YR 3/2, very dark grayish brown; dry; no odor. (2.1) At end of interval, blue and yellow plastic-like sheet; semi flexible; stiff.
2		0-4	1.9				GRAVEL/CONCRETE (FILL): Crushed gravel or concrete; loose to very loose; pulverized to large pebble size; White N/8; dry.
3				1.8			SILTY CLAY, SAND, and GRAVEL (FILL): nonplastic; hard (>4.5 tons/sft); some very fine to very coarse grained sand; little to some granule; trace to little gravel (small to large pebble); subangular; 10YR 3/2, very dark grayish brown; dry to moist; no odor.
4							
5				1.2			
6		4-8	3.3				SILTY CLAY (FILL): medium plasticity; stiff (3.5 tons/sft); little to some fine to coarse grained sand; trace granule to large pebble; subangular; trace to little organics (wood, rootlets); GLEY1 2.5/N, black; moist to wet; no odor. (6.0) Water table at 6 ft bgs.
7				1.7			
8							SLAG, FILL, INDUSTRIAL and MUNICIPAL WASTE (FILL): GLEY1 2.5/N, black throughout; saturated throughout; odor throughout. (7.7-9.7) Slag; coarse grained; loosely consolidated; medium to very coarse grained sand-size, granule to large pebble size; silty matrix.
9				10.3			
10		8-12	1.9		(FILL)		(9.7-10.3) Spongier, more matrix, fewer granules. (10.3-12.0) Slag; coarse grained; loosely consolidated; medium to very coarse grained sand-size, granule to large pebble size; silty matrix.
11				11.0			
12							(12.0-14.2) Paper pulp, wood fibers, and wood chunks.
13				10.2			
14		12-16	1.3				(14.2-16.0) Slag; coarse grained; loosely consolidated; medium to very coarse grained sand-size, granule to large pebble size; silty matrix.
15				383.0			
16							(16.0-20.0) Low recovery. Appears same as above: wood; bright red spongy piece (1/2 inch by 1/2 inch), faint paint-like odor.
17							
18		16-20	0.2	141.7			
19							
20							
21							END OF BORING AT 20 FT BGS.

Well/Boring Construction



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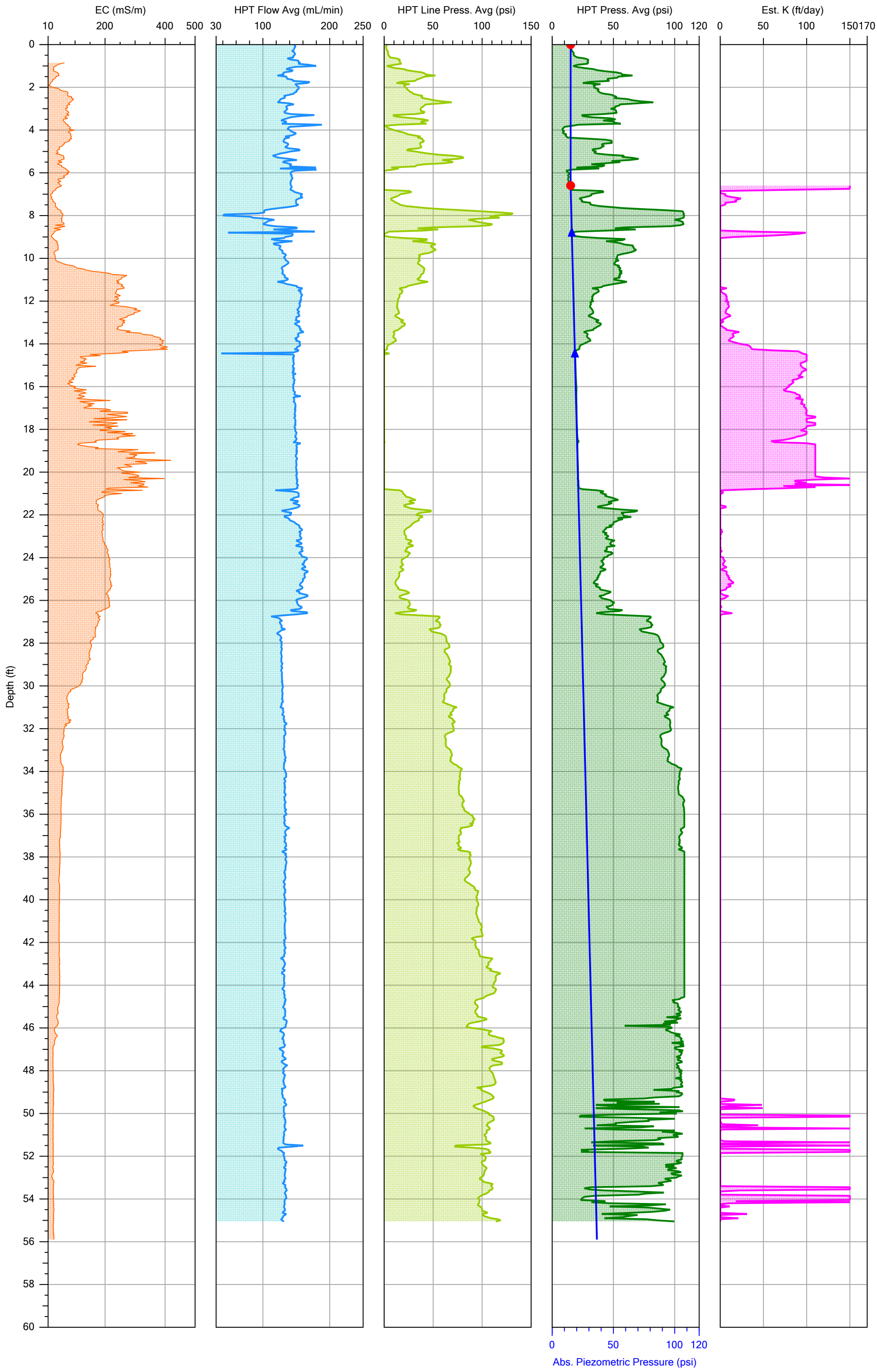
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; sft = square foot.

Interval descriptions expanded for full recovery.

APPENDIX C

Hydraulic Profiling Tool Logs



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-01.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/30/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 45″ N, 87° 34′ 6″ W

HPT-01.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.6	4.3	PASS
Test 2	97.0	93.8	3.3	PASS
Test 3	24.0	24.1	0.4	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Fri Oct 30 2015 11:32:45

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.508	0.0	106.920
TOP with FLOW>0	15.652	150.2	107.920
BOTTOM with FLOW=0	15.274	0.0	105.310
BOTTOM with FLOW>0	15.437	149.9	106.430

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20321A,0.0000,0.0000,0.0000,0.0000,9.9530e-1,-1.6370
LOG START TIME: Fri Oct 30 2015 11:38:17

LOG END DEPTH: 55.05 ft (16.779 m)
LOG END TIME: Fri Oct 30 2015 12:16:35

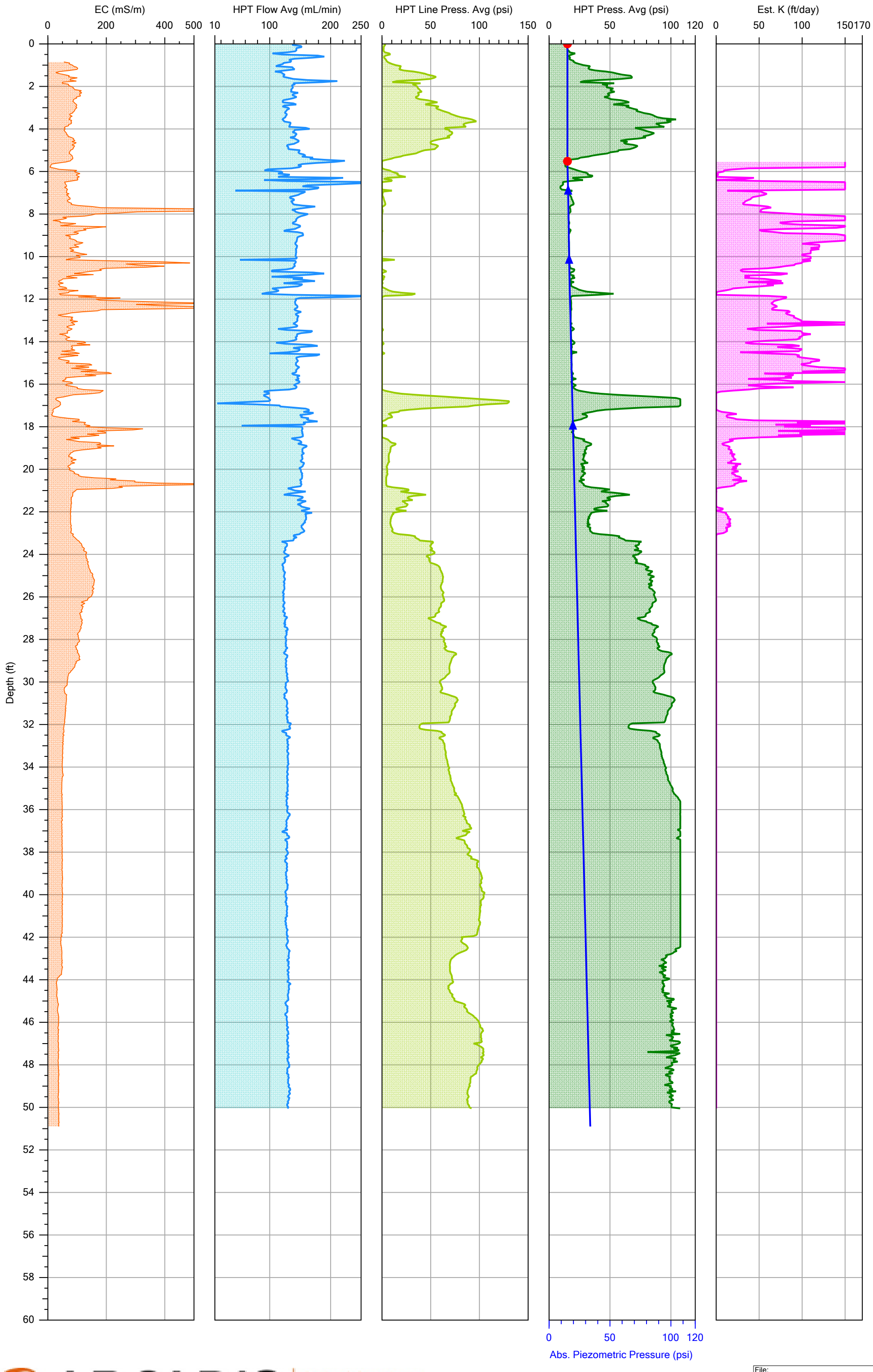
LATITUDE: 41.679123472
LONGITUDE: -87.568384444
ELEVATION: 185.558 METERS 608.79 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Fri Oct 30 2015 12:17:23

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-03.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 11/2/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 45″ N, 87° 33′ 57″ W

HPT-03.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.8	4.2	PASS
Test 2	97.0	94.0	3.1	PASS
Test 3	24.0	24.4	1.7	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Mon Nov 2 2015 16:10:54

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.498	0.0	106.860
TOP with FLOW>0	15.647	142.7	107.880
BOTTOM with FLOW=0	15.300	0.0	105.490
BOTTOM with FLOW>0	15.446	143.4	106.500

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.20 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20502A,0.0000,0.0000,0.0000,0.0000,9.9220e-1,-1.3770
LOG START TIME: Mon Nov 2 2015 16:18:09

LOG END DEPTH: 50.05 ft (15.255 m)
LOG END TIME: Mon Nov 2 2015 16:50:07

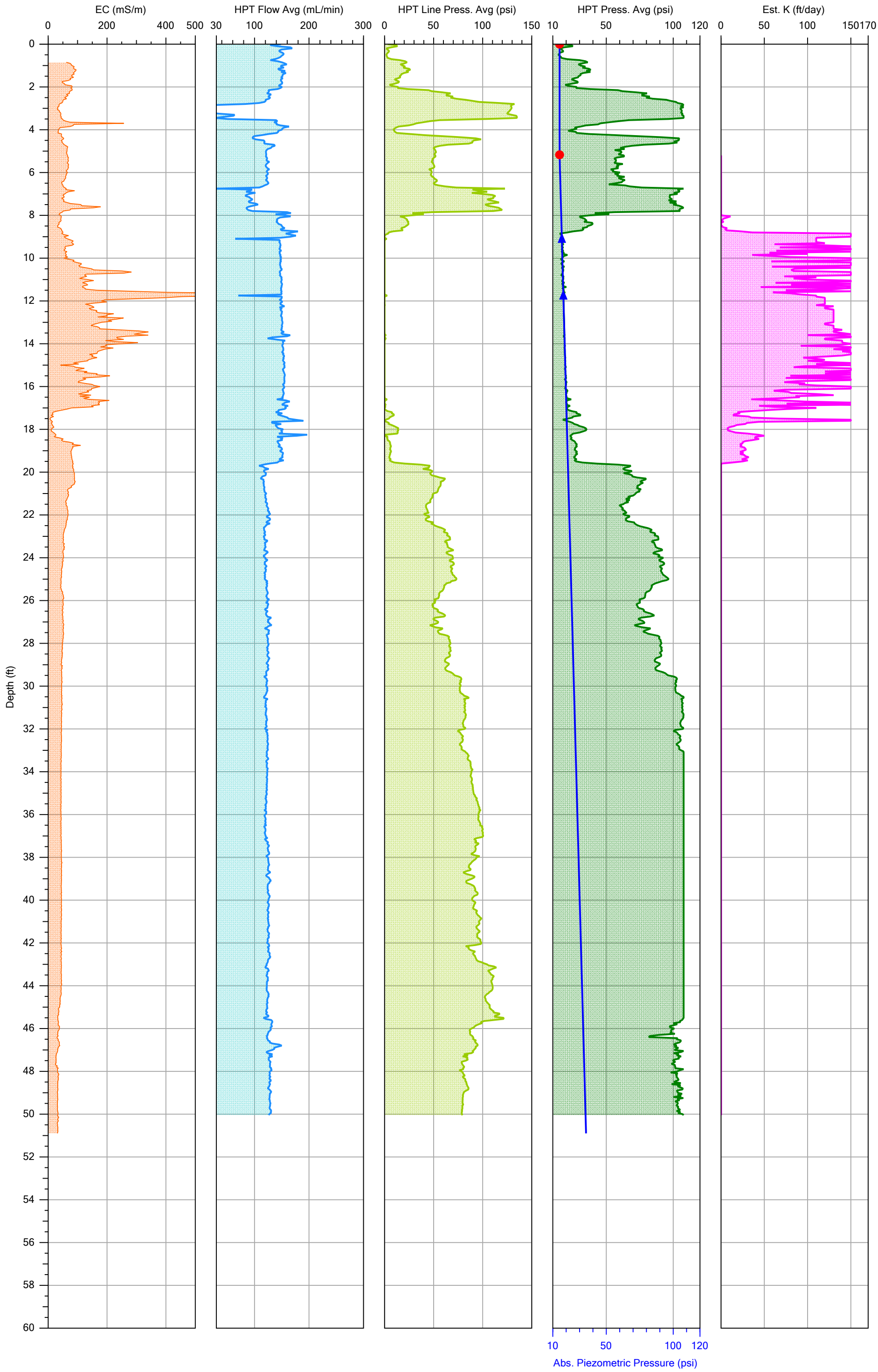
LATITUDE: 41.679063939
LONGITUDE: -87.565892727
ELEVATION: 180.155 METERS 591.06 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Mon Nov 2 2015 16:50:09

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-04.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 11/2/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 45″ N, 87° 33′ 52″ W

HPT-04.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.2	4.5	PASS
Test 2	97.0	93.9	3.2	PASS
Test 3	24.0	24.1	0.4	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Mon Nov 2 2015 15:04:12

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.503	0.0	106.890
TOP with FLOW>0	15.674	148.7	108.070
BOTTOM with FLOW=0	15.272	0.0	105.300
BOTTOM with FLOW>0	15.444	149.7	106.480

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20502A,0.0000,0.0000,0.0000,0.0000,9.9220e-1,-1.3770
LOG START TIME: Mon Nov 2 2015 15:09:21

LOG END DEPTH: 50.05 ft (15.255 m)
LOG END TIME: Mon Nov 2 2015 15:41:03

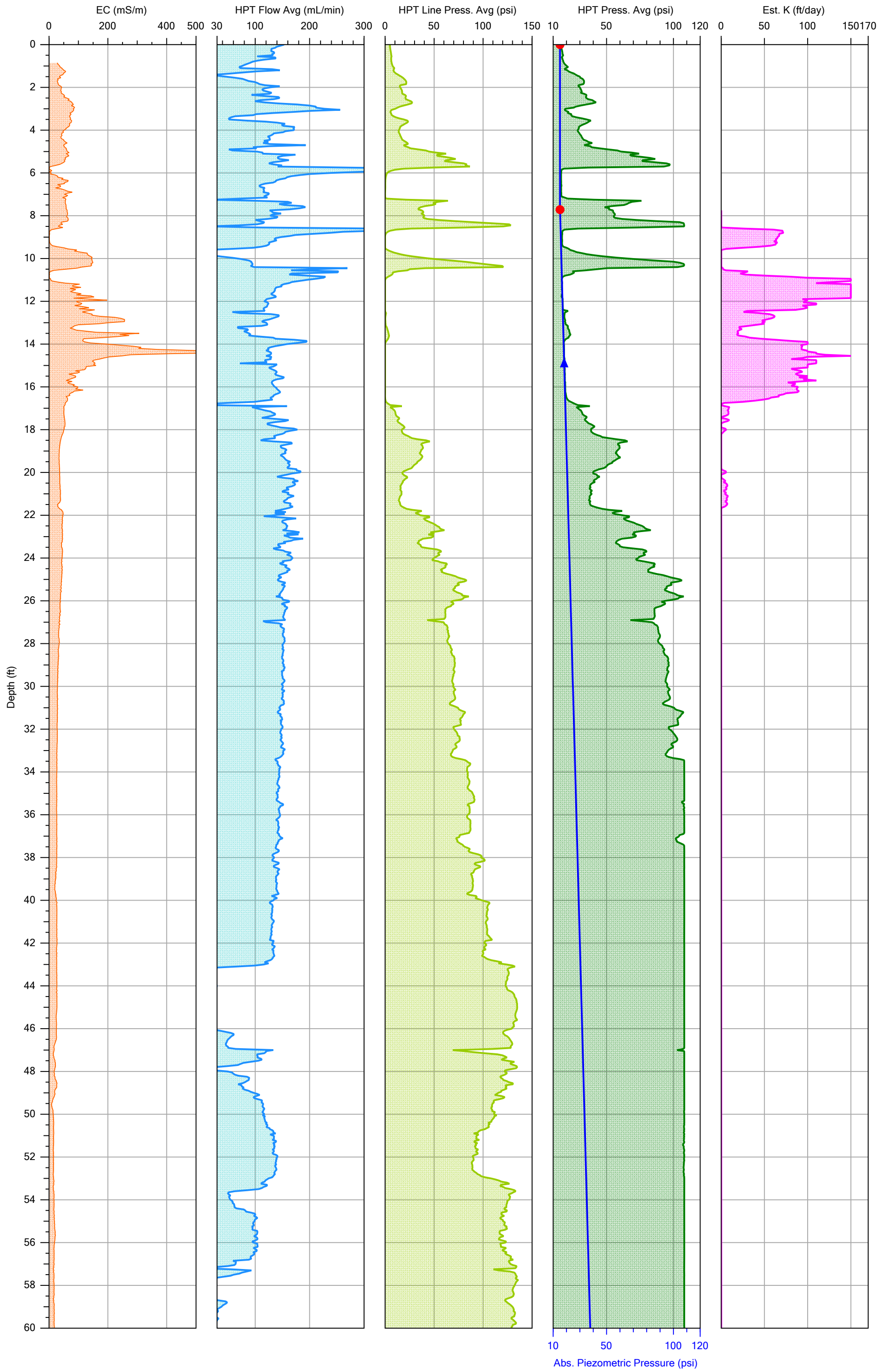
LATITUDE: 41.679181316
LONGITUDE: -87.564547456
ELEVATION: 177.668 METERS 582.90 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Mon Nov 2 2015 15:41:06

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-05.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/26/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 43″ N, 87° 33′ 52″ W

HPT-05.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	184.8	5.2	PASS
Test 2	97.0	93.1	4.0	PASS
Test 3	24.0	23.7	1.4	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Mon Oct 26 2015 14:59:02

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.582	0.0	107.430
TOP with FLOW>0	15.783	131.3	108.820
BOTTOM with FLOW=0	15.366	0.0	105.950
BOTTOM with FLOW>0	15.470	124.3	106.660

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20486A,0.0000,0.0000,0.0000,0.0000,9.9480e-1,-1.4180
LOG START TIME: Mon Oct 26 2015 15:05:56

Probe advancement with HPT flow valve and/or pump switch turned off at 7.25 ft (2.210 m).
Probe advancement with HPT flow valve and/or pump switch turned off at 9.70 ft (2.957 m).
Probe advancement with HPT flow valve and/or pump switch turned off at 16.90 ft (5.151 m).
LOG END DEPTH: 60.20 ft (18.349 m)
LOG END TIME: Mon Oct 26 2015 15:53:18

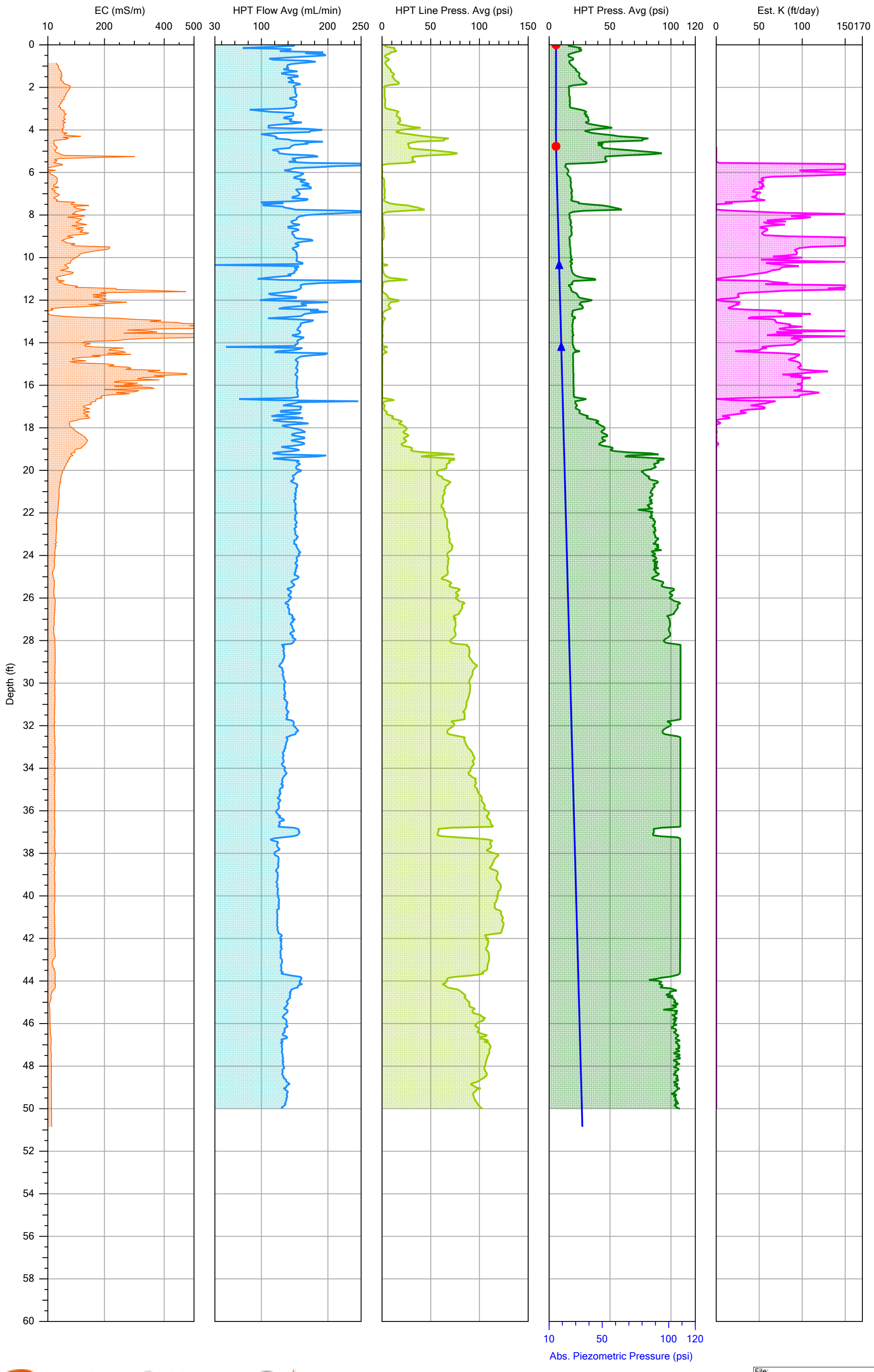
LATITUDE: 41.678689074
LONGITUDE: -87.564565926
ELEVATION: 185.233 METERS 607.72 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Mon Oct 26 2015 15:58:28

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-07.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/27/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 40″ N, 87° 33′ 52″ W

HPT-07.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	185.6	4.8	PASS
Test 2	97.0	93.6	3.5	PASS
Test 3	24.0	23.9	0.4	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 27 2015 09:12:24

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.617	0.0	107.680
TOP with FLOW>0	15.722	151.0	108.400
BOTTOM with FLOW=0	15.391	0.0	106.120
BOTTOM with FLOW>0	15.499	150.5	106.860

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20486A,0.0000,0.0000,0.0000,0.0000,9.9480e-1,-1.4180
LOG START TIME: Tue Oct 27 2015 09:15:41

LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Tue Oct 27 2015 10:03:44

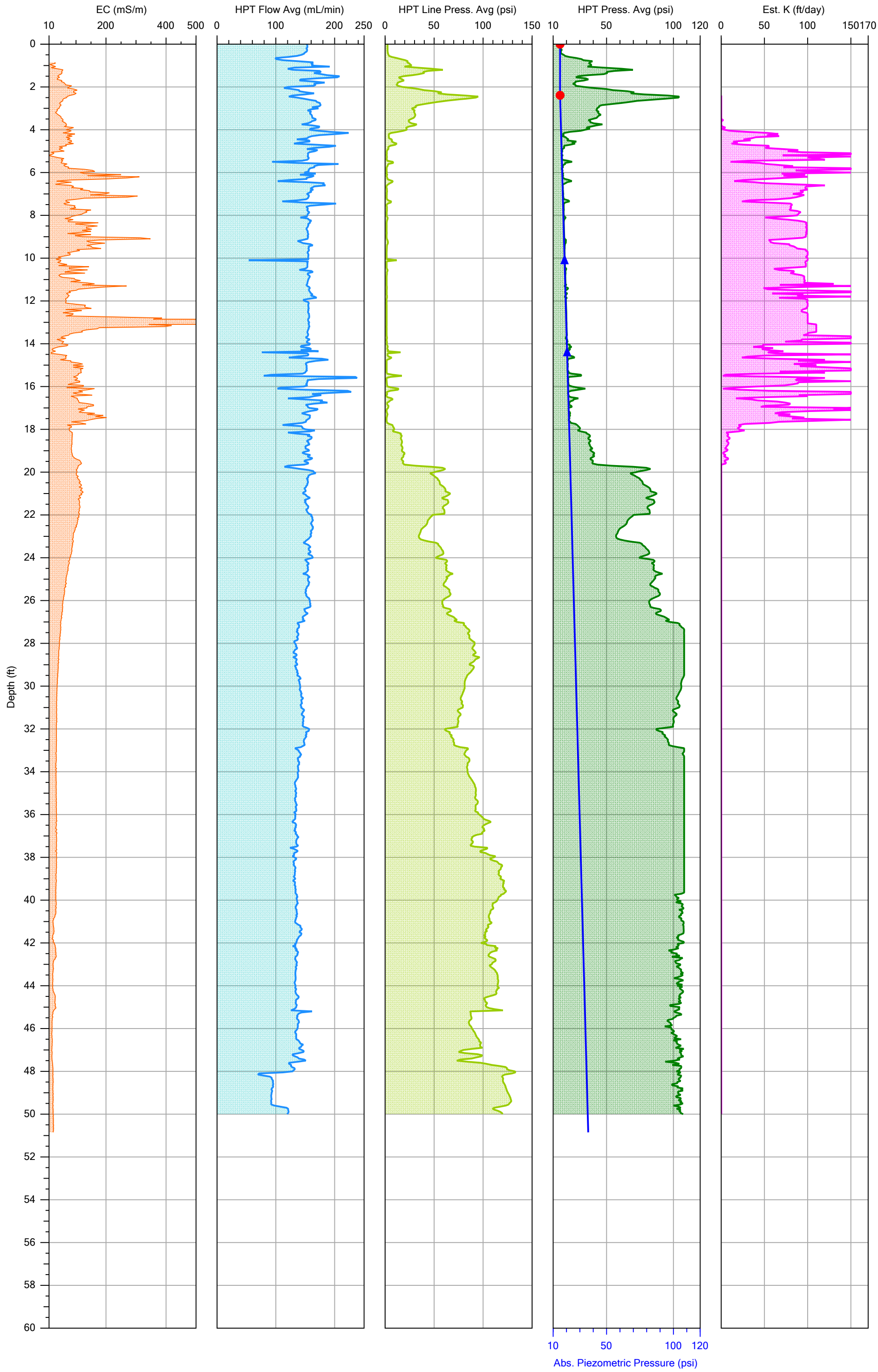
LATITUDE: 41.677745000
LONGITUDE: -87.564580926
ELEVATION: 182.339 METERS 598.22 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 27 2015 10:03:47

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-08.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/27/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 38″ N, 87° 33′ 52″ W

HPT-08.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.3	4.5	PASS
Test 2	97.0	93.7	3.4	PASS
Test 3	24.0	24.0	0.1	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 27 2015 11:21:43

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.642	0.0	107.850
TOP with FLOW>0	15.865	156.4	109.380
BOTTOM with FLOW=0	15.419	0.0	106.310
BOTTOM with FLOW>0	15.640	152.6	107.830

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20486A,0.0000,0.0000,0.0000,0.0000,9.9480e-1,-1.4180
LOG START TIME: Tue Oct 27 2015 11:24:32

LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Tue Oct 27 2015 11:58:31

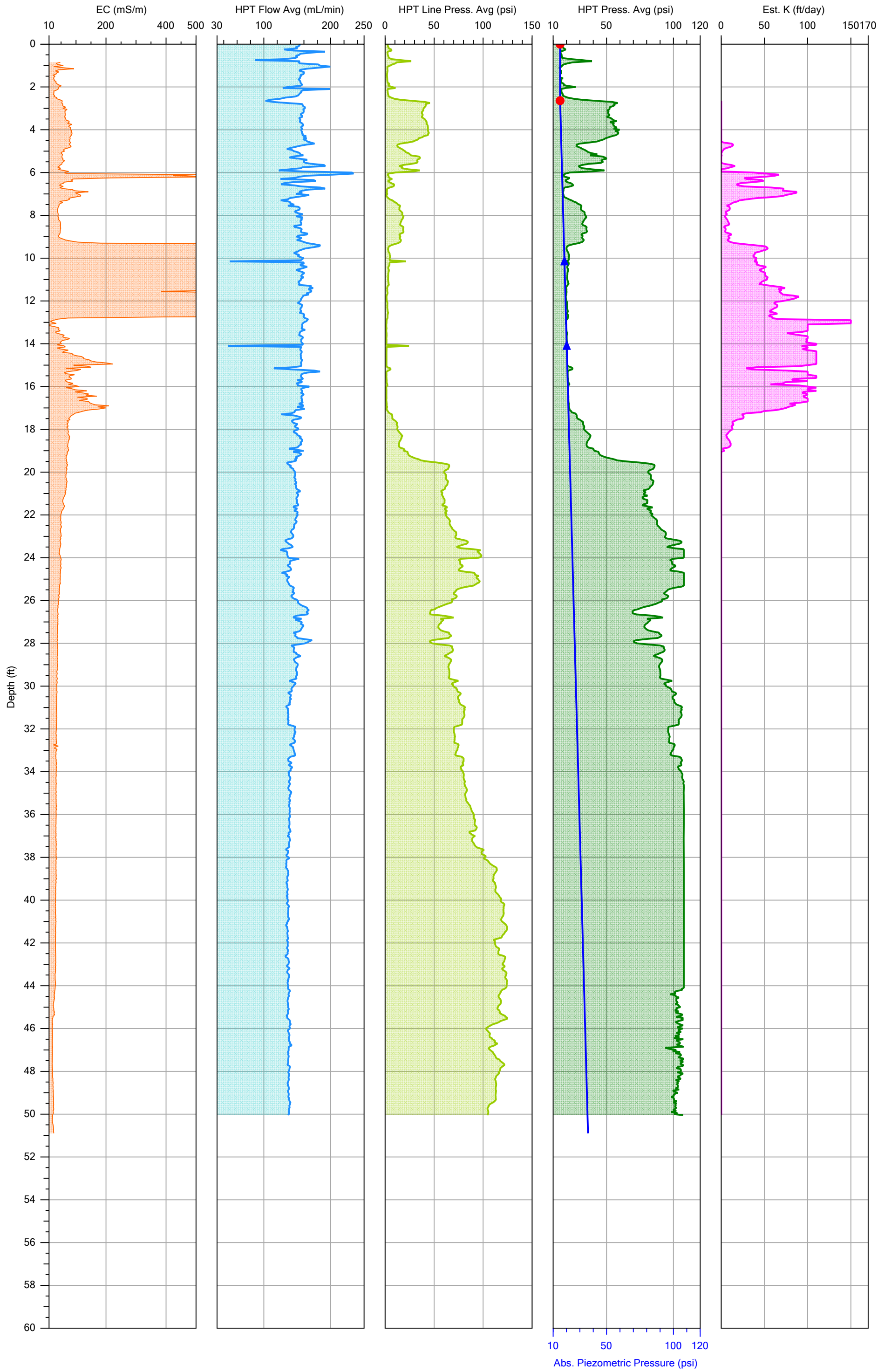
LATITUDE: 41.677256410
LONGITUDE: -87.564553077
ELEVATION: 185.146 METERS 607.43 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 27 2015 11:58:38

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-09.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/27/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 36″ N, 87° 33′ 52″ W

HPT-09.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.6	4.3	PASS
Test 2	97.0	93.8	3.3	PASS
Test 3	24.0	24.0	0.1	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 27 2015 12:53:04

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.652	0.0	107.920
TOP with FLOW>0	15.823	154.8	109.090
BOTTOM with FLOW=0	15.420	0.0	106.320
BOTTOM with FLOW>0	15.584	154.4	107.450

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20486A,0.0000,0.0000,0.0000,0.0000,9.9480e-1,-1.4180
LOG START TIME: Tue Oct 27 2015 12:57:12

LOG END DEPTH: 50.05 ft (15.255 m)
LOG END TIME: Tue Oct 27 2015 13:31:18

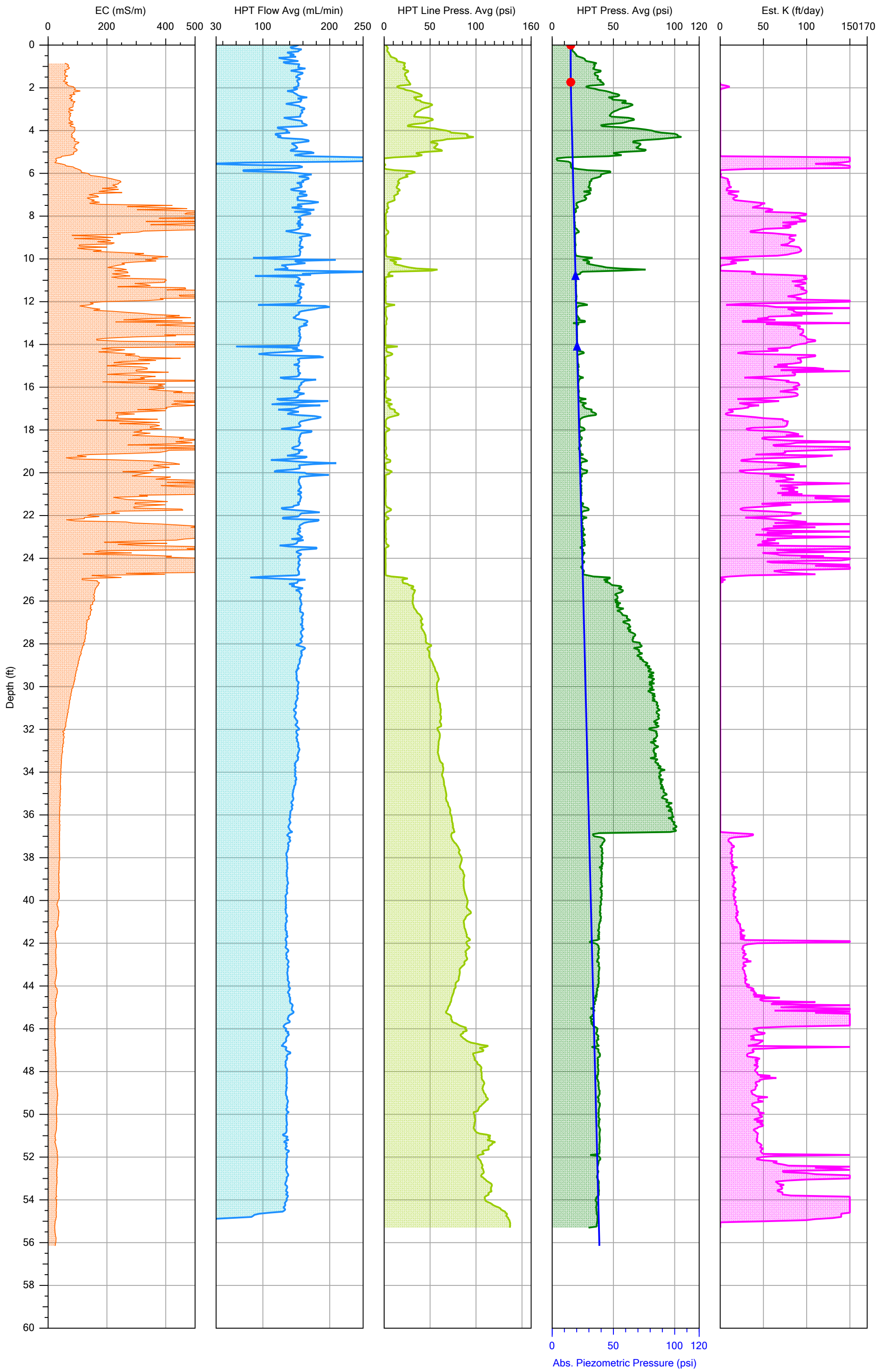
LATITUDE: 41.676721250
LONGITUDE: -87.564494375
ELEVATION: 179.963 METERS 590.43 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 27 2015 13:31:21

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-10.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/27/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 35″ N, 87° 33′ 52″ W

HPT-10.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.5	4.4	PASS
Test 2	97.0	93.9	3.2	PASS
Test 3	24.0	24.1	0.5	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 27 2015 14:16:15

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.570	0.0	107.350
TOP with FLOW>0	15.709	153.0	108.310
BOTTOM with FLOW=0	15.344	0.0	105.800
BOTTOM with FLOW>0	15.502	154.1	106.880

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20486A,0.0000,0.0000,0.0000,0.0000,9.9480e-1,-1.4180
LOG START TIME: Tue Oct 27 2015 14:19:38

LOG END DEPTH: 55.30 ft (16.855 m)
LOG END TIME: Tue Oct 27 2015 14:56:15

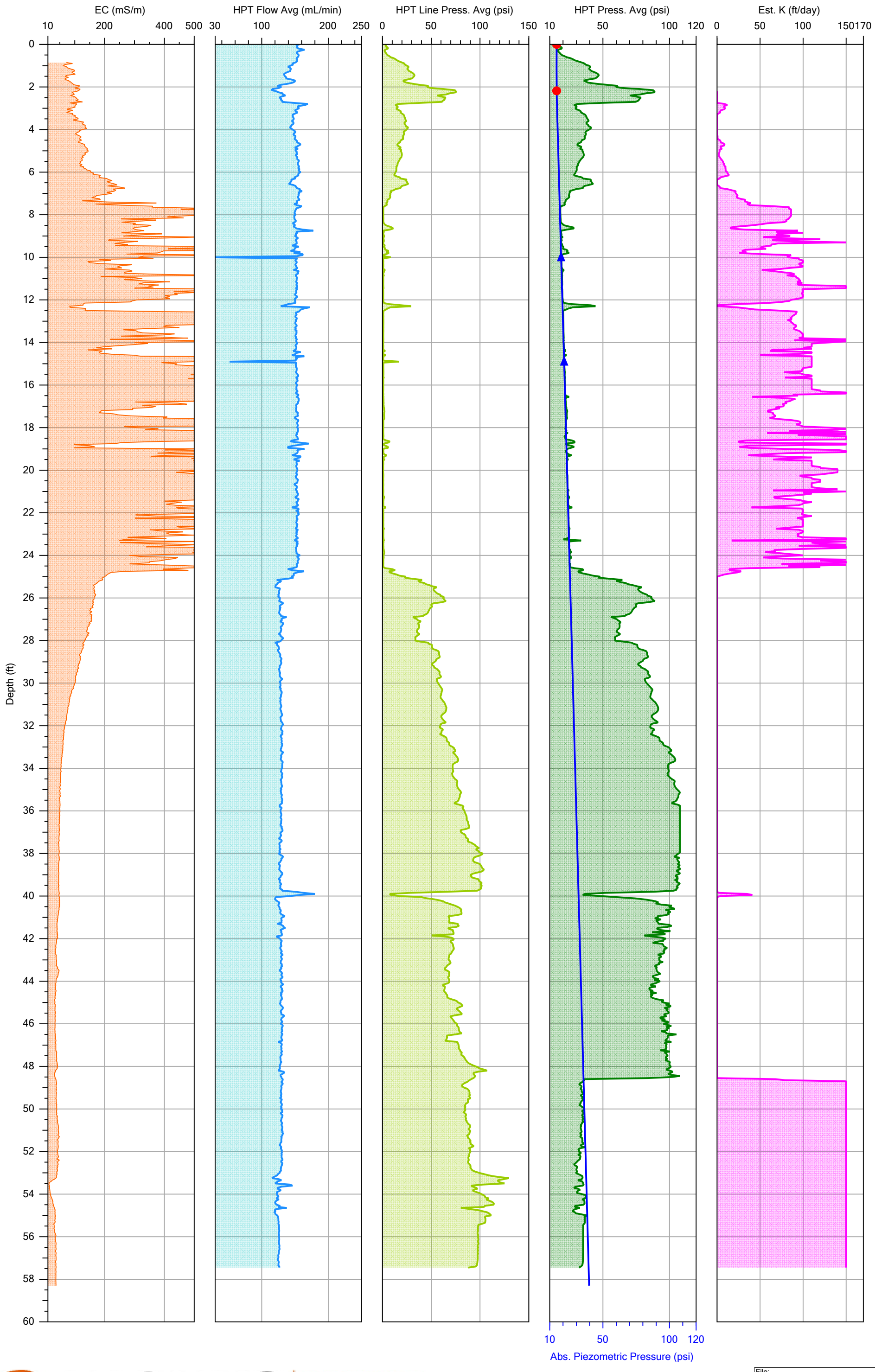
LATITUDE: 41.676318333
LONGITUDE: -87.564540417
ELEVATION: 184.038 METERS 603.80 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 27 2015 14:56:21

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-10A.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 11/3/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 35″ N, 87° 33′ 52″ W

HPT-10a.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.3	4.5	PASS
Test 2	97.0	93.5	3.6	PASS
Test 3	24.0	23.8	0.8	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Nov 3 2015 08:52:53

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.604	0.0	107.580
TOP with FLOW>0	15.777	156.9	108.780
BOTTOM with FLOW=0	15.386	0.0	106.080
BOTTOM with FLOW>0	15.551	155.5	107.220

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20502A,0.0000,0.0000,0.0000,0.0000,9.9220e-1,-1.3770
LOG START TIME: Tue Nov 3 2015 08:57:53

LOG END DEPTH: 57.45 ft (17.511 m)
LOG END TIME: Tue Nov 3 2015 09:40:47

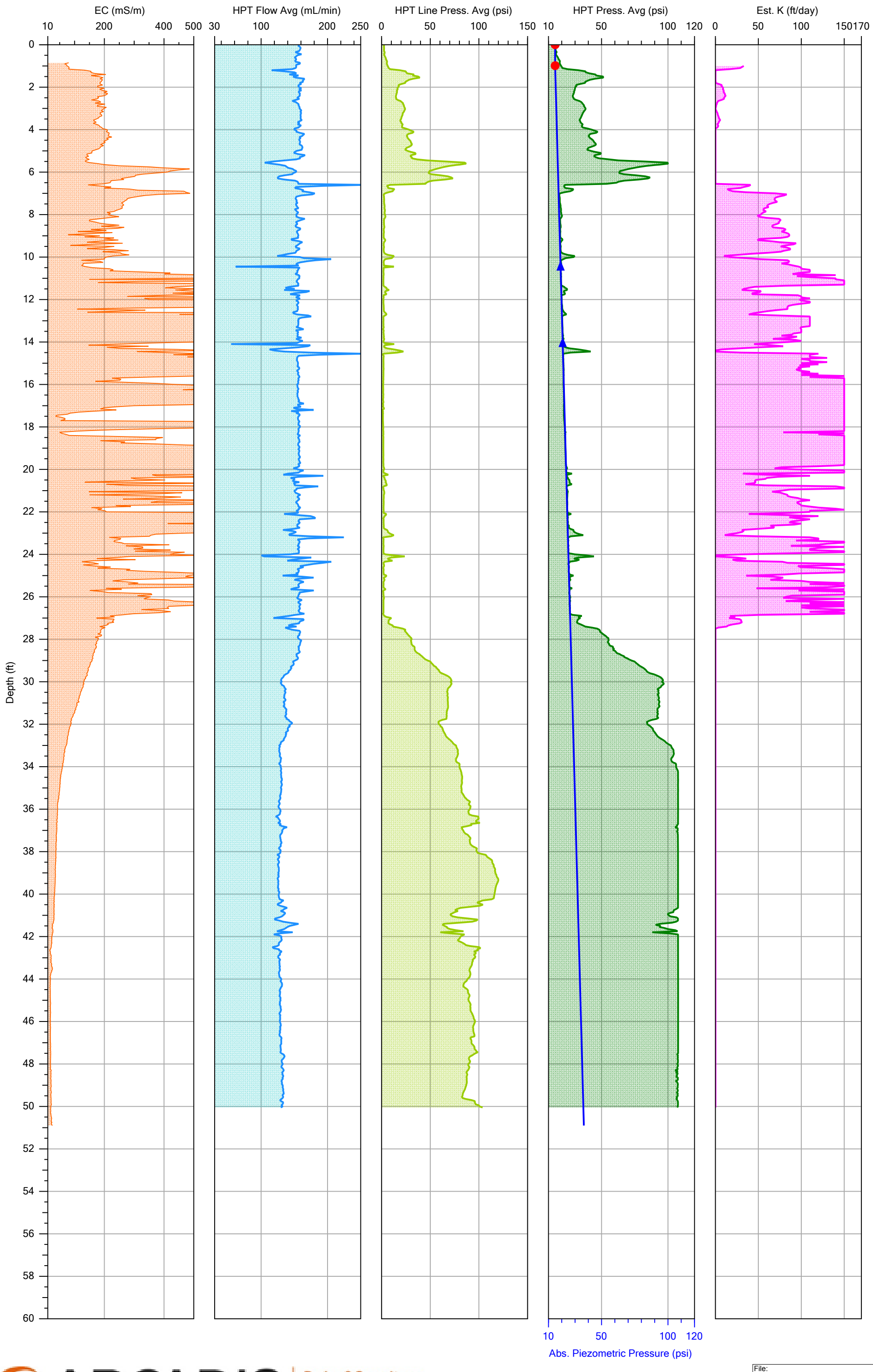
LATITUDE: 41.676357143
LONGITUDE: -87.564541667
ELEVATION: 184.557 METERS 605.50 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Nov 3 2015 09:40:50

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-11.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/27/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 33″ N, 87° 33′ 52″ W

HPT-11.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.7	4.3	PASS
Test 2	97.0	93.6	3.5	PASS
Test 3	24.0	23.9	0.3	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Tue Oct 27 2015 16:44:31

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.445	0.0	106.490
TOP with FLOW>0	15.587	155.4	107.470
BOTTOM with FLOW=0	15.239	0.0	105.070
BOTTOM with FLOW>0	15.391	157.9	106.120

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Tue Oct 27 2015 16:48:44

LOG END DEPTH: 50.05 ft (15.255 m)
LOG END TIME: Tue Oct 27 2015 17:21:48

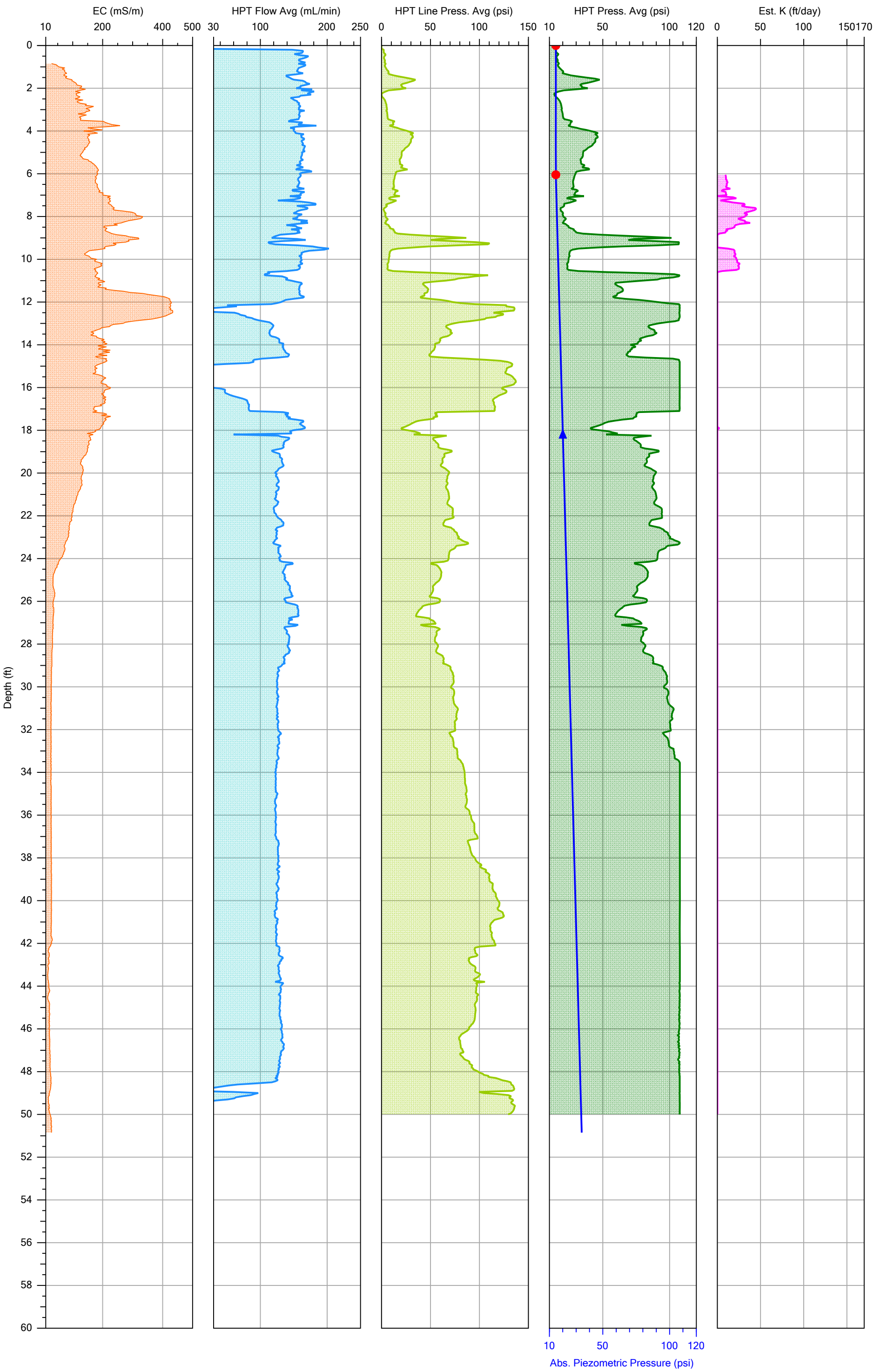
LATITUDE: 41.675744688
LONGITUDE: -87.564522083
ELEVATION: 182.150 METERS 597.60 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Tue Oct 27 2015 17:21:51

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-12.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/28/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 31″ N, 87° 33′ 52″ W

HPT-12.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.5	4.4	PASS
Test 2	97.0	93.7	3.4	PASS
Test 3	24.0	24.0	0.1	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2015 09:17:31

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.227	0.0	104.990
TOP with FLOW>0	15.348	163.2	105.820
BOTTOM with FLOW=0	14.991	0.0	103.360
BOTTOM with FLOW>0	15.097	163.7	104.090

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.24 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
Probe advancement with HPT flow valve and/or pump switch turned off at 0.00 ft (0.000 m).
LOG START TIME: Wed Oct 28 2015 09:23:45

LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Wed Oct 28 2015 10:01:11

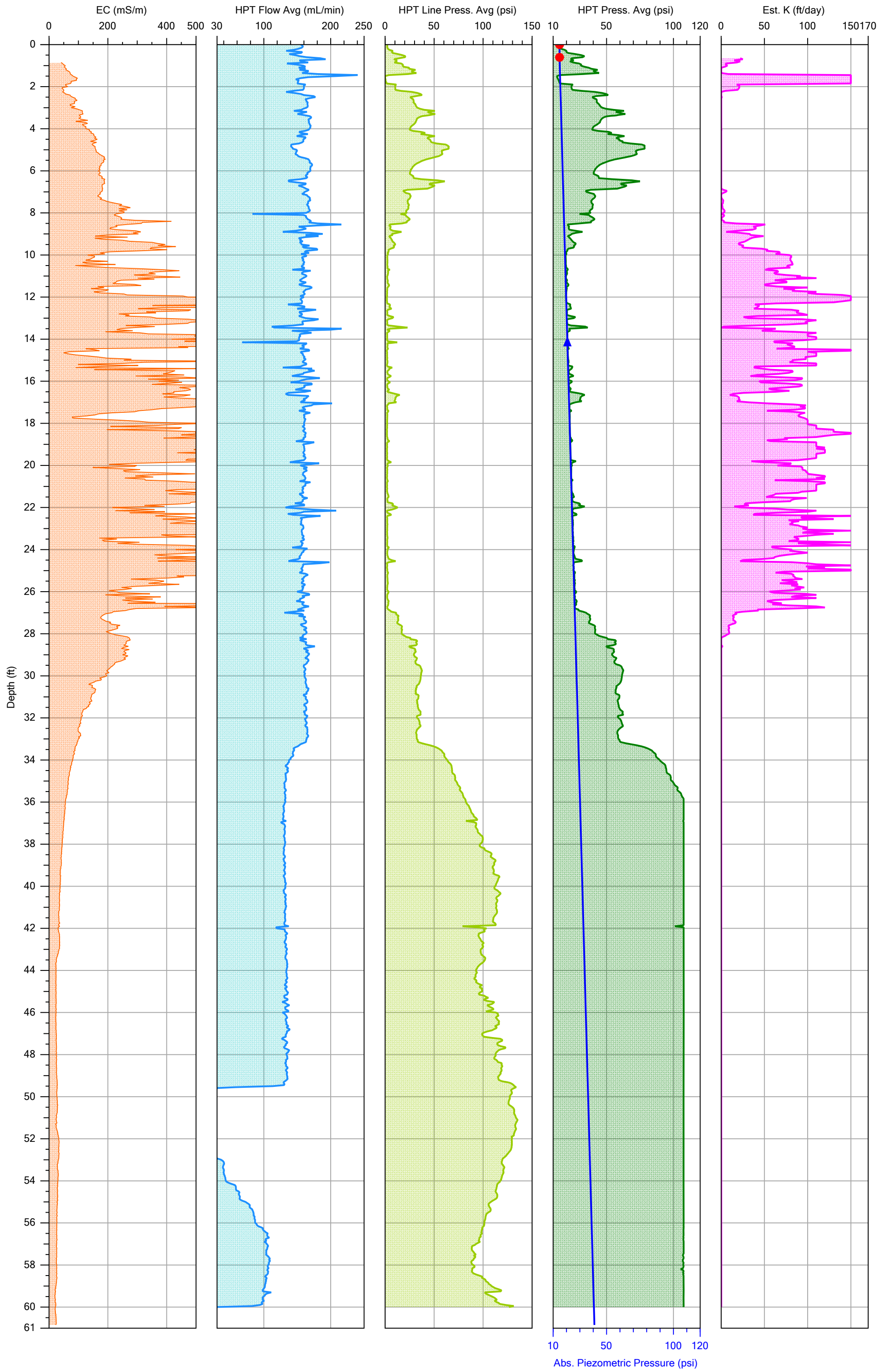
LATITUDE: 41.675216771
LONGITUDE: -87.564522813
ELEVATION: 184.225 METERS 604.41 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2015 10:01:18

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-13.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/28/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 29″ N, 87° 33′ 52″ W

HPT-13.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	185.7	4.8	PASS
Test 2	97.0	93.6	3.5	PASS
Test 3	24.0	24.1	0.5	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2015 10:36:18

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.228	0.0	104.990
TOP with FLOW>0	15.384	155.7	106.070
BOTTOM with FLOW=0	15.018	0.0	103.550
BOTTOM with FLOW>0	15.171	156.5	104.600

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Wed Oct 28 2015 10:42:11

LOG END DEPTH: 60.00 ft (18.288 m)
LOG END TIME: Wed Oct 28 2015 11:27:04

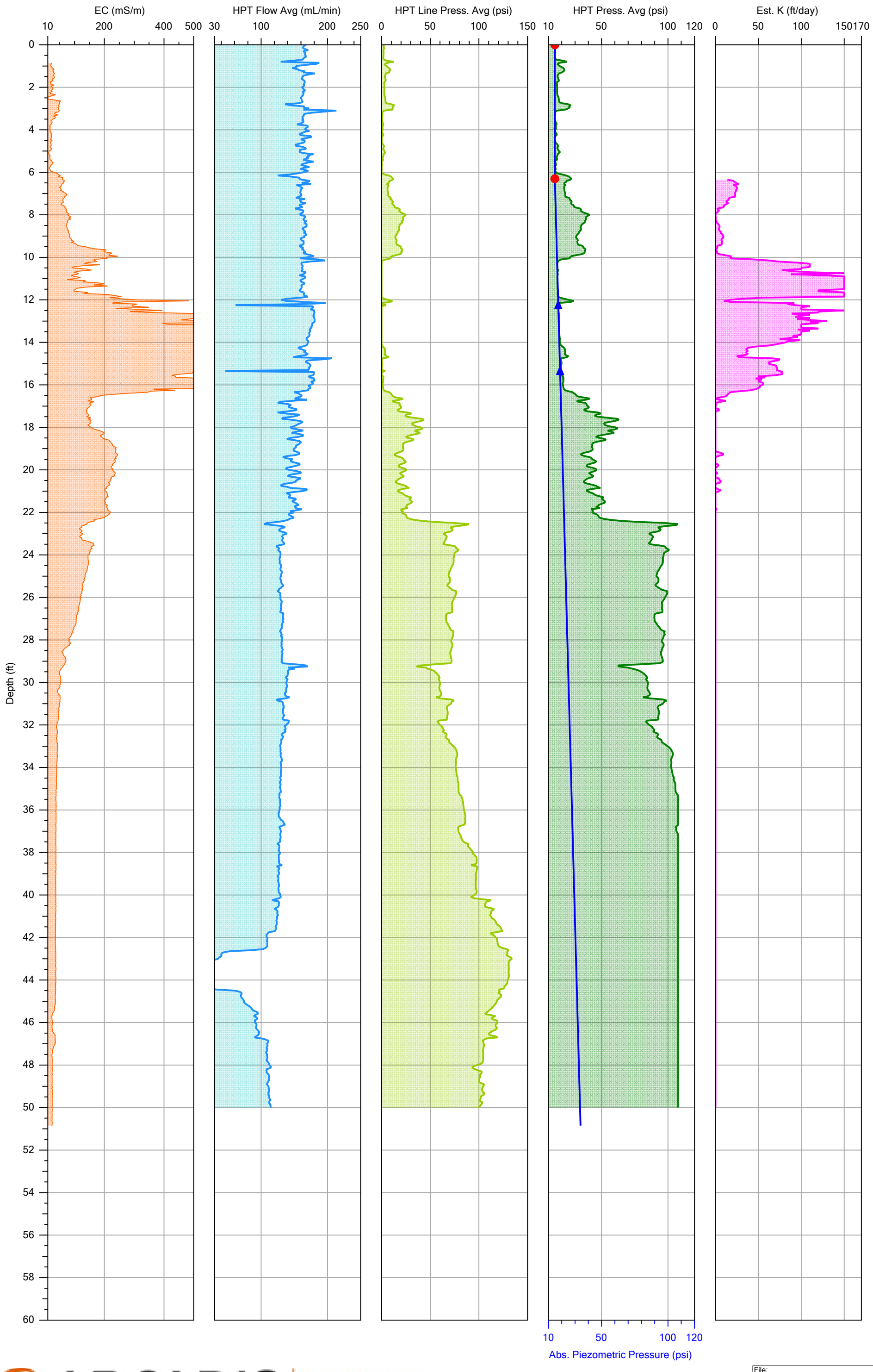
LATITUDE: 41.674679231
LONGITUDE: -87.564529487
ELEVATION: 182.585 METERS 599.03 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2015 11:27:14

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-14.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/28/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 26″ N, 87° 33′ 53″ W

HPT-14.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.8	4.2	PASS
Test 2	97.0	94.0	3.1	PASS
Test 3	24.0	24.2	0.9	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2015 12:01:55

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.242	0.0	105.090
TOP with FLOW>0	15.371	159.3	105.980
BOTTOM with FLOW=0	15.018	0.0	103.540
BOTTOM with FLOW>0	15.167	159.5	104.570

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Wed Oct 28 2015 12:08:18

LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Wed Oct 28 2015 12:57:35

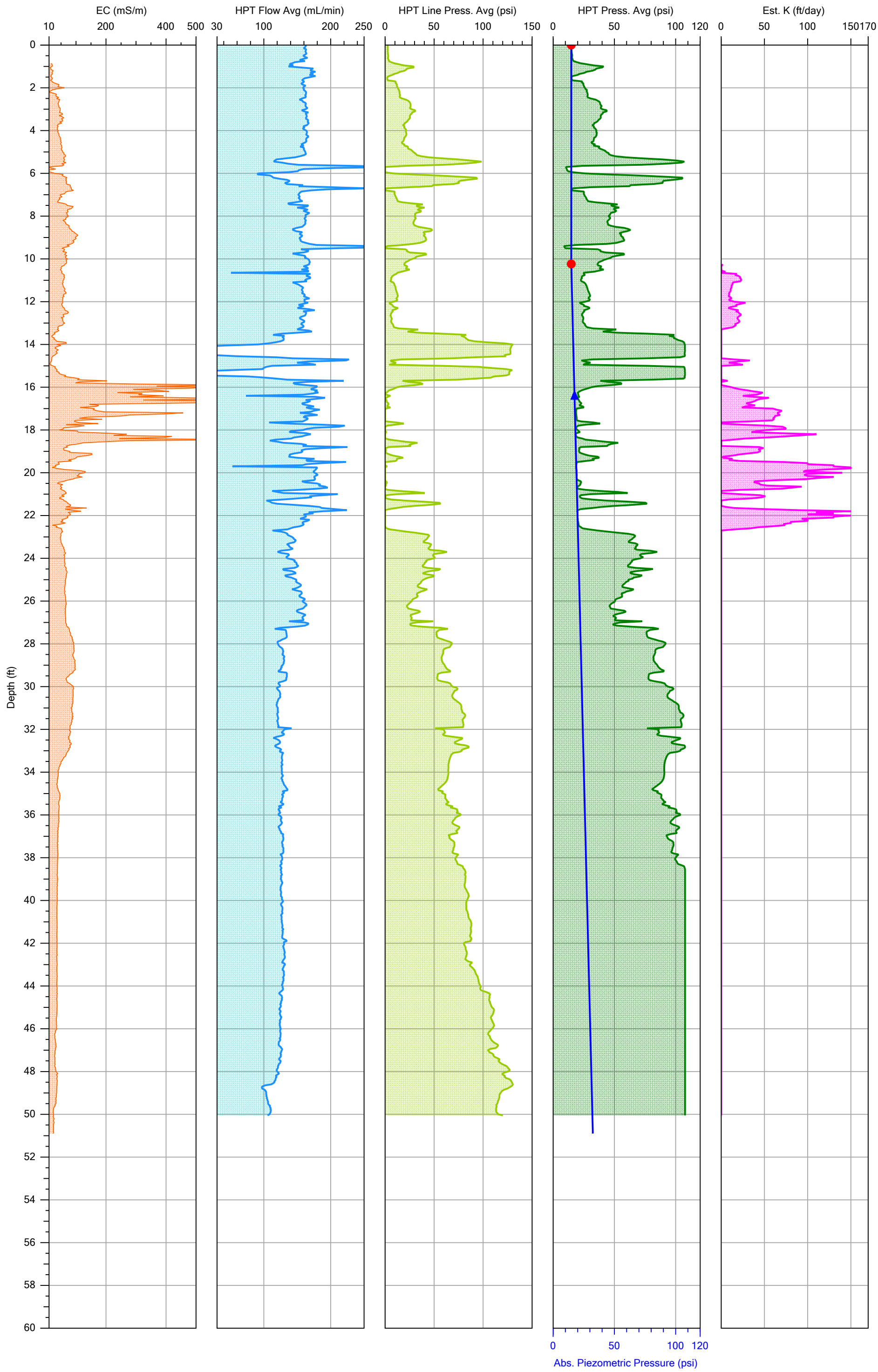
LATITUDE: 41.673981414
LONGITUDE: -87.564612626
ELEVATION: 183.491 METERS 602.00 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2015 12:57:38

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-15.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/28/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 26″ N, 87° 33′ 55″ W

HPT-15.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.3	4.4	PASS
Test 2	97.0	93.9	3.2	PASS
Test 3	24.0	24.0	0.2	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2015 13:38:07

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.223	0.0	104.960
TOP with FLOW>0	15.367	162.2	105.950
BOTTOM with FLOW=0	15.016	0.0	103.530
BOTTOM with FLOW>0	15.164	162.0	104.550

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.4 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Wed Oct 28 2015 13:44:49

LOG END DEPTH: 50.05 ft (15.255 m)
LOG END TIME: Wed Oct 28 2015 14:35:32

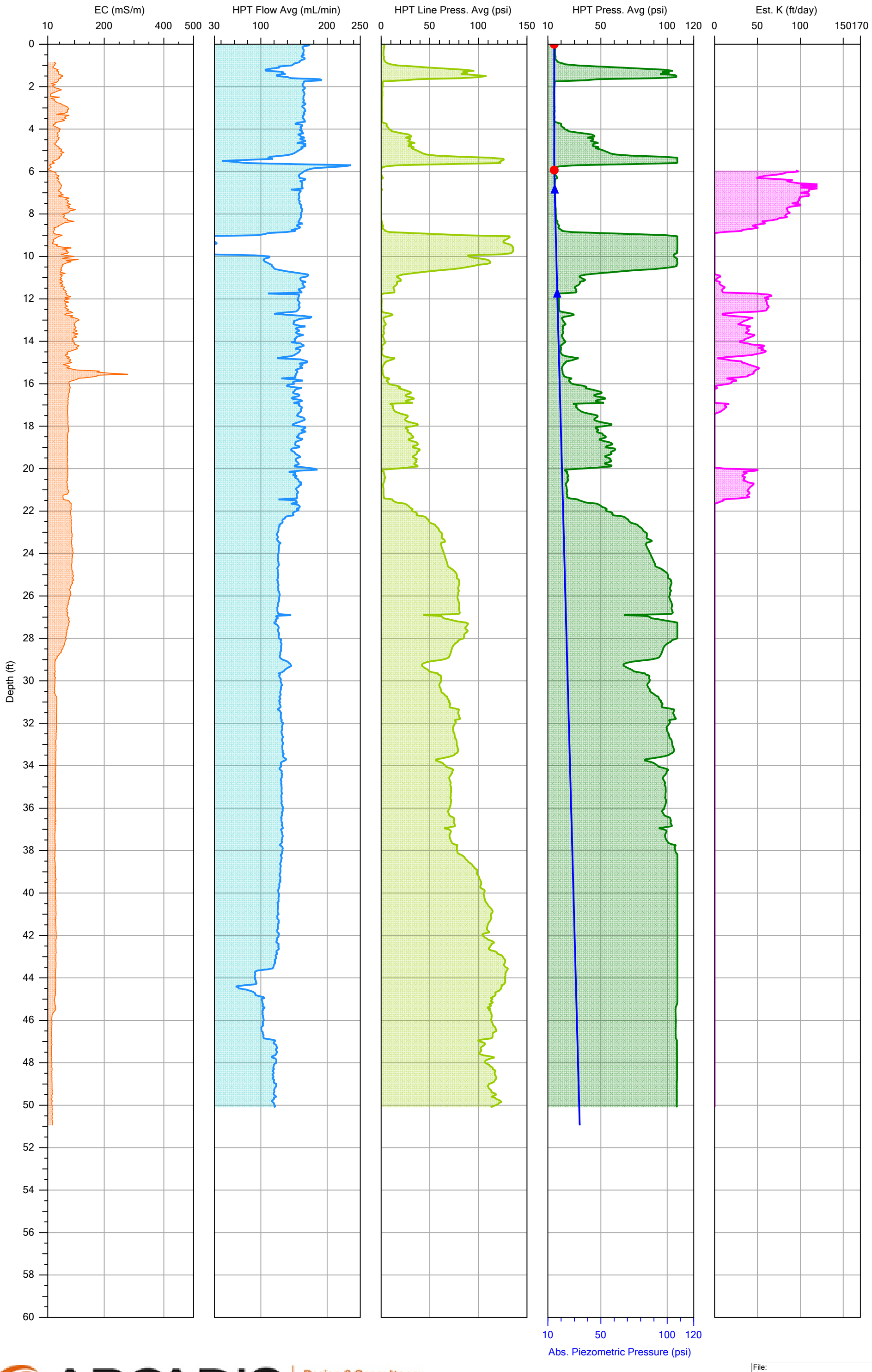
LATITUDE: 41.673986667
LONGITUDE: -87.565342333
ELEVATION: 188.020 METERS 616.86 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2015 14:35:34

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-16.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/28/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 26″ N, 87° 33′ 58″ W

HPT-16.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.2	4.5	PASS
Test 2	97.0	93.7	3.4	PASS
Test 3	24.0	24.1	0.4	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2015 15:54:36

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.228	0.0	104.990
TOP with FLOW>0	15.337	161.6	105.740
BOTTOM with FLOW=0	15.002	0.0	103.430
BOTTOM with FLOW>0	15.122	158.4	104.260

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Wed Oct 28 2015 16:00:04

LOG END DEPTH: 50.10 ft (15.270 m)
LOG END TIME: Wed Oct 28 2015 16:39:26

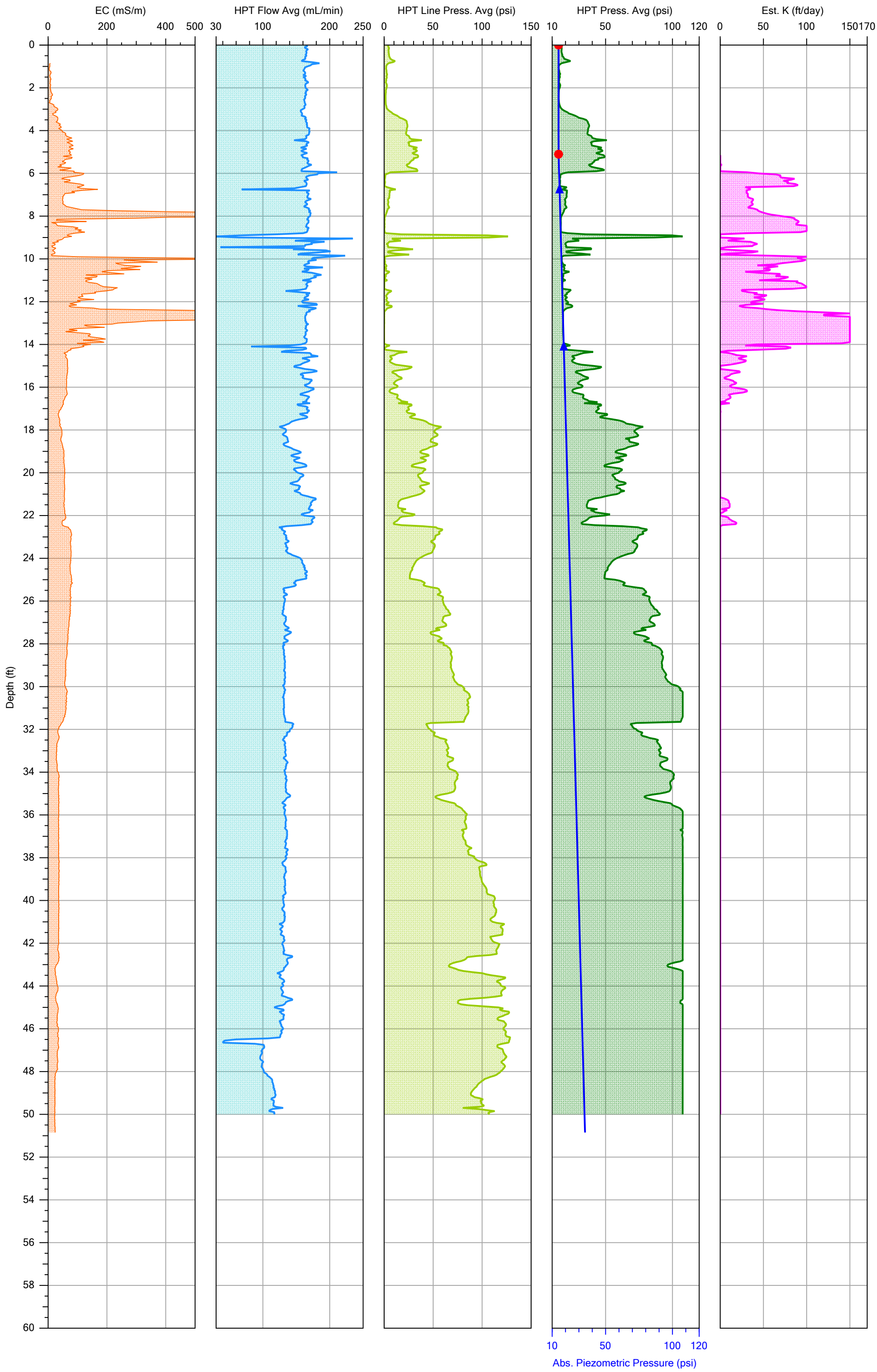
LATITUDE: 41.673866667
LONGITUDE: -87.566154375
ELEVATION: 187.450 METERS 614.99 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2015 16:39:29

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-17.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/28/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 26″ N, 87° 34′ 1″ W

HPT-17.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.4	4.4	PASS
Test 2	97.0	93.9	3.2	PASS
Test 3	24.0	24.1	0.4	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Wed Oct 28 2015 17:17:55

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.251	0.0	105.150
TOP with FLOW>0	15.415	161.2	106.280
BOTTOM with FLOW=0	15.031	0.0	103.630
BOTTOM with FLOW>0	15.188	159.6	104.710

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Wed Oct 28 2015 17:22:48

LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Wed Oct 28 2015 18:00:09

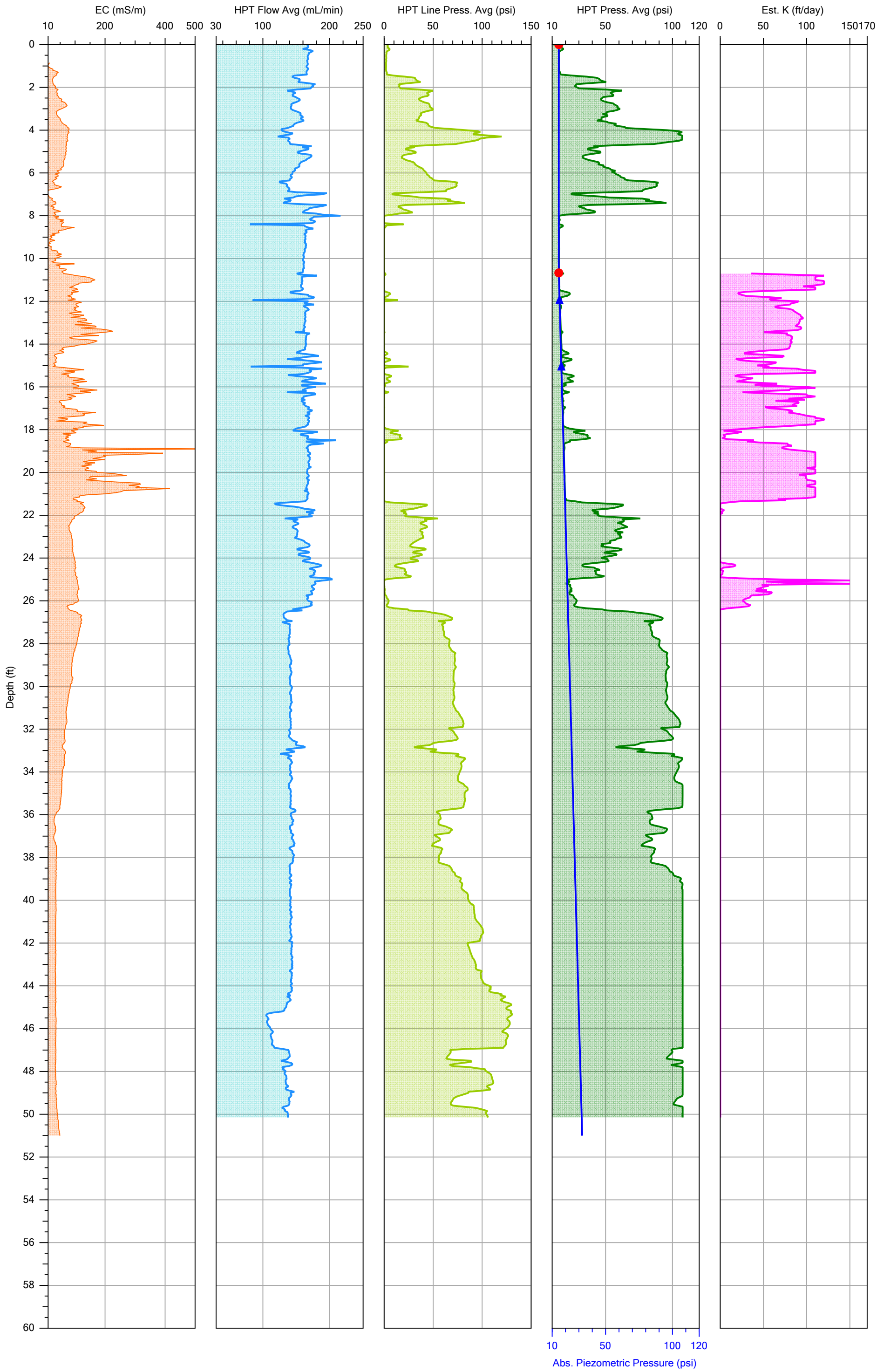
LATITUDE: 41.673920556
LONGITUDE: -87.567078056
ELEVATION: 183.025 METERS 600.48 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Wed Oct 28 2015 18:00:11

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-18.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/29/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 30″ N, 87° 34′ 12″ W

HPT-18.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.6	4.3	PASS
Test 2	97.0	93.6	3.5	PASS
Test 3	24.0	24.1	0.5	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2015 11:35:55

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.385	0.0	106.070
TOP with FLOW>0	15.535	167.1	107.110
BOTTOM with FLOW=0	15.156	0.0	104.500
BOTTOM with FLOW>0	15.310	167.4	105.560

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Thu Oct 29 2015 11:41:26

LOG END DEPTH: 50.15 ft (15.286 m)
LOG END TIME: Thu Oct 29 2015 12:11:50

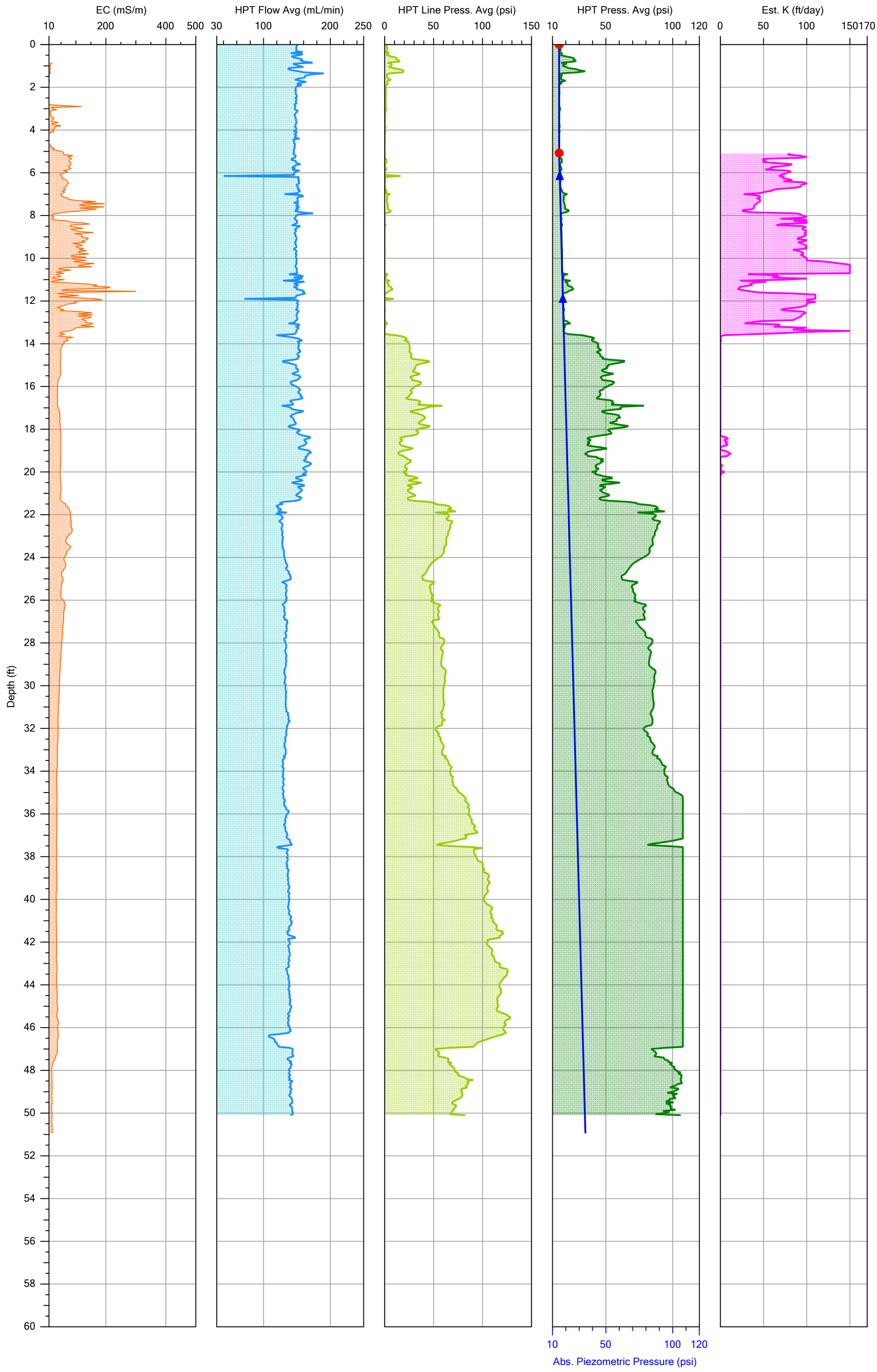
LATITUDE: 41.674919444
LONGITUDE: -87.569966667
ELEVATION: 184.800 METERS 606.30 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2015 12:11:54

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-19.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/29/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 26″ N, 87° 34′ 7″ W

HPT-19.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.3	4.5	PASS
Test 2	97.0	93.7	3.4	PASS
Test 3	24.0	24.0	0.0	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2015 10:31:58

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.397	0.0	106.160
TOP with FLOW>0	15.526	150.5	107.050
BOTTOM with FLOW=0	15.179	0.0	104.660
BOTTOM with FLOW>0	15.315	151.1	105.590

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Thu Oct 29 2015 10:38:50

LOG END DEPTH: 50.10 ft (15.270 m)
LOG END TIME: Thu Oct 29 2015 11:07:40

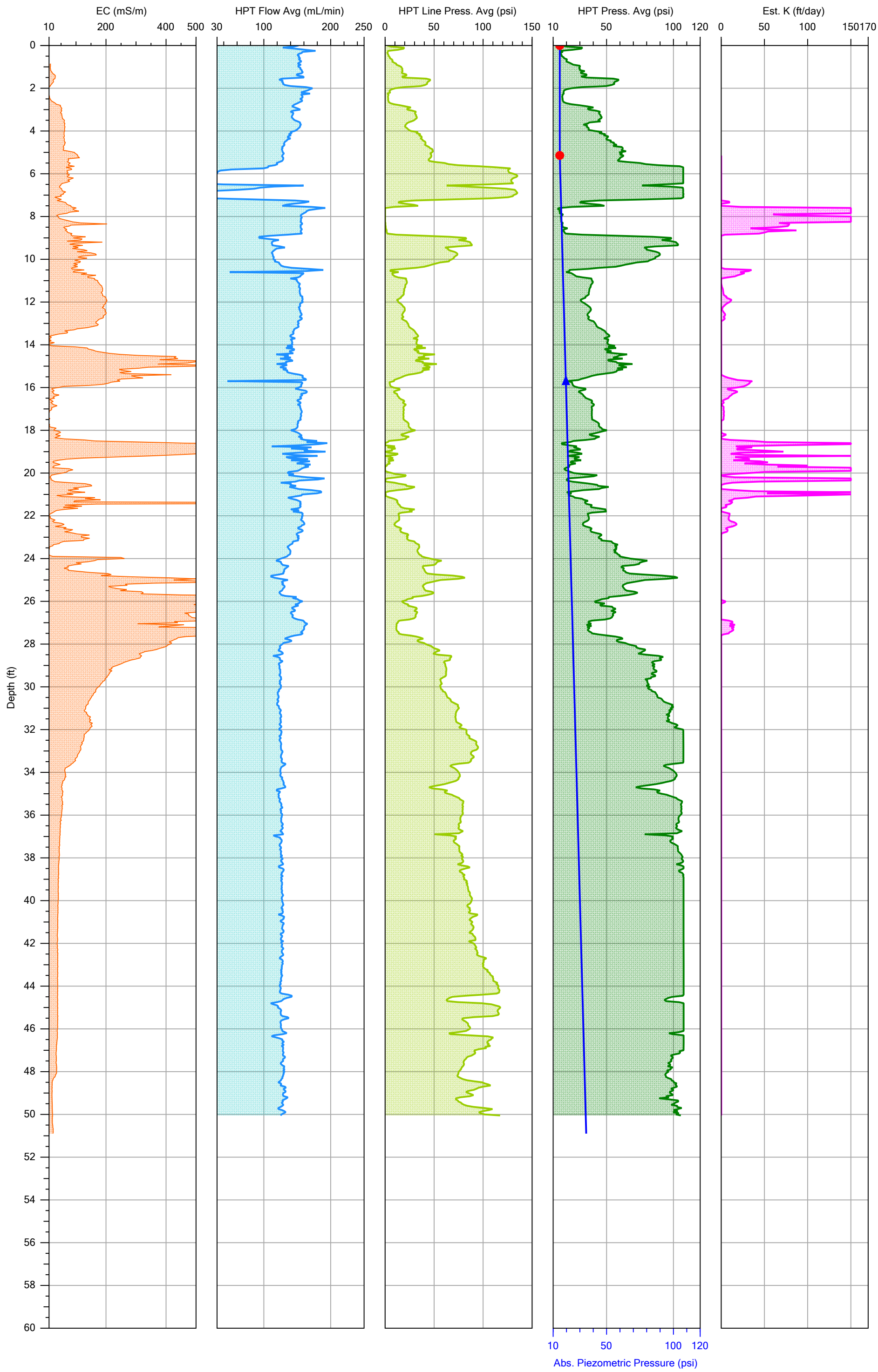
LATITUDE: 41.673976905
LONGITUDE: -87.568746190
ELEVATION: 185.400 METERS 608.27 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2015 11:07:42

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-20.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/29/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 36″ N, 87° 34′ 15″ W

HPT-20.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	185.8	4.7	PASS
Test 2	97.0	93.8	3.3	PASS
Test 3	24.0	24.1	0.6	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2015 12:58:06

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.380	0.0	106.040
TOP with FLOW>0	15.499	152.2	106.860
BOTTOM with FLOW=0	15.167	0.0	104.580
BOTTOM with FLOW>0	15.279	155.6	105.340

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.21 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Thu Oct 29 2015 13:01:22

LOG END DEPTH: 50.05 ft (15.255 m)
LOG END TIME: Thu Oct 29 2015 13:34:34

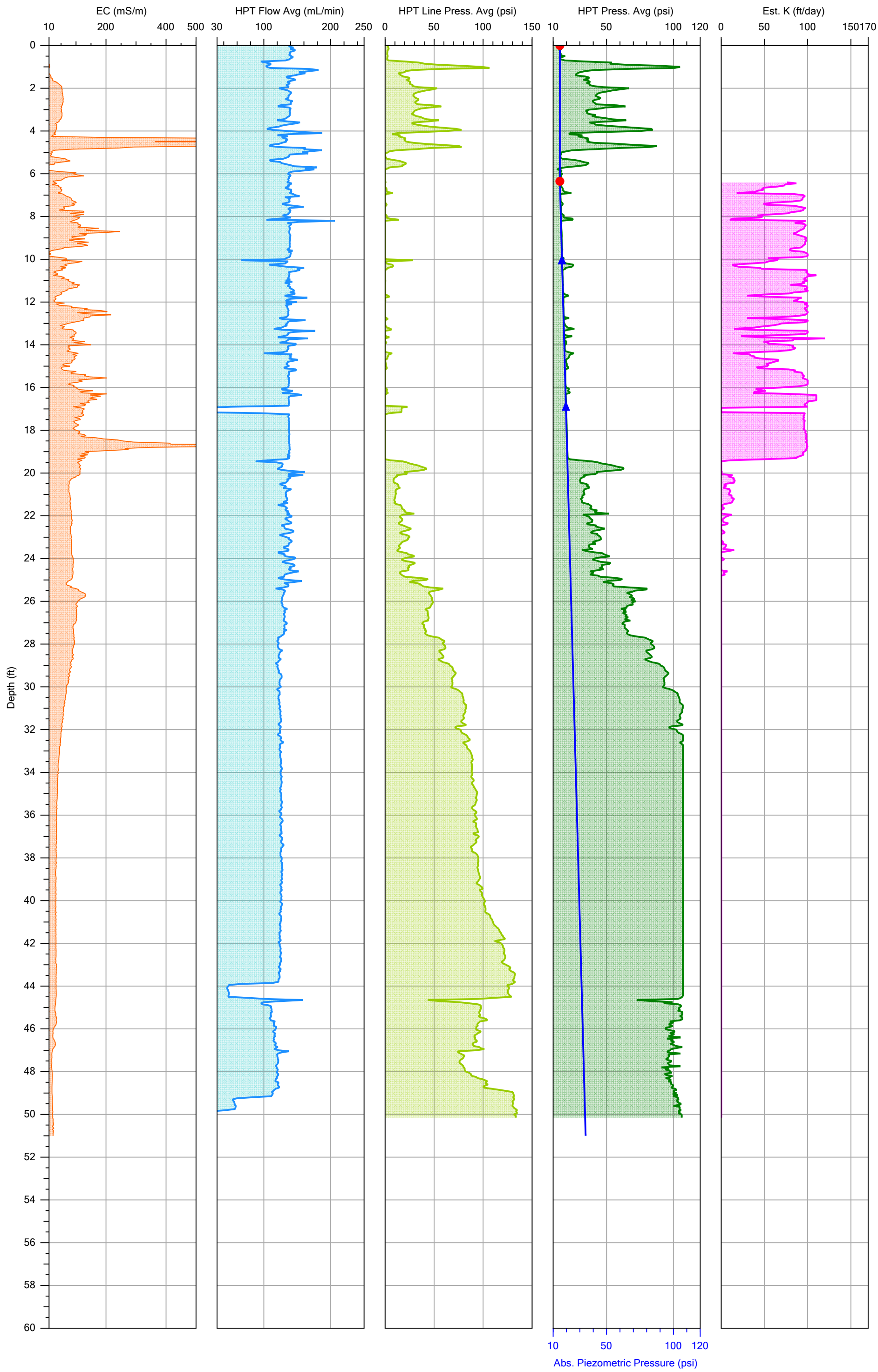
LATITUDE: 41.676612667
LONGITUDE: -87.570742833
ELEVATION: 185.730 METERS 609.35 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2015 13:34:38

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-21.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/29/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 36″ N, 87° 34′ 8″ W

HPT-21.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	185.9	4.7	PASS
Test 2	97.0	93.5	3.6	PASS
Test 3	24.0	24.1	0.3	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2015 15:07:53

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.458	0.0	106.580
TOP with FLOW>0	15.641	139.9	107.840
BOTTOM with FLOW=0	15.233	0.0	105.030
BOTTOM with FLOW>0	15.439	137.8	106.450

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Thu Oct 29 2015 15:14:10

Probe advancement with HPT flow valve and/or pump switch turned off at 16.95 ft (5.166 m).
LOG END DEPTH: 50.15 ft (15.286 m)
LOG END TIME: Thu Oct 29 2015 15:45:56

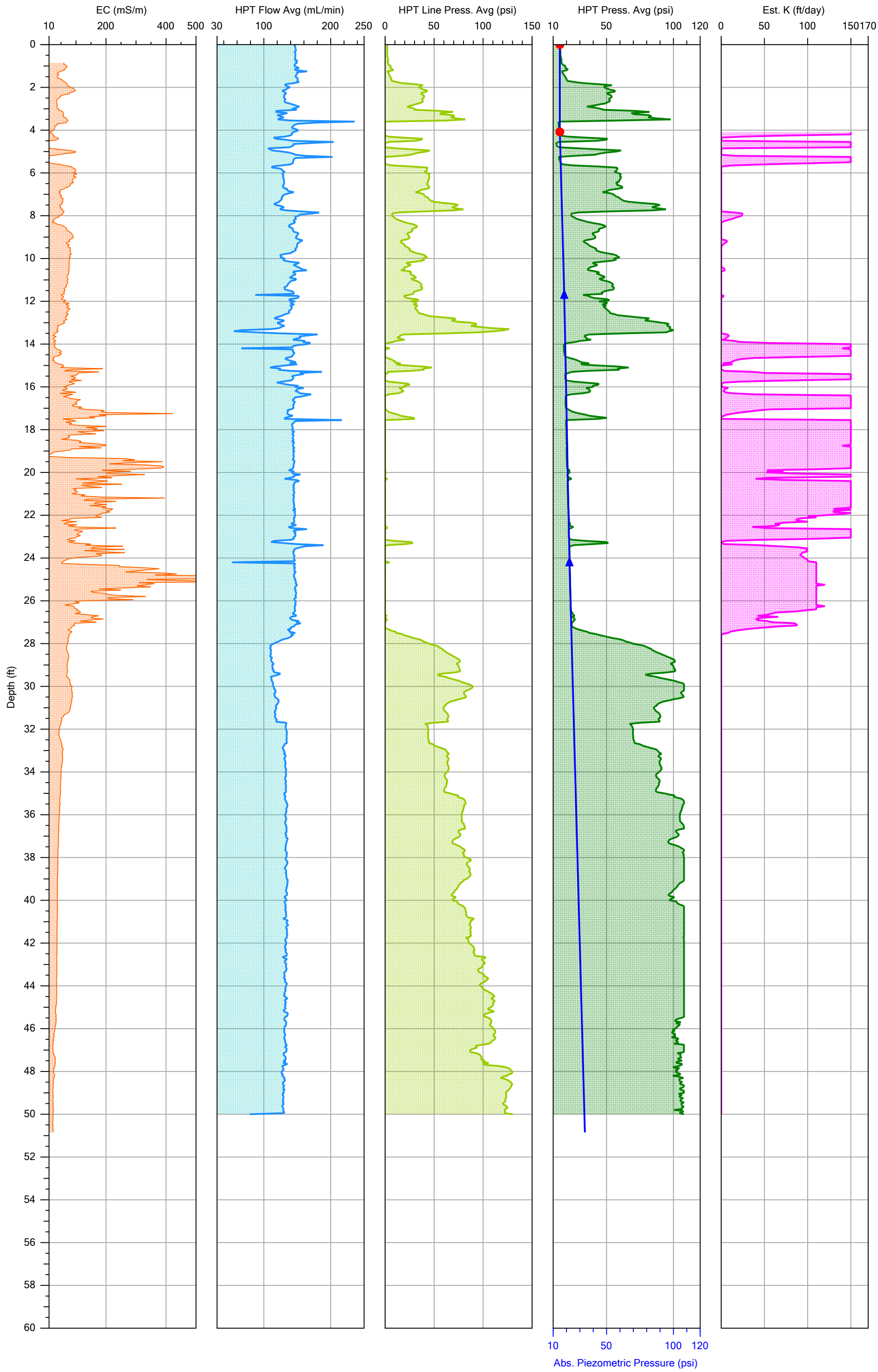
LATITUDE: 41.676625741
LONGITUDE: -87.568958148
ELEVATION: 186.311 METERS 611.26 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2015 15:45:59

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-22.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/30/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 42″ N, 87° 34′ 12″ W

HPT-22.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.2	4.5	PASS
Test 2	97.0	93.6	3.5	PASS
Test 3	24.0	23.9	0.3	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Fri Oct 30 2015 10:04:35

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.458	0.0	106.580
TOP with FLOW>0	15.740	152.6	108.520
BOTTOM with FLOW=0	15.233	0.0	105.030
BOTTOM with FLOW>0	15.527	152.1	107.060

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20321A,0.0000,0.0000,0.0000,0.0000,9.9530e-1,-1.6370
LOG START TIME: Fri Oct 30 2015 10:11:05

LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Fri Oct 30 2015 10:54:41

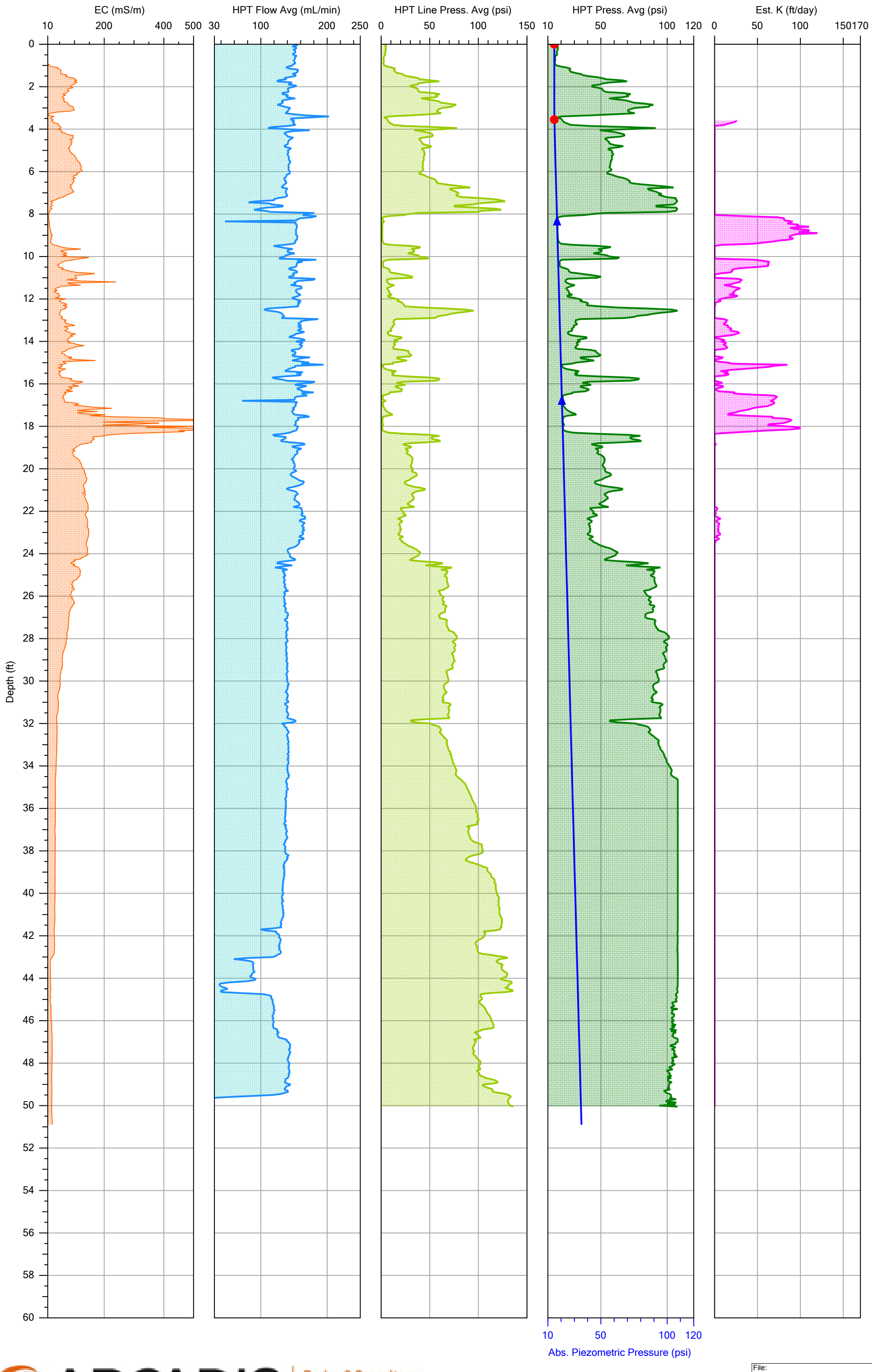
LATITUDE: 41.678264000
LONGITUDE: -87.570061500
ELEVATION: 187.575 METERS 615.40 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Fri Oct 30 2015 10:54:43

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-23.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/29/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 42″ N, 87° 34′ 7″ W

HPT-23.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.0	4.6	PASS
Test 2	97.0	93.5	3.6	PASS
Test 3	24.0	23.8	0.6	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2015 17:57:41

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.316	0.0	105.600
TOP with FLOW>0	15.448	150.2	106.510
BOTTOM with FLOW=0	15.084	0.0	104.000
BOTTOM with FLOW>0	15.239	148.7	105.070

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20321A,0.0000,0.0000,0.0000,0.0000,9.9530e-1,-1.6370
LOG START TIME: Thu Oct 29 2015 18:02:50

LOG END DEPTH: 50.05 ft (15.255 m)
LOG END TIME: Thu Oct 29 2015 18:31:58

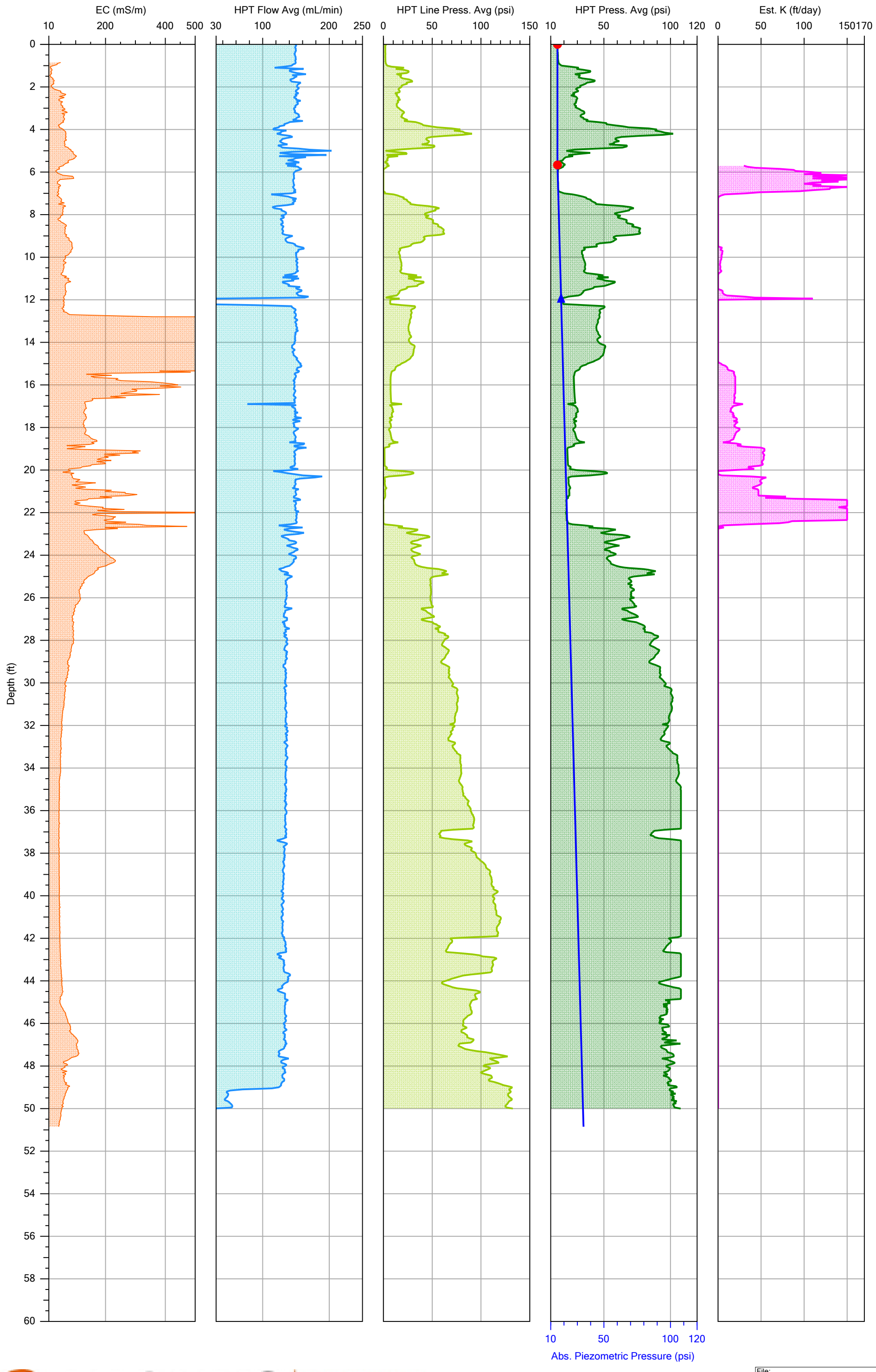
LATITUDE: 41.678230500
LONGITUDE: -87.568630667
ELEVATION: 180.310 METERS 591.57 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2015 18:32:02

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-24.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/30/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 42″ N, 87° 33′ 59″ W

HPT-24.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	187.1	4.1	PASS
Test 2	97.0	94.3	2.7	PASS
Test 3	24.0	24.3	1.2	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Fri Oct 30 2015 14:45:12

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.524	0.0	107.040
TOP with FLOW>0	15.815	149.3	109.040
BOTTOM with FLOW=0	15.302	0.0	105.500
BOTTOM with FLOW>0	15.583	148.8	107.440

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20502A,0.0000,0.0000,0.0000,0.0000,9.9220e-1,-1.3770
LOG START TIME: Fri Oct 30 2015 14:51:48

Probe advancement with HPT flow valve and/or pump switch turned off at 11.95 ft (3.642 m).
LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Fri Oct 30 2015 15:21:43

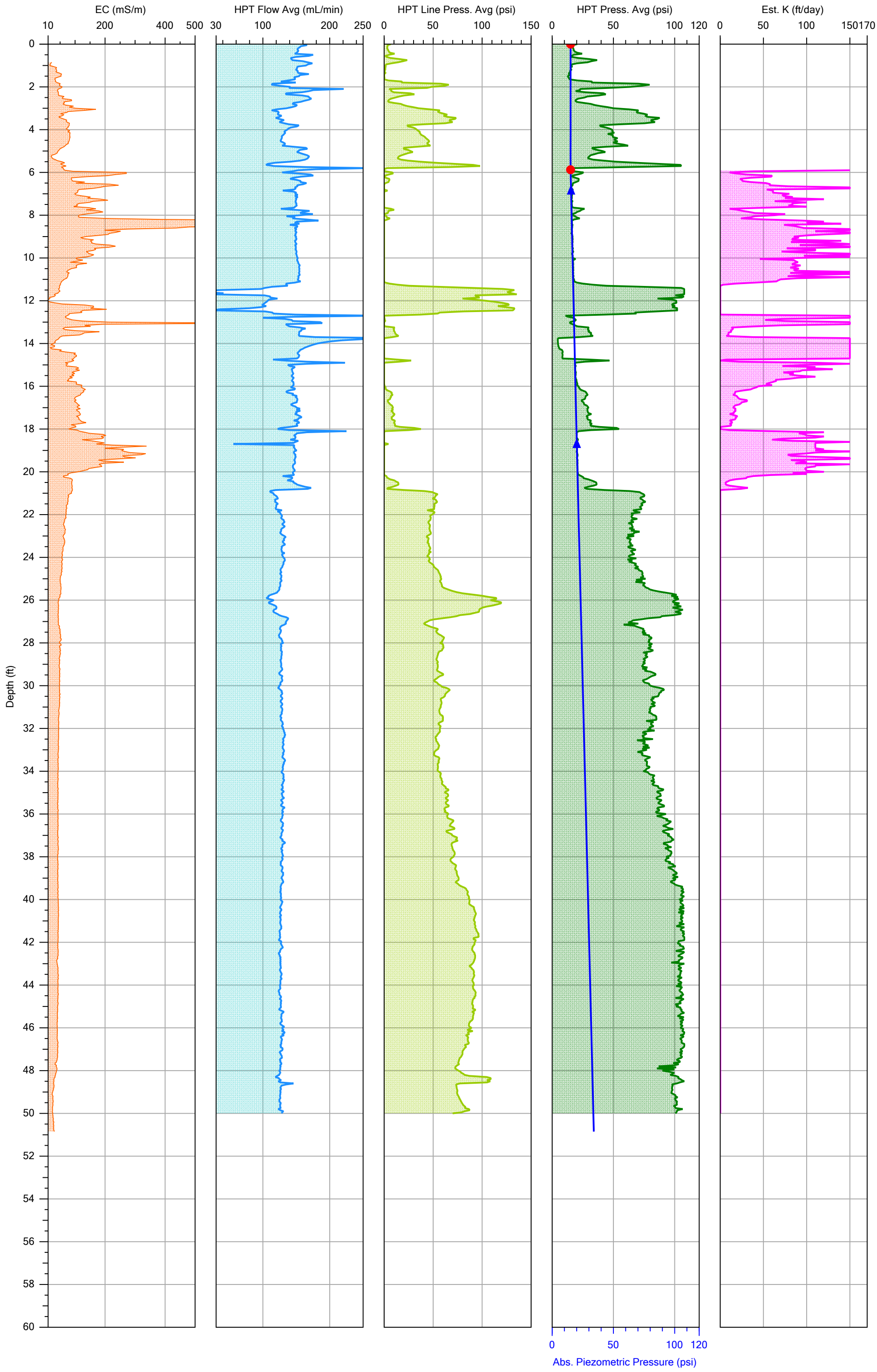
LATITUDE: 41.678401667
LONGITUDE: -87.566384333
ELEVATION: 191.280 METERS 627.56 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Fri Oct 30 2015 15:21:48

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-25.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 11/2/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 48″ N, 87° 33′ 53″ W

HPT-25.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	186.1	4.6	PASS
Test 2	97.0	93.7	3.4	PASS
Test 3	24.0	24.0	0.0	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Mon Nov 2 2015 12:58:53

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.438	0.0	106.440
TOP with FLOW>0	15.601	149.3	107.560
BOTTOM with FLOW=0	15.215	0.0	104.900
BOTTOM with FLOW>0	15.380	151.4	106.040

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
ACTUAL FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD20502A,0.0000,0.0000,0.0000,0.0000,9.9220e-1,-1.3770
LOG START TIME: Mon Nov 2 2015 13:04:10

LOG END DEPTH: 50.00 ft (15.240 m)
LOG END TIME: Mon Nov 2 2015 13:41:56

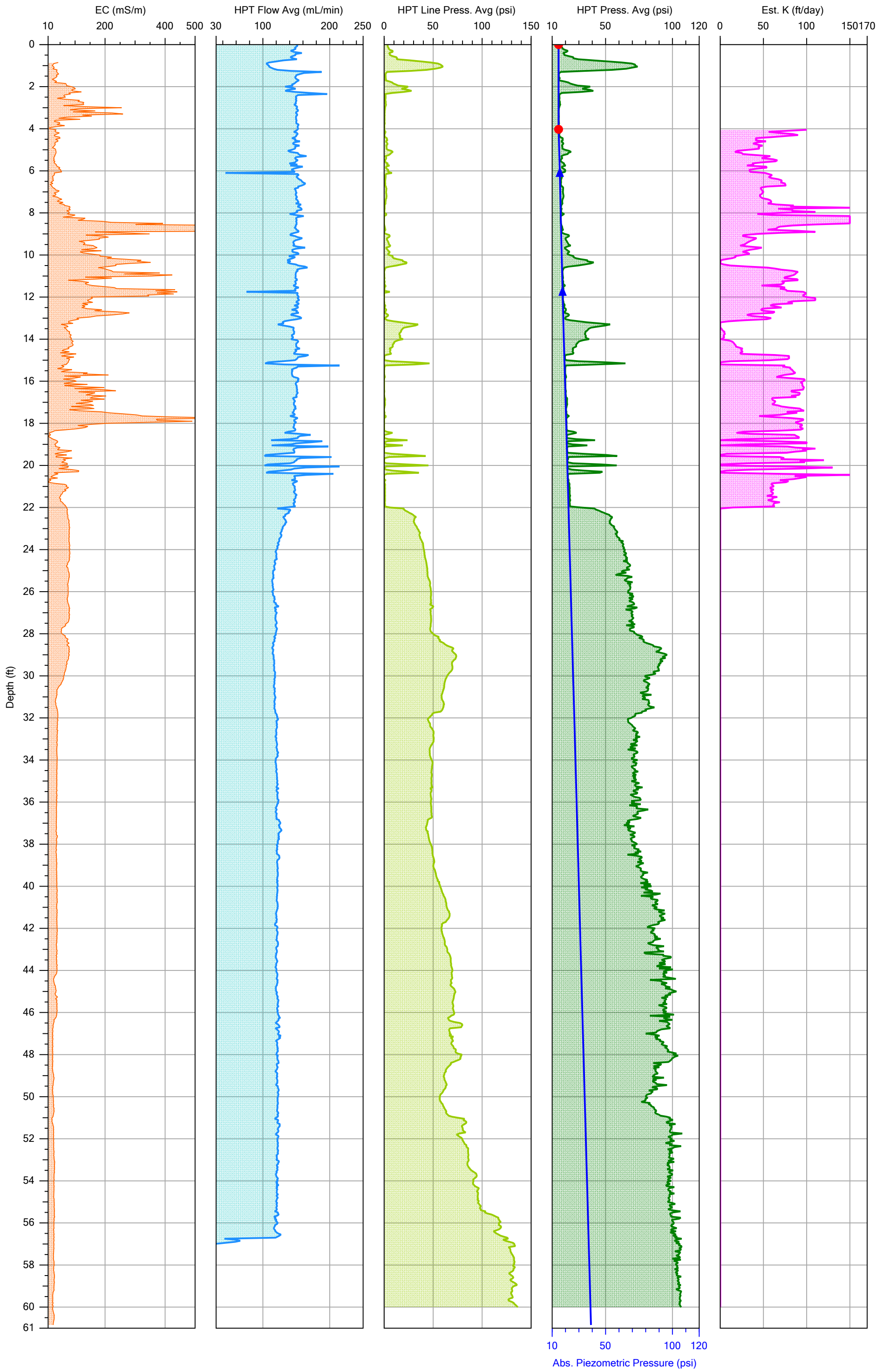
LATITUDE: 41.679904444
LONGITUDE: -87.564596667
ELEVATION: 179.467 METERS 588.80 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Mon Nov 2 2015 13:41:59

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED



ARCADIS Design & Consultancy for natural and built assets

		File: HPT-26.HPT
Company: Stock Drilling Inc.	Operator: Jonathan W.	Date: 10/29/2015
Project ID: Lake Calumet Cluster Site	Client: Arcadis	Location: 41° 40′ 26″ N, 87° 34′ 4″ W

HPT-26.zip

SITE INFORMATION -- DIRECT IMAGE HPT PROBE

Geoprobe DI Acquisition Software for Windows
Version: 1.7 Build: 15075

Pre-Log EC Load Tests

Test	Target (mS/m)	Actual (mS/m)	% Diff	P/F
Test 1	195.0	185.7	4.8	PASS
Test 2	97.0	93.4	3.7	PASS
Test 3	24.0	24.1	0.4	PASS

COMPANY: Stock Drilling Inc.
OPERATOR: Jonathan W.
PROJECT ID: Lake Calumet Cluster Site
CLIENT: Arcadis
UNITS: ENGLISH
PROBE AND ARRAY: K6050 HPT Probe with Wenner
LOCATION: Chicago, IL
100 INCH STRING POT USED
ROD LENGTH: 5 feet

PRE-LOG HPT REFERENCE TEST VALUES

PRE TEST TIME: Thu Oct 29 2015 08:55:44

TEST	HPT PRESSURE (psi)	FLOW (mL/min)	HPT PRESSURE (kPa)
TOP with FLOW=0	15.262	0.0	105.230
TOP with FLOW>0	15.402	151.9	106.200
BOTTOM with FLOW=0	15.036	0.0	103.670
BOTTOM with FLOW>0	15.193	154.1	104.750

EXPECTED FLOW=0 HPT DIFF.: 0.22 psi (1.5 kPa) +/- 10%
  ACTUAL FLOW=0 HPT DIFF.: 0.23 psi (1.6 kPa)

TRANSDUCER TEST PASSED

HPT IDEAL COEFFS: 2.2696e1,-2.2356
HPT SENSOR CAL NUMBERS: HPTMAIN(XD2053A,0.0000,0.0000,0.0000,0.0000,9.9110e-1,-1.4430
LOG START TIME: Thu Oct 29 2015 09:04:14

LOG END DEPTH: 60.00 ft (18.288 m)
LOG END TIME: Thu Oct 29 2015 09:47:19

LATITUDE: 41.673962381
LONGITUDE: -87.567835714
ELEVATION: 189.257 METERS 620.92 FEET
GPS Quality: Single

POST-LOG HPT REFERENCE TEST VALUES

POST TEST TIME: Thu Oct 29 2015 09:47:22

POST-LOG HPT REFERENCE TESTS BYPASSED

EC POST-LOG TESTS BYPASSED

APPENDIX D

Vertical Aquifer Profiling Data Validation and Laboratory Reports

Lake Calumet Cluster Site

Data Usability Summary Report

CHICAGO, IL

Volatile, Metals and Misc. Analyses

SDG#s 500-103464, 500-130546, 500-103623 and 500-103708

Analyses Performed By:
TestAmerica Laboratories
Chicago, IL

Report: # 24860R
Review Level: Tier II
Project: CI001805.0003.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDGs) 500-103464, 500-103546, 500-103623 AND 500-103708 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	EXPL	DG	MET	MISC
500-103464	VAP-HPT-05(6-9)	103464-1	Water	11/02/15		X				X	X
	VAP-HPT-05(10-13)	103464-2	Water	11/02/15		X				X	X
	VAP-HPT-05(14-17)	103464-3	Water	11/02/15		X				X	X
	VAP-HPT-05(18-20)	103464-4	Water	11/02/15		X				X	X
	VAP-HPT-06(10-13)	103464-5	Water	11/02/15		X				X	X
	VAP-HPT-06(14-17)	103464-6	Water	11/02/15		X				X	X
	VAP-HPT-06(18-20)	103464-7	Water	11/02/15		X				X	X
	VAP-HPT-07(6-9)	103464-8	Water	11/02/15		X				X	X
	VAP-HPT-07(10-12)	103464-9	Water	11/02/15		X				X	X
	VAP-HPT-07(14-17)	103464-10	Water	11/02/15		X				X	X
	Trip Blank	103464-11	Water	11/02/15		X					
500-103546	VAP-HPT-08(9-12)	103546-1	Water	11/03/15		X				X	X
	VAP-HPT-08(14-17)	103546-2	Water	11/03/15		X				X	X
	VAP-HPT-09(9-12)	103546-3	Water	11/03/15		X				X	X
	VAP-HPT-09(14-17)	103546-4	Water	11/04/15		X				X	X
	VAP-HPT-11(10-13)	103546-5	Water	11/04/15		X				X	X
	VAP-HPT-11(16-18)	103546-6	Water	11/04/15		X				X	X
	Trip Blank	103546-7	Water	11/03/15		X				X	X
500-103623	VAP-HPT11(19-22)	103623-1	Water	11/04/15		X				X	X
	VAP-HPT11(24-27)	103623-2	Water	11/04/15		X				X	X
	VAP-HPT10(10-13)	103623-3	Water	11/03/15		X				X	X
	VAP-HPT10(22-25)	103623-4	Water	11/03/15		X				X	X
	VAP-HPT12(8-11)	103623-5	Water	11/03/15		X				X	X
	VAP-HPT13(8-11)	103623-6	Water	11/03/15		X				X	X
	Trip Blank	103623-7	Water	11/04/15		X				X	X
500-103708	VAP-HPT13(13-16)	103708-1	Water	11/05/15		X				X	X

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	EXPL	DG	MET	MISC
500-103708	VAP-HPT13(19-22)	103708-2	Water	11/06/15		X				X	X
	VAP-HPT13(24-27)	103708-3	Water	11/06/15		X				X	X
	VAP-HPT14(10-13)	103708-4	Water	11/06/15		X				X	X
	VAP-HPT14(14-17)	103708-5	Water	11/06/15		X				X	X
	VAP-HPT14(20-22)	103708-6	Water	11/06/15		X				X	X
	VAP-HPT15(10-13)	103708-7	Water	11/06/15		X				X	X
	VAP-HPT15(15-18)	103708-8	Water	11/06/15		X				X	X
	TB-1	103708-9	Water	11/06/15		X					

Note:

1. SDG (500-103464) Sample VAP-HPT-05(14-17) was used as the MS/MSD for metals. Sample VAP-HPT-05(10-13) was used as the MS/MSD for mercury.
2. SDG (500-103546) Sample VAP-HPT-08(9-12) was used as the MS/MSD for mercury.
3. SDG (500-103708) Sample VAP-HPT15(10-13) was used as the MS/MSD for metals.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to (United States Environmental Protection Agency) USEPA Method 8260B. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of less than 2.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to<6°C.

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SDG (500-103464) VAP-HPT-05(6-9) VAP-HPT-05(10-13) VAP-HPT-05(18-20) VAP-HPT-06(10-13) VAP-HPT-06(14-17) VAP-HPT-06(18-20) VAP-HPT-07(6-9)	Methylene chloride	Detected sample results >RL and <BAL	“UB” at detected sample concentration
SDG (500-103708) VAP-HPT13(13-16) VAP-HPT13(19-22) VAP-HPT13(24-27) VAP-HPT14(10-13) VAP-HPT14(14-17) VAP-HPT14(20-22) VAP-HPT15(10-13)	Acetone	Detected sample results >RL and <BAL	“UB” at detected sample concentration

Sample Locations	Analytes	Sample Result	Qualification
SDG (500-103708) VAP-HPT15(15-18)	Acetone	Detected sample results >RL and <BAL	"UB" at detected sample concentration

RL Reporting limit

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

An MS/MSD was not performed on a sample location within these sample data group.

4. Laboratory Control Sample

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
Trip Blank	Cyclohexane	>UL
	1,1,2-Trichloro-1,2,2-trifluoroethane	>UL

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
VAP-HPT11(24-27)	1,2-Dichloroethane-d4	AC
	4-Bromofluorobenzene	>UL
	Dibromofluoromethane	AC
	Toluene-d8	AC

UL Upper control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ[1]
	Detect	J[1]

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not included in these data packages.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks	X				X
C. Trip blanks		X	X		
Laboratory Control Sample (LCS)		X	X		
Laboratory Control Sample Duplicate(LCSD)	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS)	X				X
Matrix Spike Duplicate(MSD)	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (%D)	X				X
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content	X				X

%RSD Percent relative difference
%R Percent recovery
RPD Relative percent difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C/7470A and SM4500. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Cool to <6°C; preserved to a pH of less than 2.
SW-846 7470	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (J) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
VAP-HPT12(8-11)	Manganese	Detected sample results >RL and <BAL	“UB” at detected sample concentration

RL = reporting limit

3. Matrix Spike (MS)/ Matrix Spike Duplicate(MSD) Analysis

MS and MSD data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS performed on sample locations where the analyte’s concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier “N” will be removed.

All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
SDG (500-103464) VAP-HPT-05(14-17)	Aluminum	204%	222%
	Selenium	40%	34%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not included in these data packages.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

6. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution was not performed on a sample location within this SDG.

7. General Assessment – Total vs. Dissolved

The calculated %D between the total and the dissolved sample results were within the control limit, with the exception of the analytes presented in the following table.

Sample Location	Analytes	%D
VAP-HPT-05(10-13)	Calcium	11.8%
	Magnesium	14.3%
	Potassium	12.5%
VAP-HPT-08(14-17)	Calcium	18.8%
	Magnesium	20.0%
	Potassium	21.1%
	Sodium	21.8%
VAP-HPT-11(10-13)	Sodium	16.3%
VAP-HPT-11(16-18)	Sodium	13.3%
VAP-HPT11(19-22)	Sodium	14.3%
VAP-HPT11(24-27)	Sodium	23.3%
VAP-HPT10(22-25)	Sodium	35%
VAP-HPT12(8-11)	Sodium	12.5%
VAP-HPT13(8-11)	Sodium	75%
VAP-HPT13(13-16)	Potassium	14.8%
VAP-HPT13(24-27)	Potassium	16.2%
	Sodium	16%
VAP-HPT14(10-13)	Potassium	13.5%
	Sodium	17.4%
VAP-HPT14(14-17)	Potassium	15.3%
	Sodium	30.8%
VAP-HPT14(20-22)	Sodium	16%
VAP-HPT15(15-18)	Potassium	12%
	Sodium	12.5%

The criteria used to evaluate total and dissolved %D are presented in the following table. In the case of a total and dissolved %D deviation, the sample results are qualified. The qualifications are applied to the associated total and dissolved sample results associated with the sample location referenced above.

Sample Concentration	Control Limit	Sample Result	Qualification
Dissolved sample concentration > total sample concentration and > 5x RL or MDL	>10%	Non-detect	UJ
		Detect	J

Sample Concentration	Control Limit	Sample Result	Qualification
Dissolved sample concentration > total sample concentration and > 5x RL or MDL	>50%	Non-detect	R
		Detect	R

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6000	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks	X				X
B. Method Blanks		X	X		
C. Equipment/Field Blanks	X				X
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)	X				X
ICP Serial Dilution	X				X
Reporting Limit Verification		X		X	

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM4500	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

A MS/MSD was not included in these data packages.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not included in these data packages.

5. Laboratory Control Sample

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries results within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA OIA 1677, Total Organic Carbon EPA 9060	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
D. Method blanks		X	X		
E. Equipment blanks	X				X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate(MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Field/Lab Duplicate (RPD)	X				X
Dilution Factor		X		X	
Moisture Content	X				X

%R - percent recovery, RPD - relative percent difference,
%D – difference

VALIDATION PERFORMED BY: Rachelle Borne

SIGNATURE: Rachelle Borne

DATE: December 28, 2015

PEER REVIEW: Dennis Capria

DATE: December 29, 2015

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica

THE LEADER IN ENVIRONMENTA

2417 Bond Street, University Park, IL 6
Phone: 708.534.5200 Fax: 708.53

500-103464 COC

Report To (optional)
Contact: Jack Kratzmayer
Company: ARCADIS
Address: 10 S Riverside Plz #1900
Address: Chicago, IL 60606
Phone: 312-575-3700
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103464
Chain of Custody Number:
Page 1 of 1
Temperature °C of Cooler: 3.1

Client: ARCADIS
Client Project #: C0001805.0002.00013
Project Name: Lake Calumet Cluster SHC
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Dave Mukendrick
Lab PM: Bonnie Stadelmann

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Ammonia	TAL Metals-Total	TAL Metals-Dissolved	VOCs						Comments
1		VAP-HPT-05(6-9)-110215	11-2-15	0930	6	W	X	X	X	X						
2		VAP-HPT-05(10-13)-110215	11-2-15	1030	6	W	X	X	X	X						
3		VAP-HPT-05(14-17)-110215	11-2-15	1115	6	W	X	X	X	X						
4		VAP-HPT-05(18-20)-110215	11-2-15	1230	6	W	X	X	X	X						
5		VAP-HPT-06(10-13)-110315	11-3-15	0900	6	W	X	X	X	X						
6		VAP-HPT-06(14-17)-110315	11-3-15	0930	6	W	X	X	X	X						
7		VAP-HPT-06(18-20)-110315	11-3-15	1020	6	W	X	X	X	X						
8		VAP-HPT-07(6-9)-110315	11-3-15	1245	6	W	X	X	X	X						
9		VAP-HPT-07(10-12)-110315	11-3-15	1310	6	W	X	X	X	X						
10		VAP-HPT-07(14-17)-110315	11-3-15	1400	6	W	X	X	X	X						
11		Trip Blank														Added by TA

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ARCADIS	11-3-15	1400	[signature]	TA	11/3/15	1400
[signature]	TA	11/3/15	1450	[signature]	TA-CHI	11/3/15	1450

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
-TAL Metals (dissolved) were field filtered.

Lab Comments:

TAL-4124 (500-1300)
11/16/2015

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215

Lab Sample ID: 500-103464-1

Date Collected: 11/02/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10		10	3.5	ug/L			11/13/15 05:03	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/13/15 05:03	2
Bromoform	<2.0		2.0	0.97	ug/L			11/13/15 05:03	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/13/15 05:03	2
Carbon disulfide	**3.0**	**J**	4.0	0.90	ug/L			11/13/15 05:03	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
Chlorobenzene	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/13/15 05:03	2
Chloroform	<2.0		2.0	0.74	ug/L			11/13/15 05:03	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/13/15 05:03	2
cis-1,2-Dichloroethene	**1.0**	**J**	2.0	0.82	ug/L			11/13/15 05:03	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/13/15 05:03	2
Cyclohexane	**3.4**		2.0	0.97	ug/L			11/13/15 05:03	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/13/15 05:03	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/13/15 05:03	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
1,2-Dichlorobenzene	**1.0**	**J**	2.0	0.67	ug/L			11/13/15 05:03	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/13/15 05:03	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			11/13/15 05:03	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/13/15 05:03	2
1,1-Dichloroethane	**8.9**		2.0	0.82	ug/L			11/13/15 05:03	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/13/15 05:03	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/13/15 05:03	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/13/15 05:03	2
Ethylbenzene	**3.1**		1.0	0.37	ug/L			11/13/15 05:03	2
2-Hexanone	<10		10	3.1	ug/L			11/13/15 05:03	2
Isopropylbenzene	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
Methyl acetate	<10		10	4.0	ug/L			11/13/15 05:03	2
Methylcyclohexane	<2.0		2.0	0.63	ug/L			11/13/15 05:03	2
Methylene Chloride	**18**	~~B~~ UB	10	3.3	ug/L			11/13/15 05:03	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/13/15 05:03	2
methyl isobutyl ketone	<10		10	4.3	ug/L			11/13/15 05:03	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/13/15 05:03	2
Styrene	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/13/15 05:03	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/13/15 05:03	2
Toluene	**18**		1.0	0.30	ug/L			11/13/15 05:03	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/13/15 05:03	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/13/15 05:03	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/13/15 05:03	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/13/15 05:03	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/13/15 05:03	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/13/15 05:03	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/13/15 05:03	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/13/15 05:03	2
Vinyl chloride	**1.8**		1.0	0.41	ug/L			11/13/15 05:03	2
Xylenes, Total	**3.5**		2.0	0.44	ug/L			11/13/15 05:03	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215

Lab Sample ID: 500-103464-1

Date Collected: 11/02/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/13/15 05:03*	*2*
Dibromofluoromethane	*97*		*75 - 120*		*11/13/15 05:03*	*2*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*		*11/13/15 05:03*	*2*
Toluene-d8 (Surr)	*83*		*75 - 120*		*11/13/15 05:03*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**330**		10	2.9	ug/L			11/13/15 05:30	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*		*11/13/15 05:30*	*20*
Dibromofluoromethane	*84*		*75 - 120*		*11/13/15 05:30*	*20*
1,2-Dichloroethane-d4 (Surr)	*79*		*75 - 125*		*11/13/15 05:30*	*20*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 05:30*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.90**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:18	1
Antimony	**0.013**	J	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:18	1
Arsenic	**0.018**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:18	1
Barium	**0.054**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:18	1
Cadmium	**0.0030**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:18	1
Calcium	**120**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:18	1
Chromium	**0.0048**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:18	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:18	1
Copper	**0.0065**	J	0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:18	1
Iron	**1.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:18	1
Lead	**0.022**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:18	1
Magnesium	**49**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:18	1
Manganese	**0.46**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:18	1
Nickel	**0.0056**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:18	1
Potassium	**12**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:18	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:18	1
Sodium	**410**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:18	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:18	1
Vanadium	**0.0044**	J	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:18	1
Zinc	**0.017**	J	0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:23	1
Antimony	**0.0078**	J	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:23	1
Arsenic	**0.019**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:23	1
Barium	**0.051**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:23	1
Cadmium	**0.0012**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:23	1
Calcium	**110**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:23	1
Chromium	<0.010		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:23	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215

Lab Sample ID: 500-103464-1
Date Collected: 11/02/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:23	1
Iron	**0.11**	**J**	0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:23	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:23	1
Magnesium	**46**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:23	1
Manganese	**0.29**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:23	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:23	1
Potassium	**12**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:23	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:23	1
Sodium	**400**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:23	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:28	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**5.3**	~~B~~	0.40	0.086	mg/L		11/11/15 13:15	11/11/15 16:20	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(10-13)-110215

Lab Sample ID: 500-103464-2

Date Collected: 11/02/15 10:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			11/13/15 07:23	1
Benzene	**160**		0.50	0.15	ug/L			11/13/15 07:23	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 07:23	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 07:23	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 07:23	1
Carbon disulfide	**7.7**		2.0	0.45	ug/L			11/13/15 07:23	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 07:23	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			11/13/15 07:23	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 07:23	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 07:23	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 07:23	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 07:23	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 07:23	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 07:23	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 07:23	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 07:23	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 07:23	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 07:23	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 07:23	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 07:23	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 07:23	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 07:23	1
Ethylbenzene	**0.42**	**J**	0.50	0.18	ug/L			11/13/15 07:23	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 07:23	1
Isopropylbenzene	**1.7**		1.0	0.39	ug/L			11/13/15 07:23	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 07:23	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 07:23	1
Methylene Chloride	**21**	~~B~~ UB	5.0	1.6	ug/L			11/13/15 07:23	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 07:23	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 07:23	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 07:23	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 07:23	1
Toluene	**7.5**		0.50	0.15	ug/L			11/13/15 07:23	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 07:23	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 07:23	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 07:23	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 07:23	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 07:23	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 07:23	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 07:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 07:23	1
Vinyl chloride	**15**		0.50	0.20	ug/L			11/13/15 07:23	1
Xylenes, Total	**2.4**		1.0	0.22	ug/L			11/13/15 07:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(10-13)-110215

Lab Sample ID: 500-103464-2

Date Collected: 11/02/15 10:30
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/13/15 07:23*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 07:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/13/15 07:23*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*11/13/15 07:23*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.31**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:29	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:29	1
Arsenic	**0.0035**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:29	1
Barium	**0.42**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:29	1
Cadmium	**0.0012**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:29	1
Calcium	**150**	J	0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:29	1
Chromium	**0.0055**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:29	1
Copper	**0.0023**	J	0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:29	1
Iron	**4.2**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:29	1
Lead	**0.0067**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:29	1
Magnesium	**120**	J	0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:29	1
Manganese	**0.58**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:29	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:29	1
Potassium	**49**	J	0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:29	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:29	1
Sodium	**290**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:29	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:29	1
Vanadium	**0.0033**	J	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:29	1
Zinc	**0.010**	J	0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:34	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:34	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:34	1
Barium	**0.47**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:34	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:34	1
Calcium	**170**	J	0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:34	1
Chromium	**0.0031**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:34	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:34	1
Iron	**2.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:34	1
Lead	**0.0028**	J	0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:34	1
Magnesium	**140**	J	0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:34	1
Manganese	**0.60**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:34	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:34	1
Potassium	**56**	J	0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:34	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(10-13)-110215

Lab Sample ID: 500-103464-2

Date Collected: 11/02/15 10:30

Matrix: Water

Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**320**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:34	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:34	1
Vanadium	**0.0022**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:34	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:32	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**19**	~~**B**~~	1.0	0.22	mg/L		11/11/15 13:15	11/11/15 16:23	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215

Lab Sample ID: 500-103464-3

Date Collected: 11/02/15 11:15
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 07:50	1
Benzene	**28**		0.50	0.15	ug/L			11/13/15 07:50	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 07:50	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 07:50	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 07:50	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 07:50	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 07:50	1
Chlorobenzene	**0.96**	**J**	1.0	0.39	ug/L			11/13/15 07:50	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 07:50	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 07:50	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 07:50	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 07:50	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 07:50	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 07:50	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 07:50	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 07:50	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 07:50	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 07:50	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 07:50	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 07:50	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 07:50	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 07:50	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 07:50	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 07:50	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 07:50	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 07:50	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 07:50	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 07:50	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 07:50	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 07:50	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 07:50	1
Toluene	**2.0**		0.50	0.15	ug/L			11/13/15 07:50	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 07:50	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 07:50	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 07:50	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 07:50	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 07:50	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 07:50	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 07:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 07:50	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 07:50	1
Xylenes, Total	**0.54**	**J**	1.0	0.22	ug/L			11/13/15 07:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215

Date Collected: 11/02/15 11:15
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*11/13/15 07:50*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 07:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*11/13/15 07:50*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 07:50*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**5.4**	~~F1~~ J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:39	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:39	1
Arsenic	**0.010**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:39	1
Barium	**0.37**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:39	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:39	1
Cadmium	**0.0016**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:39	1
Calcium	**350**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:39	1
Chromium	**0.025**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:39	1
Copper	**0.026**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:39	1
Iron	**20**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:39	1
Lead	**0.064**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:39	1
Magnesium	**76**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:39	1
Manganese	**0.64**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:39	1
Nickel	**0.014**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:39	1
Potassium	**49**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:39	1
Selenium	**0.0079**	J ~~F1~~	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:39	1
Sodium	**280**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:39	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:39	1
Vanadium	**0.0096**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:39	1
Zinc	**0.27**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:39	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:12	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:12	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:12	1
Barium	**0.30**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:12	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:12	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:12	1
Calcium	**340**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:12	1
Chromium	**0.0024**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:12	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:12	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:12	1
Iron	**3.0**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:12	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:12	1
Magnesium	**75**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:12	1
Manganese	**0.43**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:12	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:12	1
Potassium	**49**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:12	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:12	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215

Lab Sample ID: 500-103464-3

Date Collected: 11/02/15 11:15

Matrix: Water

Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**290**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:12	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:12	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:12	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00034**		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**22**	~~B~~	1.0	0.22	mg/L		11/11/15 13:15	11/11/15 16:25	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(18-20)-110215

Lab Sample ID: 500-103464-4

Date Collected: 11/02/15 12:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 08:16	1
Benzene	**11**		0.50	0.15	ug/L			11/13/15 08:16	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 08:16	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 08:16	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 08:16	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 08:16	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 08:16	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 08:16	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 08:16	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 08:16	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 08:16	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 08:16	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 08:16	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 08:16	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 08:16	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 08:16	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 08:16	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 08:16	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 08:16	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 08:16	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 08:16	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 08:16	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 08:16	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 08:16	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 08:16	1
Methylene Chloride	**5.6**	~~B~~ UB	5.0	1.6	ug/L			11/13/15 08:16	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 08:16	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 08:16	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 08:16	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 08:16	1
Toluene	**3.8**		0.50	0.15	ug/L			11/13/15 08:16	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 08:16	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 08:16	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 08:16	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 08:16	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 08:16	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 08:16	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 08:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 08:16	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 08:16	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 08:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(18-20)-110215

Lab Sample ID: 500-103464-4

Date Collected: 11/02/15 12:30
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*11/13/15 08:16*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 08:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 125*		*11/13/15 08:16*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/13/15 08:16*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.0**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:18	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:18	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:18	1
Barium	**0.12**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:18	1
Cadmium	**0.0012**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:18	1
Calcium	**280**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:18	1
Chromium	**0.011**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:18	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:18	1
Copper	**0.0056**	J	0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:18	1
Iron	**3.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:18	1
Lead	**0.011**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:18	1
Magnesium	**73**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:18	1
Manganese	**0.35**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:18	1
Nickel	**0.0035**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:18	1
Potassium	**61**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:18	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:18	1
Sodium	**210**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:18	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:18	1
Vanadium	**0.0075**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:18	1
Zinc	**0.025**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:23	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:23	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:23	1
Barium	**0.11**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:23	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:23	1
Calcium	**270**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:23	1
Chromium	<0.010		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:23	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:23	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:23	1
Iron	**1.2**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:23	1
Lead	**0.0039**	J	0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:23	1
Magnesium	**72**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:23	1
Manganese	**0.22**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:23	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:23	1
Potassium	**61**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:23	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(18-20)-110215

Lab Sample ID: 500-103464-4

Date Collected: 11/02/15 12:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**220**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:23	1
Vanadium	**0.0045**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**30**	~~**B**~~	2.0	0.43	mg/L		11/11/15 13:15	11/12/15 18:26	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(10-13)-110315

Lab Sample ID: 500-103464-5

Date Collected: 11/03/15 09:00
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.4**		5.0	1.7	ug/L			11/13/15 08:43	1
Benzene	**10**		0.50	0.15	ug/L			11/13/15 08:43	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 08:43	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 08:43	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 08:43	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 08:43	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 08:43	1
Chlorobenzene	**6.4**		1.0	0.39	ug/L			11/13/15 08:43	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 08:43	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 08:43	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 08:43	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 08:43	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 08:43	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 08:43	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 08:43	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 08:43	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 08:43	1
1,3-Dichlorobenzene	**4.0**		1.0	0.40	ug/L			11/13/15 08:43	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 08:43	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 08:43	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 08:43	1
1,2-Dichloroethane	**1.5**		1.0	0.39	ug/L			11/13/15 08:43	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 08:43	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 08:43	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 08:43	1
Isopropylbenzene	**2.7**		1.0	0.39	ug/L			11/13/15 08:43	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 08:43	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 08:43	1
Methylene Chloride	**5.3**	~~B~~ UB	5.0	1.6	ug/L			11/13/15 08:43	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 08:43	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 08:43	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 08:43	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 08:43	1
Toluene	**0.70**		0.50	0.15	ug/L			11/13/15 08:43	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 08:43	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 08:43	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 08:43	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 08:43	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 08:43	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 08:43	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 08:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 08:43	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 08:43	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 08:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(10-13)-110315

Lab Sample ID: 500-103464-5

Date Collected: 11/03/15 09:00
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/13/15 08:43*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*11/13/15 08:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*11/13/15 08:43*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*11/13/15 08:43*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.6**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:29	1
Antimony	**0.0081**	J	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:29	1
Arsenic	**0.017**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:29	1
Barium	**0.36**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:29	1
Beryllium	**0.0014**	J	0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:29	1
Cadmium	**0.0036**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:29	1
Calcium	**210**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:29	1
Chromium	**0.035**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:29	1
Cobalt	**0.0042**	J	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:29	1
Copper	**0.13**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:29	1
Iron	**51**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:29	1
Lead	**0.19**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:29	1
Magnesium	**160**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:29	1
Manganese	**0.89**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:29	1
Nickel	**0.029**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:29	1
Potassium	**78**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:29	1
Selenium	**0.0050**	J	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:29	1
Sodium	**530**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:29	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:29	1
Vanadium	**0.015**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:29	1
Zinc	**0.39**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:34	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:34	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:34	1
Barium	**0.22**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:34	1
Cadmium	**0.0016**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:34	1
Calcium	**210**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:34	1
Chromium	**0.0024**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:34	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:34	1
Iron	**18**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:34	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:34	1
Magnesium	**170**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:34	1
Manganese	**0.63**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:34	1
Nickel	**0.0058**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:34	1
Potassium	**83**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:34	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(10-13)-110315

Lab Sample ID: 500-103464-5

Date Collected: 11/03/15 09:00
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**540**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:34	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:34	1
Vanadium	**0.0025**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:34	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000079**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**54**	**B**	5.0	1.1	mg/L		11/11/15 13:15	11/12/15 18:29	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315

Lab Sample ID: 500-103464-6

Date Collected: 11/03/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**5.1**		5.0	1.7	ug/L			11/13/15 09:10	1
Benzene	**33**		0.50	0.15	ug/L			11/13/15 09:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 09:10	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 09:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 09:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 09:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 09:10	1
Chlorobenzene	**36**		1.0	0.39	ug/L			11/13/15 09:10	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 09:10	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 09:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 09:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 09:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 09:10	1
Cyclohexane	**1.2**		1.0	0.49	ug/L			11/13/15 09:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 09:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 09:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 09:10	1
1,3-Dichlorobenzene	**3.9**		1.0	0.40	ug/L			11/13/15 09:10	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 09:10	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 09:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 09:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 09:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 09:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 09:10	1
Isopropylbenzene	**8.7**		1.0	0.39	ug/L			11/13/15 09:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 09:10	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 09:10	1
Methylene Chloride	**5.0**	~~B~~ UB	5.0	1.6	ug/L			11/13/15 09:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 09:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 09:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 09:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 09:10	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 09:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 09:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 09:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 09:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 09:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 09:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 09:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 09:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 09:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 09:10	1
Xylenes, Total	**1.2**		1.0	0.22	ug/L			11/13/15 09:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315

Lab Sample ID: 500-103464-6

Date Collected: 11/03/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*11/13/15 09:10*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 09:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 125*		*11/13/15 09:10*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 09:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**15**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:39	1
Antimony	**0.012**	J	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:39	1
Arsenic	**0.031**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:39	1
Barium	**0.62**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:39	1
Beryllium	**0.0029**	J	0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:39	1
Cadmium	**0.013**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:39	1
Calcium	**230**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:39	1
Chromium	**0.16**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:39	1
Cobalt	**0.020**		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:39	1
Copper	**0.36**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:39	1
Iron	**170**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:39	1
Lead	**0.43**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:39	1
Magnesium	**140**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:39	1
Manganese	**2.4**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:39	1
Nickel	**0.61**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:39	1
Potassium	**93**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:39	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:39	1
Silver	**0.0047**	J	0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:39	1
Sodium	**430**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:39	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:39	1
Vanadium	**0.041**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:39	1
Zinc	**1.7**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:39	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:52	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:52	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:52	1
Barium	**0.23**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:52	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:52	1
Calcium	**160**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:52	1
Chromium	**0.0047**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:52	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:52	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:52	1
Iron	**27**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:52	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:52	1
Magnesium	**120**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:52	1
Manganese	**0.50**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:52	1
Nickel	**0.0063**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:52	1
Potassium	**85**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:52	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315

Lab Sample ID: 500-103464-6

Date Collected: 11/03/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**400**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:52	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:52	1
Vanadium	**0.0023**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:52	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00015**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:57	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**110**	~~**B**~~	10	2.2	mg/L		11/11/15 13:15	11/12/15 18:32	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(18-20)-110315

Lab Sample ID: 500-103464-7

Date Collected: 11/03/15 10:20
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.9**		5.0	1.7	ug/L			11/13/15 09:37	1
Benzene	**31**		0.50	0.15	ug/L			11/13/15 09:37	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 09:37	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 09:37	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 09:37	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 09:37	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 09:37	1
Chlorobenzene	**26**		1.0	0.39	ug/L			11/13/15 09:37	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 09:37	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 09:37	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 09:37	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 09:37	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 09:37	1
Cyclohexane	**1.6**		1.0	0.49	ug/L			11/13/15 09:37	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 09:37	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 09:37	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 09:37	1
1,3-Dichlorobenzene	**3.6**		1.0	0.40	ug/L			11/13/15 09:37	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 09:37	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 09:37	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 09:37	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 09:37	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 09:37	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 09:37	1
Isopropylbenzene	**7.5**		1.0	0.39	ug/L			11/13/15 09:37	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 09:37	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 09:37	1
Methylene Chloride	**5.4**	B UB	5.0	1.6	ug/L			11/13/15 09:37	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 09:37	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 09:37	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 09:37	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 09:37	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 09:37	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 09:37	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 09:37	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 09:37	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 09:37	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 09:37	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 09:37	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 09:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 09:37	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 09:37	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 09:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(18-20)-110315

Lab Sample ID: 500-103464-7

Date Collected: 11/03/15 10:20
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/13/15 09:37*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*11/13/15 09:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 125*		*11/13/15 09:37*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*11/13/15 09:37*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.78**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:57	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:57	1
Arsenic	**0.0041**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:57	1
Barium	**0.33**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:57	1
Cadmium	**0.0033**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:57	1
Calcium	**170**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:57	1
Chromium	**0.014**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:57	1
Cobalt	**0.0019**	J	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:57	1
Copper	**0.023**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:57	1
Iron	**38**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:57	1
Lead	**0.036**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:57	1
Magnesium	**130**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:57	1
Manganese	**0.52**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:57	1
Nickel	**0.018**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:57	1
Potassium	**86**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:57	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:57	1
Sodium	**420**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:57	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:57	1
Vanadium	**0.0030**	J	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:57	1
Zinc	**0.89**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:02	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:02	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:02	1
Barium	**0.31**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:02	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:02	1
Calcium	**170**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:02	1
Chromium	**0.0032**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:02	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:02	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:02	1
Iron	**31**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:02	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:02	1
Magnesium	**140**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:02	1
Manganese	**0.48**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:02	1
Nickel	**0.0042**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:02	1
Potassium	**88**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:02	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(18-20)-110315

Lab Sample ID: 500-103464-7

Date Collected: 11/03/15 10:20
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**430**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:02	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:02	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:02	1
Zinc	**0.0094**	**J**	0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00011**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:01	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**110**	**B**	10	2.2	mg/L		11/11/15 13:15	11/12/15 18:35	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(6-9)-110315

Lab Sample ID: 500-103464-8

Date Collected: 11/03/15 12:45
Date Received: 11/03/15 14:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 10:04	1
Benzene	**46**		0.50	0.15	ug/L			11/13/15 10:04	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 10:04	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 10:04	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 10:04	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 10:04	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 10:04	1
Chlorobenzene	**64**		1.0	0.39	ug/L			11/13/15 10:04	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 10:04	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 10:04	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 10:04	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 10:04	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 10:04	1
Cyclohexane	**1.2**		1.0	0.49	ug/L			11/13/15 10:04	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 10:04	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 10:04	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 10:04	1
1,3-Dichlorobenzene	**4.6**		1.0	0.40	ug/L			11/13/15 10:04	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 10:04	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 10:04	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 10:04	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 10:04	1
Ethylbenzene	**0.46**	**J**	0.50	0.18	ug/L			11/13/15 10:04	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 10:04	1
Isopropylbenzene	**6.9**		1.0	0.39	ug/L			11/13/15 10:04	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 10:04	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 10:04	1
Methylene Chloride	**5.4**	~~**B**~~ UB	5.0	1.6	ug/L			11/13/15 10:04	1
Methyl Ethyl Ketone	**10**		5.0	2.1	ug/L			11/13/15 10:04	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 10:04	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 10:04	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 10:04	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 10:04	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 10:04	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 10:04	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 10:04	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 10:04	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 10:04	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 10:04	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 10:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 10:04	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 10:04	1
Xylenes, Total	**1.8**		1.0	0.22	ug/L			11/13/15 10:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(6-9)-110315

Date Collected: 11/03/15 12:45
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-8

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*75 - 120*		*11/13/15 10:04*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*11/13/15 10:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 125*		*11/13/15 10:04*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 10:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.5**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:08	1
Antimony	**0.0077**	**J**	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:08	1
Arsenic	**0.0041**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:08	1
Barium	**0.26**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:08	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:08	1
Calcium	**200**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:08	1
Chromium	**0.018**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:08	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:08	1
Copper	**0.010**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:08	1
Iron	**22**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:08	1
Lead	**0.091**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:08	1
Magnesium	**110**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:08	1
Manganese	**0.24**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:08	1
Nickel	**0.015**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:08	1
Potassium	**80**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:08	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:08	1
Sodium	**320**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:08	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:08	1
Vanadium	**0.0051**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:08	1
Zinc	**0.063**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:08	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:13	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:13	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:13	1
Barium	**0.25**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:13	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:13	1
Calcium	**170**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:13	1
Chromium	**0.0026**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:13	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:13	1
Iron	**19**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:13	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:13	1
Magnesium	**100**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:13	1
Manganese	**0.17**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:13	1
Nickel	**0.0082**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:13	1
Potassium	**81**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:13	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(6-9)-110315

Lab Sample ID: 500-103464-8

Date Collected: 11/03/15 12:45
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**330**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:13	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:13	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000061**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:09	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**86**	~~**B**~~	4.0	0.86	mg/L		11/11/15 13:15	11/12/15 18:38	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(10-12)-110315

Lab Sample ID: 500-103464-9

Date Collected: 11/03/15 13:10
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**28**		5.0	1.7	ug/L			11/13/15 17:27	1
Benzene	**36**		0.50	0.15	ug/L			11/13/15 17:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 17:27	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 17:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 17:27	1
Carbon disulfide	**1.4**	**J**	2.0	0.45	ug/L			11/13/15 17:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 17:27	1
Chlorobenzene	**10**		1.0	0.39	ug/L			11/13/15 17:27	1
Chloroethane	**1.9**		1.0	0.47	ug/L			11/13/15 17:27	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 17:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 17:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 17:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 17:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 17:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 17:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 17:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,2-Dichlorobenzene	**4.0**		1.0	0.33	ug/L			11/13/15 17:27	1
1,3-Dichlorobenzene	**2.5**		1.0	0.40	ug/L			11/13/15 17:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 17:27	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 17:27	1
1,1-Dichloroethane	**0.57**	**J**	1.0	0.41	ug/L			11/13/15 17:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 17:27	1
Ethylbenzene	**14**		0.50	0.18	ug/L			11/13/15 17:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 17:27	1
Isopropylbenzene	**3.9**		1.0	0.39	ug/L			11/13/15 17:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 17:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 17:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 17:27	1
Methyl Ethyl Ketone	**10**		5.0	2.1	ug/L			11/13/15 17:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 17:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 17:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 17:27	1
Toluene	**4.6**		0.50	0.15	ug/L			11/13/15 17:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 17:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 17:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 17:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 17:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 17:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 17:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 17:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 17:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 17:27	1
Xylenes, Total	**26**		1.0	0.22	ug/L			11/13/15 17:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(10-12)-110315

Lab Sample ID: 500-103464-9

Date Collected: 11/03/15 13:10
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/13/15 17:27*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*11/13/15 17:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*11/13/15 17:27*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*11/13/15 17:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.0**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:18	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:18	1
Arsenic	**0.015**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:18	1
Barium	**0.33**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:18	1
Cadmium	**0.0026**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:18	1
Calcium	**210**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:18	1
Chromium	**0.095**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:18	1
Cobalt	**0.0072**		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:18	1
Copper	**0.059**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:18	1
Iron	**25**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:18	1
Lead	**0.41**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:18	1
Magnesium	**330**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:18	1
Manganese	**0.59**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:18	1
Nickel	**0.031**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:18	1
Potassium	**110**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:18	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:18	1
Sodium	**420**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:18	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:18	1
Vanadium	**0.041**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:18	1
Zinc	**0.21**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:23	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:23	1
Arsenic	**0.011**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:23	1
Barium	**0.17**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:23	1
Cadmium	**0.0015**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:23	1
Calcium	**200**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:23	1
Chromium	**0.066**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:23	1
Cobalt	**0.0031**	J	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:23	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:23	1
Iron	**9.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:23	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:23	1
Magnesium	**310**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:23	1
Manganese	**0.48**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:23	1
Nickel	**0.0082**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:23	1
Potassium	**110**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:23	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(10-12)-110315

Lab Sample ID: 500-103464-9

Date Collected: 11/03/15 13:10
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**420**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:23	1
Vanadium	**0.034**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**120**	~~**B**~~	10	2.2	mg/L		11/11/15 13:15	11/12/15 18:41	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(14-17)-110315

Lab Sample ID: 500-103464-10

Date Collected: 11/03/15 14:00
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.3**		5.0	1.7	ug/L			11/13/15 17:54	1
Benzene	**30**		0.50	0.15	ug/L			11/13/15 17:54	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 17:54	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 17:54	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 17:54	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 17:54	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 17:54	1
Chlorobenzene	**100**		1.0	0.39	ug/L			11/13/15 17:54	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 17:54	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 17:54	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 17:54	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 17:54	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 17:54	1
Cyclohexane	**2.5**		1.0	0.49	ug/L			11/13/15 17:54	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 17:54	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 17:54	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,2-Dichlorobenzene	**1.0**		1.0	0.33	ug/L			11/13/15 17:54	1
1,3-Dichlorobenzene	**8.5**		1.0	0.40	ug/L			11/13/15 17:54	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 17:54	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 17:54	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 17:54	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 17:54	1
Ethylbenzene	**1.4**		0.50	0.18	ug/L			11/13/15 17:54	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 17:54	1
Isopropylbenzene	**9.7**		1.0	0.39	ug/L			11/13/15 17:54	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 17:54	1
Methylcyclohexane	**0.66**	**J**	1.0	0.32	ug/L			11/13/15 17:54	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 17:54	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 17:54	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 17:54	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 17:54	1
Tetrachloroethene	**0.83**	**J**	1.0	0.37	ug/L			11/13/15 17:54	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 17:54	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 17:54	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 17:54	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 17:54	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 17:54	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 17:54	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 17:54	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 17:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 17:54	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 17:54	1
Xylenes, Total	**3.4**		1.0	0.22	ug/L			11/13/15 17:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(14-17)-110315

Lab Sample ID: 500-103464-10

Date Collected: 11/03/15 14:00
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/13/15 17:54*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*11/13/15 17:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/13/15 17:54*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*11/13/15 17:54*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.9**	J	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:28	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:28	1
Arsenic	**0.0090**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:28	1
Barium	**0.39**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:28	1
Cadmium	**0.0037**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:28	1
Calcium	**120**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:28	1
Chromium	**0.058**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:28	1
Cobalt	**0.0028**	J	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:28	1
Copper	**0.035**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:28	1
Iron	**41**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:28	1
Lead	**0.13**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:28	1
Magnesium	**100**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:28	1
Manganese	**0.32**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:28	1
Nickel	**0.071**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:28	1
Potassium	**74**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:28	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:28	1
Sodium	**270**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:28	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:28	1
Vanadium	**0.0056**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:28	1
Zinc	**0.34**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:28	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:33	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:33	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:33	1
Barium	**0.27**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:33	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:33	1
Cadmium	**0.00097**	J	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:33	1
Calcium	**120**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:33	1
Chromium	**0.0038**	J	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:33	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:33	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:33	1
Iron	**26**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:33	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:33	1
Magnesium	**100**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:33	1
Manganese	**0.24**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:33	1
Nickel	**0.0046**	J	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:33	1
Potassium	**76**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:33	1
Selenium	<0.010	UJ	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:33	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(14-17)-110315

Lab Sample ID: 500-103464-10

Date Collected: 11/03/15 14:00
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**280**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:33	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:33	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:33	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00014**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:17	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**81**	~~B~~	4.0	0.86	mg/L		11/11/15 13:15	11/12/15 18:43	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: Trip Blank

Date Collected: 11/02/15 00:00
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-11

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 01:02	1
Benzene	<0.50		0.50	0.15	ug/L			11/13/15 01:02	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 01:02	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 01:02	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 01:02	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 01:02	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 01:02	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 01:02	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 01:02	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 01:02	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 01:02	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 01:02	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 01:02	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 01:02	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 01:02	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 01:02	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 01:02	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 01:02	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 01:02	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 01:02	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 01:02	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 01:02	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 01:02	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 01:02	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 01:02	1
Methylene Chloride	**5.8**	~~B~~	5.0	1.6	ug/L			11/13/15 01:02	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 01:02	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 01:02	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 01:02	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 01:02	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 01:02	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 01:02	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 01:02	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 01:02	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 01:02	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 01:02	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 01:02	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 01:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 01:02	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 01:02	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 01:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103464-11

Date Collected: 11/02/15 00:00

Matrix: Water

Date Received: 11/03/15 14:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		75 - 120		11/13/15 01:02	1
Dibromofluoromethane	86		75 - 120		11/13/15 01:02	1
1,2-Dichloroethane-d4 (Surr)	82		75 - 125		11/13/15 01:02	1
Toluene-d8 (Surr)	102		75 - 120		11/13/15 01:02	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

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Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103546

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 3.9

Client: Arcadis
Client Project #: C1001805.0002
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Elly Gatt
Lab PM:

Preservative Key
1. HCL, Cool to 4°

500-103546 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Ammonia	TAL Metals-Total	TAL Metals-Dissolved	VOCs						Comments
1		VAP-HPT-08(9-12)-110315	11-3-15	1510	6	W	X	X	X	X						
2		VAP-HPT-08(14-17)-110315	11-3-15	1540	6	W	X	X	X	X						
3		VAP-HPT9(9-12)-110415	11-4-15	0845	6	W	X	X	X	X						
4		VAP-HPT9(14-17)-110415	11-4-15	0100	6	W	X	X	X	X						
5		VAP-HPT11(10-13)-110415	11-4-15	1205	6	W	X	X	X	X						
6		VAP-HPT11(16-18)-110415	11-4-15	1300	6	W	X	X	X	X						
7		Trip Blank			2											Added by TA

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Elly Gatt	Arcadis	11-4-15	14:15	Daniel Bedem	TA	11-4-15	14:15
Daniel Bedem	TA	11-4-15	15:40	[illegible]	TA-CHI	11/4/15	15:40
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315

Lab Sample ID: 500-103546-1

Date Collected: 11/03/15 15:10
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/16/15 22:40	1
Benzene	<0.50		0.50	0.15	ug/L			11/16/15 22:40	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/16/15 22:40	1
Bromoform	<1.0		1.0	0.48	ug/L			11/16/15 22:40	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/16/15 22:40	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/16/15 22:40	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/16/15 22:40	1
Chlorobenzene	**2.5**		1.0	0.39	ug/L			11/16/15 22:40	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/16/15 22:40	1
Chloroform	<1.0		1.0	0.37	ug/L			11/16/15 22:40	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/16/15 22:40	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/16/15 22:40	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/16/15 22:40	1
Cyclohexane	**1.2**		1.0	0.49	ug/L			11/16/15 22:40	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/16/15 22:40	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/16/15 22:40	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/16/15 22:40	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/16/15 22:40	1
1,4-Dichlorobenzene	**1.6**		1.0	0.36	ug/L			11/16/15 22:40	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/16/15 22:40	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/16/15 22:40	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/16/15 22:40	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/16/15 22:40	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/16/15 22:40	1
Isopropylbenzene	**45**		1.0	0.39	ug/L			11/16/15 22:40	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/16/15 22:40	1
Methylcyclohexane	**0.64**	**J**	1.0	0.32	ug/L			11/16/15 22:40	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/16/15 22:40	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/16/15 22:40	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/16/15 22:40	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
Styrene	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/16/15 22:40	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/16/15 22:40	1
Toluene	<0.50		0.50	0.15	ug/L			11/16/15 22:40	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/16/15 22:40	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/16/15 22:40	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/16/15 22:40	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/16/15 22:40	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/16/15 22:40	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/16/15 22:40	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/16/15 22:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/16/15 22:40	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/16/15 22:40	1
Xylenes, Total	**0.46**	**J**	1.0	0.22	ug/L			11/16/15 22:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315

Date Collected: 11/03/15 15:10
Date Received: 11/04/15 15:40

Lab Sample ID: 500-103546-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/16/15 22:40*	*1*
Dibromofluoromethane	*85*		*75 - 120*		*11/16/15 22:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 125*		*11/16/15 22:40*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*11/16/15 22:40*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**12**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:01	1
Antimony	**0.019**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 21:43	1
Arsenic	**0.036**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:01	1
Barium	**2.9**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:01	1
Beryllium	**0.0022**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:01	1
Cadmium	**0.012**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:01	1
Calcium	**81**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:01	1
Chromium	**0.21**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:01	1
Cobalt	**0.015**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:01	1
Copper	**0.62**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:43	1
Iron	**110**	~~**B**~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:01	1
Lead	**1.8**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:01	1
Magnesium	**85**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:01	1
Manganese	**0.59**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:01	1
Nickel	**0.066**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:01	1
Potassium	**47**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:01	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:01	1
Silver	**0.0043**	**J**	0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:01	1
Sodium	**160**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:01	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:01	1
Vanadium	**0.018**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:01	1
Zinc	**3.5**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 02:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:06	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:06	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:06	1
Barium	**0.86**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:06	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:06	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:06	1
Calcium	**66**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:06	1
Chromium	**0.0027**	**J**	0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:06	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:06	1
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:47	1
Iron	**17**	~~**B**~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:06	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:06	1
Magnesium	**85**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:06	1
Manganese	**0.049**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:06	1
Nickel	**0.0032**	**J**	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:06	1
Potassium	**47**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:06	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:06	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315

Lab Sample ID: 500-103546-1

Date Collected: 11/03/15 15:10

Matrix: Water

Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**170**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:06	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:06	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:06	1
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**55**	~~B~~	4.0	0.86	mg/L		11/13/15 23:00	11/15/15 17:35	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315

Lab Sample ID: 500-103546-2

Date Collected: 11/03/15 15:40

Matrix: Water

Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/16/15 23:07	1
Benzene	**8.5**		0.50	0.15	ug/L			11/16/15 23:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/16/15 23:07	1
Bromoform	<1.0		1.0	0.48	ug/L			11/16/15 23:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/16/15 23:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/16/15 23:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/16/15 23:07	1
Chlorobenzene	**42**		1.0	0.39	ug/L			11/16/15 23:07	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/16/15 23:07	1
Chloroform	<1.0		1.0	0.37	ug/L			11/16/15 23:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/16/15 23:07	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/16/15 23:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/16/15 23:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/16/15 23:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/16/15 23:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/16/15 23:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/16/15 23:07	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/16/15 23:07	1
1,4-Dichlorobenzene	**3.8**		1.0	0.36	ug/L			11/16/15 23:07	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/16/15 23:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/16/15 23:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/16/15 23:07	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/16/15 23:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/16/15 23:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/16/15 23:07	1
Methylcyclohexane	**0.65**	**J**	1.0	0.32	ug/L			11/16/15 23:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/16/15 23:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/16/15 23:07	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/16/15 23:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
Styrene	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/16/15 23:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/16/15 23:07	1
Toluene	<0.50		0.50	0.15	ug/L			11/16/15 23:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/16/15 23:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/16/15 23:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/16/15 23:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/16/15 23:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/16/15 23:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/16/15 23:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/16/15 23:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/16/15 23:07	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/16/15 23:07	1
Xylenes, Total	**0.35**	**J**	1.0	0.22	ug/L			11/16/15 23:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315

Lab Sample ID: 500-103546-2

Date Collected: 11/03/15 15:40
Matrix: Water
Date Received: 11/04/15 15:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/16/15 23:07*	*1*
Dibromofluoromethane	*85*		*75 - 120*		*11/16/15 23:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 125*		*11/16/15 23:07*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*11/16/15 23:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	**450**		10	3.9	ug/L			11/13/15 14:33	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*11/13/15 14:33*	*10*
Dibromofluoromethane	*108*		*75 - 120*		*11/13/15 14:33*	*10*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 125*		*11/13/15 14:33*	*10*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/13/15 14:33*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.0**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:10	1
Antimony	<0.020		0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 21:51	1
Arsenic	**0.0076**	J	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:10	1
Barium	**0.43**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:10	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:10	1
Cadmium	**0.0041**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:10	1
Calcium	**65**	J	0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:10	1
Chromium	**0.036**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:10	1
Cobalt	**0.0031**	J	0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:10	1
Copper	**0.051**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:51	1
Iron	**32**	~~B~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:10	1
Lead	**0.29**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:10	1
Magnesium	**80**	J	0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:10	1
Manganese	**0.17**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:10	1
Nickel	**0.024**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:10	1
Potassium	**56**	J	0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:10	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:10	1
Silver	**0.0014**	J	0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:10	1
Sodium	**180**	J	1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:10	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:10	1
Vanadium	**0.0064**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:10	1
Zinc	**1.3**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 02:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:14	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:14	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:14	1
Barium	**0.45**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:14	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:14	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:14	1
Calcium	**80**	J	0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:14	1
Chromium	**0.0034**	J	0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:14	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315

Lab Sample ID: 500-103546-2

Date Collected: 11/03/15 15:40
Matrix: Water
Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:55	1
Iron	**19**	~~B~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:14	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:14	1
Magnesium	**100**	J	0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:14	1
Manganese	**0.082**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:14	1
Nickel	**0.0080**	J	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:14	1
Potassium	**71**	J	0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:14	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:14	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:14	1
Sodium	**230**	J	1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:14	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:14	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:14	1
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:41	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**120**	~~B~~	8.0	1.7	mg/L		11/13/15 23:00	11/15/15 18:53	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(9-12)-110415

Lab Sample ID: 500-103546-3

Date Collected: 11/04/15 08:45
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/16/15 23:34	1
Benzene	<0.50		0.50	0.15	ug/L			11/16/15 23:34	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/16/15 23:34	1
Bromoform	<1.0		1.0	0.48	ug/L			11/16/15 23:34	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/16/15 23:34	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/16/15 23:34	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/16/15 23:34	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/16/15 23:34	1
Chloroform	<1.0		1.0	0.37	ug/L			11/16/15 23:34	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/16/15 23:34	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/16/15 23:34	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/16/15 23:34	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/16/15 23:34	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/16/15 23:34	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/16/15 23:34	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/16/15 23:34	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/16/15 23:34	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/16/15 23:34	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/16/15 23:34	1
1,1-Dichloroethane	**0.69**	**J**	1.0	0.41	ug/L			11/16/15 23:34	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/16/15 23:34	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/16/15 23:34	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/16/15 23:34	1
Isopropylbenzene	**1.3**		1.0	0.39	ug/L			11/16/15 23:34	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/16/15 23:34	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/16/15 23:34	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/16/15 23:34	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/16/15 23:34	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/16/15 23:34	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
Styrene	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/16/15 23:34	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/16/15 23:34	1
Toluene	<0.50		0.50	0.15	ug/L			11/16/15 23:34	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/16/15 23:34	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/16/15 23:34	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/16/15 23:34	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/16/15 23:34	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/16/15 23:34	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/16/15 23:34	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/16/15 23:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/16/15 23:34	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/16/15 23:34	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/16/15 23:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(9-12)-110415

Date Collected: 11/04/15 08:45
Date Received: 11/04/15 15:40

Lab Sample ID: 500-103546-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*75 - 120*		*11/16/15 23:34*	*1*
Dibromofluoromethane	*84*		*75 - 120*		*11/16/15 23:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/16/15 23:34*	*1*
Toluene-d8 (Surr)	*105*		*75 - 120*		*11/16/15 23:34*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.8**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:19	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:19	1
Arsenic	**0.0062**	**J**	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:19	1
Barium	**0.35**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:19	1
Cadmium	**0.0035**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:19	1
Calcium	**120**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:19	1
Chromium	**0.035**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:19	1
Cobalt	**0.0079**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:19	1
Copper	**0.053**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:08	1
Iron	**43**	~~B~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:19	1
Lead	**0.076**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:19	1
Magnesium	**45**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:19	1
Manganese	**0.81**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:19	1
Nickel	**0.034**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:19	1
Potassium	**18**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:19	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:19	1
Sodium	**92**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:19	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:19	1
Vanadium	**0.024**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:19	1
Zinc	**0.70**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:00	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:23	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:23	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:23	1
Barium	**0.23**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:23	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:23	1
Calcium	**94**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:23	1
Chromium	<0.010		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:23	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:23	1
Copper	<0.010	^	0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:23	1
Iron	**15**	~~B~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:23	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:23	1
Magnesium	**35**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:23	1
Manganese	**0.45**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:23	1
Nickel	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:23	1
Potassium	**14**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:23	1
Selenium	**0.0060**	**J ^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(9-12)-110415

Lab Sample ID: 500-103546-3

Date Collected: 11/04/15 08:45

Matrix: Water

Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**76**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:23	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**16**	~~B~~	0.80	0.17	mg/L		11/13/15 23:00	11/15/15 17:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(14-17)-110415

Lab Sample ID: 500-103546-4

Date Collected: 11/04/15 11:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/17/15 00:01	1
Benzene	**1.5**		0.50	0.15	ug/L			11/17/15 00:01	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 00:01	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 00:01	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 00:01	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 00:01	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 00:01	1
Chlorobenzene	**11**		1.0	0.39	ug/L			11/17/15 00:01	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 00:01	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 00:01	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 00:01	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/17/15 00:01	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 00:01	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 00:01	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 00:01	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 00:01	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 00:01	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 00:01	1
1,4-Dichlorobenzene	**1.6**		1.0	0.36	ug/L			11/17/15 00:01	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 00:01	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 00:01	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 00:01	1
Ethylbenzene	**0.55**		0.50	0.18	ug/L			11/17/15 00:01	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 00:01	1
Isopropylbenzene	**7.6**		1.0	0.39	ug/L			11/17/15 00:01	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 00:01	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/17/15 00:01	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 00:01	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 00:01	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/17/15 00:01	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 00:01	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 00:01	1
Toluene	**0.57**		0.50	0.15	ug/L			11/17/15 00:01	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 00:01	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 00:01	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 00:01	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 00:01	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 00:01	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 00:01	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 00:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 00:01	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/17/15 00:01	1
Xylenes, Total	**5.8**		1.0	0.22	ug/L			11/17/15 00:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(14-17)-110415

Lab Sample ID: 500-103546-4

Date Collected: 11/04/15 11:00
Matrix: Water
Date Received: 11/04/15 15:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/17/15 00:01*	*1*
Dibromofluoromethane	*84*		*75 - 120*		*11/17/15 00:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 125*		*11/17/15 00:01*	*1*
Toluene-d8 (Surr)	*110*		*75 - 120*		*11/17/15 00:01*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8.1**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:27	1
Antimony	<0.020		0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 22:13	1
Arsenic	**0.031**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:27	1
Barium	**0.56**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:27	1
Beryllium	**0.0015**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:27	1
Cadmium	**0.0087**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:27	1
Calcium	**110**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:27	1
Chromium	**0.097**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:27	1
Cobalt	**0.0094**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:27	1
Copper	**0.21**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:13	1
Iron	**64**	~~**B**~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:27	1
Lead	**0.31**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:27	1
Magnesium	**43**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:27	1
Manganese	**0.77**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:27	1
Nickel	**0.042**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:27	1
Potassium	**17**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:27	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:27	1
Silver	**0.076**		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:27	1
Sodium	**91**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:27	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:27	1
Vanadium	**0.019**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:27	1
Zinc	**2.8**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:31	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:31	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:31	1
Barium	**0.28**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:31	1
Calcium	**95**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:31	1
Chromium	<0.010		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:31	1
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:17	1
Iron	**18**	~~**B**~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:31	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:31	1
Magnesium	**38**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:31	1
Manganese	**0.36**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:31	1
Nickel	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:31	1
Potassium	**16**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:31	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(14-17)-110415

Lab Sample ID: 500-103546-4

Date Collected: 11/04/15 11:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**85**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:31	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:31	1
Zinc	**0.034**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000088**	**J**	0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**22**	~~**B**~~	1.6	0.34	mg/L		11/13/15 23:00	11/15/15 17:49	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415

Lab Sample ID: 500-103546-5

Date Collected: 11/04/15 12:05
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**13**		5.0	1.7	ug/L			11/17/15 00:55	1
Benzene	**5.0**		0.50	0.15	ug/L			11/17/15 00:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 00:55	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 00:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 00:55	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 00:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 00:55	1
Chlorobenzene	**1.2**		1.0	0.39	ug/L			11/17/15 00:55	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 00:55	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 00:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 00:55	1
cis-1,2-Dichloroethene	**1.7**		1.0	0.41	ug/L			11/17/15 00:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 00:55	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 00:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 00:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 00:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 00:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 00:55	1
1,4-Dichlorobenzene	**30**		1.0	0.36	ug/L			11/17/15 00:55	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 00:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 00:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 00:55	1
Ethylbenzene	**97**		0.50	0.18	ug/L			11/17/15 00:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 00:55	1
Isopropylbenzene	**9.8**		1.0	0.39	ug/L			11/17/15 00:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 00:55	1
Methylcyclohexane	**1.6**		1.0	0.32	ug/L			11/17/15 00:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 00:55	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 00:55	1
methyl isobutyl ketone	**12**		5.0	2.2	ug/L			11/17/15 00:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 00:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 00:55	1
Toluene	**80**		0.50	0.15	ug/L			11/17/15 00:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 00:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 00:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 00:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 00:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 00:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 00:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 00:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 00:55	1
Vinyl chloride	**1.6**		0.50	0.20	ug/L			11/17/15 00:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415

Lab Sample ID: 500-103546-5

Date Collected: 11/04/15 12:05
Matrix: Water
Date Received: 11/04/15 15:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*75 - 120*		*11/17/15 00:55*	*1*
Dibromofluoromethane	*81*		*75 - 120*		*11/17/15 00:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 125*		*11/17/15 00:55*	*1*
Toluene-d8 (Surr)	*108*		*75 - 120*		*11/17/15 00:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**400**		10	2.2	ug/L			11/13/15 16:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/13/15 16:14*	*10*
Dibromofluoromethane	*108*		*75 - 120*		*11/13/15 16:14*	*10*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 125*		*11/13/15 16:14*	*10*
Toluene-d8 (Surr)	*94*		*75 - 120*		*11/13/15 16:14*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**32**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:35	1
Antimony	**0.017**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 22:21	1
Arsenic	**0.15**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:35	1
Barium	**1.4**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:35	1
Beryllium	**0.0058**		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:35	1
Cadmium	**0.023**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:35	1
Calcium	**26**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:35	1
Chromium	**0.32**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:35	1
Cobalt	**0.069**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:35	1
Copper	**0.99**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:21	1
Iron	**190**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:35	1
Lead	**3.7**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:35	1
Magnesium	**46**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:35	1
Manganese	**0.94**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:35	1
Nickel	**0.40**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:35	1
Potassium	**650**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:35	1
Selenium	**0.012**	**^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:35	1
Silver	**0.017**		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:35	1
Sodium	**3600**	J	10	4.3	mg/L		11/09/15 12:15	11/10/15 13:40	10
Thallium	<0.010	L	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:35	1
Vanadium	**0.19**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:35	1
Zinc	**2.1**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:09	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.20**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:41	1
Antimony	**0.0075**	**J ^**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:41	1
Arsenic	**0.039**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:41	1
Barium	**0.27**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:41	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:41	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:41	1
Calcium	**10**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:41	1
Chromium	**0.099**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:41	1
Cobalt	**0.040**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415

Lab Sample ID: 500-103546-5

Date Collected: 11/04/15 12:05
Matrix: Water
Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0044	J ^	0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:41	1
Iron	5.8	~~B~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:41	1
Lead	0.0044	J	0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:41	1
Magnesium	43		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:41	1
Manganese	0.023		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:41	1
Nickel	0.14		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:41	1
Potassium	690		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:41	1
Selenium	0.0070	J ^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:41	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:41	1
Sodium	4300	J	10	4.3	mg/L		11/09/15 12:15	11/10/15 13:56	10
Thallium	<0.010	L	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:41	1
Vanadium	0.058		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:41	1
Zinc	0.024		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00029		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	620	~~B~~	40	8.6	mg/L		11/13/15 23:00	11/15/15 18:56	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415

Lab Sample ID: 500-103546-6

Date Collected: 11/04/15 13:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**25**		5.0	1.7	ug/L			11/17/15 00:28	1
Benzene	**4.6**		0.50	0.15	ug/L			11/17/15 00:28	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 00:28	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 00:28	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 00:28	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 00:28	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 00:28	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 00:28	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 00:28	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 00:28	1
cis-1,2-Dichloroethene	**5.3**		1.0	0.41	ug/L			11/17/15 00:28	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 00:28	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			11/17/15 00:28	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 00:28	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 00:28	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 00:28	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 00:28	1
1,4-Dichlorobenzene	**26**		1.0	0.36	ug/L			11/17/15 00:28	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 00:28	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 00:28	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 00:28	1
Ethylbenzene	**56**		0.50	0.18	ug/L			11/17/15 00:28	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 00:28	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 00:28	1
Methylcyclohexane	**1.7**		1.0	0.32	ug/L			11/17/15 00:28	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 00:28	1
Methyl Ethyl Ketone	**21**		5.0	2.1	ug/L			11/17/15 00:28	1
methyl isobutyl ketone	**65**		5.0	2.2	ug/L			11/17/15 00:28	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 00:28	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 00:28	1
Toluene	**180**		0.50	0.15	ug/L			11/17/15 00:28	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 00:28	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 00:28	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 00:28	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 00:28	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 00:28	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 00:28	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 00:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 00:28	1
Vinyl chloride	**4.9**		0.50	0.20	ug/L			11/17/15 00:28	1
Xylenes, Total	**270**		1.0	0.22	ug/L			11/17/15 00:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415

Date Collected: 11/04/15 13:00
Date Received: 11/04/15 15:40

Lab Sample ID: 500-103546-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*75 - 120*		*11/17/15 00:28*	*1*
Dibromofluoromethane	*85*		*75 - 120*		*11/17/15 00:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/17/15 00:28*	*1*
Toluene-d8 (Surr)	*109*		*75 - 120*		*11/17/15 00:28*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8.0**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 13:00	1
Antimony	**0.015**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 22:26	1
Arsenic	**0.068**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:00	1
Barium	**1.2**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 13:00	1
Beryllium	**0.00085**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 13:00	1
Cadmium	**0.035**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 13:00	1
Calcium	**12**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 13:00	1
Chromium	**0.42**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 13:00	1
Cobalt	**0.066**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 13:00	1
Copper	**0.93**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:26	1
Iron	**14**	~~**B**~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 13:00	1
Lead	**2.1**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 13:00	1
Magnesium	**31**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 13:00	1
Manganese	**0.088**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 13:00	1
Nickel	**0.28**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:00	1
Potassium	**870**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 13:00	1
Selenium	**0.014**	**^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 13:00	1
Silver	**0.019**		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 13:00	1
Sodium	**3900**	J	10	4.3	mg/L		11/09/15 12:15	11/10/15 14:02	10
Thallium	<0.010	L	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 13:00	1
Vanadium	**0.12**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 13:00	1
Zinc	**2.4**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:14	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.46**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 13:05	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 13:05	1
Arsenic	**0.044**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:05	1
Barium	**0.92**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 13:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 13:05	1
Cadmium	**0.0026**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 13:05	1
Calcium	**9.7**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 13:05	1
Chromium	**0.28**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 13:05	1
Cobalt	**0.052**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 13:05	1
Copper	**0.018**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:31	1
Iron	**5.9**	~~**B**~~	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 13:05	1
Lead	**0.046**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 13:05	1
Magnesium	**32**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 13:05	1
Manganese	**0.024**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 13:05	1
Nickel	**0.21**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:05	1
Potassium	**870**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 13:05	1
Selenium	**0.0084**	**J ^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 13:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 13:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415

Lab Sample ID: 500-103546-6

Date Collected: 11/04/15 13:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	4500	J	10	4.3	mg/L		11/09/15 12:15	11/10/15 14:07	10
Thallium	<0.010	~~L~~	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 13:05	1
Vanadium	0.087		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 13:05	1
Zinc	0.060		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0011		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:57	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 13:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	790	~~B~~	40	8.6	mg/L		11/13/15 23:00	11/15/15 18:59	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103546-7

Date Collected: 11/03/15 00:00
Date Received: 11/04/15 15:40

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 17:29	1
Benzene	<0.50		0.50	0.15	ug/L			11/13/15 17:29	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 17:29	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 17:29	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 17:29	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 17:29	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 17:29	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 17:29	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 17:29	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 17:29	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 17:29	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 17:29	1
Cyclohexane	<1.0	*	1.0	0.49	ug/L			11/13/15 17:29	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 17:29	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 17:29	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 17:29	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 17:29	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 17:29	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 17:29	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 17:29	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 17:29	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 17:29	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 17:29	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 17:29	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 17:29	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 17:29	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 17:29	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 17:29	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 17:29	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 17:29	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 17:29	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 17:29	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 17:29	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 17:29	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 17:29	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 17:29	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 17:29	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 17:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	*	1.0	0.46	ug/L			11/13/15 17:29	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 17:29	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 17:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103546-7

Date Collected: 11/03/15 00:00

Matrix: Water

Date Received: 11/04/15 15:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		75 - 120		11/13/15 17:29	1
Dibromofluoromethane	105		75 - 120		11/13/15 17:29	1
1,2-Dichloroethane-d4 (Surr)	103		75 - 125		11/13/15 17:29	1
Toluene-d8 (Surr)	93		75 - 120		11/13/15 17:29	1

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-103623 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address:
Address:
Phone: 312-575-3721
Fax:
E-Mail:

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103623
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 3.3

Client: Arcadis
Client Project #: CI001805.0002.0003
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Bruce Evans
Lab PM:

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOC (Preservative 1)	Ammonia (Preservative 2)	Metals (Total) (Preservative 3)	Metals (Filtered) (Preservative 3)						Comments
1		VAP-HPT11 (19-22)-110415	11-4-15	1450	6	W	3	1	1	1						
2		VAP-HPT11 (24-27)-110415	11-4-15	1535	6	W	3	1	1	1						
3		VAP-HPT10 (10-13)-110515	11/5/15	09:00	6	W	3	1	1	1						
4		VAP-HPT10 (22-25)-110515	11/5/15	10:25	6	W	3	1	1	1						
5		VAP-HPT12 (8-11)-110515	11/5/15	13:06	6	W	3	1	1	1						
6		VAP-HPT13 (8-11)-110515	11/5/15	13:50	6	W	3	1	1	1						
7		Trip Blank														Added by TA

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	11-5-15	14:15	[signature]	TA	11-5-15	14:15
[signature]	TA	11-5-15	15:00	[signature]	TA-CHI	11/5/15	1500

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
1 cooler / 3 samples on Ice
Questions call Jack Kratzmeyer
312-575-3721

Lab Comments:

TAL-4124-500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415

Lab Sample ID: 500-103623-1

Date Collected: 11/04/15 14:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			11/18/15 04:49	1
Benzene	**6.8**		0.50	0.15	ug/L			11/18/15 04:49	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 04:49	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 04:49	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 04:49	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 04:49	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 04:49	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/18/15 04:49	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 04:49	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 04:49	1
cis-1,2-Dichloroethene	**2.3**		1.0	0.41	ug/L			11/18/15 04:49	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 04:49	1
Cyclohexane	**0.79**	**J**	1.0	0.49	ug/L			11/18/15 04:49	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 04:49	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 04:49	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/18/15 04:49	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 04:49	1
1,4-Dichlorobenzene	**7.8**		1.0	0.36	ug/L			11/18/15 04:49	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 04:49	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 04:49	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 04:49	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 04:49	1
Isopropylbenzene	**8.6**		1.0	0.39	ug/L			11/18/15 04:49	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 04:49	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			11/18/15 04:49	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 04:49	1
Methyl Ethyl Ketone	**6.8**		5.0	2.1	ug/L			11/18/15 04:49	1
methyl isobutyl ketone	**17**		5.0	2.2	ug/L			11/18/15 04:49	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 04:49	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 04:49	1
Toluene	**150**		0.50	0.15	ug/L			11/18/15 04:49	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 04:49	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 04:49	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 04:49	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 04:49	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 04:49	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 04:49	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 04:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 04:49	1
Vinyl chloride	**5.0**		0.50	0.20	ug/L			11/18/15 04:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*		*11/18/15 04:49*	*1*

TestAmerica Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415

Lab Sample ID: 500-103623-1

Date Collected: 11/04/15 14:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*90*		*75 - 120*		*11/18/15 04:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*		*11/18/15 04:49*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 04:49*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**270**		2.5	0.92	ug/L			11/17/15 07:46	5
Xylenes, Total	**1100**		5.0	1.1	ug/L			11/17/15 07:46	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*75 - 120*		*11/17/15 07:46*	*5*
Dibromofluoromethane	*85*		*75 - 120*		*11/17/15 07:46*	*5*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 125*		*11/17/15 07:46*	*5*
Toluene-d8 (Surr)	*120*		*75 - 120*		*11/17/15 07:46*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.9**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:06	1
Antimony	**0.010**	J	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 02:47	1
Arsenic	**0.048**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:47	1
Barium	**0.49**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 02:47	1
Cadmium	**0.0079**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 02:47	1
Calcium	**13**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:06	1
Chromium	**0.22**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 02:47	1
Cobalt	**0.051**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 02:47	1
Copper	**0.095**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:47	1
Iron	**15**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:06	1
Lead	**0.73**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 02:47	1
Magnesium	**28**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:06	1
Manganese	**0.067**	~~B~~	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 02:47	1
Nickel	**0.19**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:47	1
Potassium	**670**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 02:47	1
Selenium	**0.015**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:04	1
Silver	**0.0016**	J	0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 02:47	1
Sodium	**3000**	J	10	4.3	mg/L		11/09/15 12:15	11/13/15 19:49	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/13/15 22:06	1
Vanadium	**0.056**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:06	1
Zinc	**1.1**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 19:46	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.31**		0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:35	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:35	1
Arsenic	**0.017**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:35	1
Barium	**0.27**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:35	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:35	1
Calcium	**8.6**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:35	1
Chromium	**0.13**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415

Lab Sample ID: 500-103623-1

Date Collected: 11/04/15 14:50

Matrix: Water

Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.038		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:35	1
Copper	0.0053	J	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:35	1
Iron	3.9		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:35	1
Lead	0.024	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:35	1
Magnesium	21		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:35	1
Manganese	0.013		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:35	1
Nickel	0.12		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:35	1
Potassium	540		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:35	1
Selenium	0.0054	J	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:35	1
Sodium	3500	J	100	43	mg/L		11/10/15 09:10	11/11/15 20:38	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:35	1
Vanadium	0.023		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:35	1
Zinc	0.075		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00074		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	650	~~B~~	40	8.6	mg/L		11/16/15 16:40	11/16/15 19:27	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415

Lab Sample ID: 500-103623-2

Date Collected: 11/04/15 15:35
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**14**	J	10	3.5	ug/L			11/18/15 03:57	2
Benzene	**18**	J	1.0	0.29	ug/L			11/18/15 03:57	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/18/15 03:57	2
Bromoform	<2.0		2.0	0.97	ug/L			11/18/15 03:57	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/18/15 03:57	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			11/18/15 03:57	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
Chlorobenzene	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/18/15 03:57	2
Chloroform	<2.0		2.0	0.74	ug/L			11/18/15 03:57	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/18/15 03:57	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			11/18/15 03:57	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/18/15 03:57	2
Cyclohexane	<2.0		2.0	0.97	ug/L			11/18/15 03:57	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/18/15 03:57	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/18/15 03:57	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			11/18/15 03:57	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/18/15 03:57	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			11/18/15 03:57	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/18/15 03:57	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			11/18/15 03:57	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/18/15 03:57	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/18/15 03:57	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/18/15 03:57	2
2-Hexanone	<10		10	3.1	ug/L			11/18/15 03:57	2
Isopropylbenzene	**200**	J	2.0	0.77	ug/L			11/18/15 03:57	2
Methyl acetate	<10		10	4.0	ug/L			11/18/15 03:57	2
Methylcyclohexane	**7.0**	J	2.0	0.63	ug/L			11/18/15 03:57	2
Methylene Chloride	<10		10	3.3	ug/L			11/18/15 03:57	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/18/15 03:57	2
methyl isobutyl ketone	**5.7**	J	10	4.3	ug/L			11/18/15 03:57	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/18/15 03:57	2
Styrene	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/18/15 03:57	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/18/15 03:57	2
Toluene	**330**	J	1.0	0.30	ug/L			11/18/15 03:57	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/18/15 03:57	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/18/15 03:57	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/18/15 03:57	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/18/15 03:57	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/18/15 03:57	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/18/15 03:57	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/18/15 03:57	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/18/15 03:57	2
Vinyl chloride	**1.4**	J	1.0	0.41	ug/L			11/18/15 03:57	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*	*X*	*75 - 120*		*11/18/15 03:57*	*2*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415

Date Collected: 11/04/15 15:35
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 03:57*	*2*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*		*11/18/15 03:57*	*2*
Toluene-d8 (Surr)	*93*		*75 - 120*		*11/18/15 03:57*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**690**		10	3.7	ug/L			11/18/15 04:23	20
Xylenes, Total	**1600**		20	4.4	ug/L			11/18/15 04:23	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/18/15 04:23*	*20*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 04:23*	*20*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/18/15 04:23*	*20*
Toluene-d8 (Surr)	*89*		*75 - 120*		*11/18/15 04:23*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3.2**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:11	1
Antimony	**0.045**		0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 02:52	1
Arsenic	**0.027**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:52	1
Barium	**0.79**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 02:52	1
Cadmium	**0.0042**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 02:52	1
Calcium	**12**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:11	1
Chromium	**0.14**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 02:52	1
Cobalt	**0.035**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 02:52	1
Copper	**0.084**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:52	1
Iron	**9.4**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:11	1
Lead	**0.46**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 02:52	1
Magnesium	**44**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:11	1
Manganese	**0.055**	B	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 02:52	1
Nickel	**0.12**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:52	1
Potassium	**460**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 02:52	1
Selenium	<0.010		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:09	1
Silver	**0.012**		0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 02:52	1
Sodium	**2300**	J	10	4.3	mg/L		11/09/15 12:15	11/13/15 20:01	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/13/15 22:11	1
Vanadium	**0.039**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:11	1
Zinc	**1.1**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 19:52	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.19**	J	0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:40	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:40	1
Arsenic	**0.015**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:40	1
Barium	**0.59**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:40	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:40	1
Calcium	**10**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:40	1
Chromium	**0.11**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415

Lab Sample ID: 500-103623-2
Date Collected: 11/04/15 15:35
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.034		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:40	1
Copper	0.0031	J	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:40	1
Iron	4.7		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:40	1
Lead	0.013	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:40	1
Magnesium	43		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:40	1
Manganese	0.022		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:40	1
Nickel	0.11		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:40	1
Potassium	460		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:40	1
Selenium	0.0069	J	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:40	1
Sodium	3000	J	100	43	mg/L		11/10/15 09:10	11/11/15 20:50	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:40	1
Vanadium	0.027		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:40	1
Zinc	0.030		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00011	J	0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:17	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	500	~~B~~	40	8.6	mg/L		11/16/15 16:40	11/16/15 21:08	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(10-13)-110515

Lab Sample ID: 500-103623-3

Date Collected: 11/05/15 09:00
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**11**		5.0	1.7	ug/L			11/18/15 01:46	1
Benzene	**7.9**		0.50	0.15	ug/L			11/18/15 01:46	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 01:46	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 01:46	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 01:46	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 01:46	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 01:46	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			11/18/15 01:46	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/18/15 01:46	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 01:46	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 01:46	1
cis-1,2-Dichloroethene	**0.97**	**J**	1.0	0.41	ug/L			11/18/15 01:46	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 01:46	1
Cyclohexane	**1.3**		1.0	0.49	ug/L			11/18/15 01:46	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 01:46	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 01:46	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,2-Dichlorobenzene	**3.1**		1.0	0.33	ug/L			11/18/15 01:46	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 01:46	1
1,4-Dichlorobenzene	**4.3**		1.0	0.36	ug/L			11/18/15 01:46	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 01:46	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 01:46	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 01:46	1
Ethylbenzene	**62**		0.50	0.18	ug/L			11/18/15 01:46	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 01:46	1
Isopropylbenzene	**5.9**		1.0	0.39	ug/L			11/18/15 01:46	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 01:46	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/18/15 01:46	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 01:46	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 01:46	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 01:46	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 01:46	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 01:46	1
Toluene	**14**		0.50	0.15	ug/L			11/18/15 01:46	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 01:46	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 01:46	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 01:46	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 01:46	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 01:46	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 01:46	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 01:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 01:46	1
Vinyl chloride	**0.68**		0.50	0.20	ug/L			11/18/15 01:46	1
Xylenes, Total	**210**		1.0	0.22	ug/L			11/18/15 01:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(10-13)-110515

Lab Sample ID: 500-103623-3

Date Collected: 11/05/15 09:00
Matrix: Water
Date Received: 11/05/15 15:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*11/18/15 01:46*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 01:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*		*11/18/15 01:46*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*11/18/15 01:46*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.2**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:17	1
Antimony	**0.0099**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 02:57	1
Arsenic	**0.049**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:57	1
Barium	**0.52**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 02:57	1
Cadmium	**0.013**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 02:57	1
Calcium	**24**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:17	1
Chromium	**0.13**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 02:57	1
Cobalt	**0.034**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 02:57	1
Copper	**0.18**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:57	1
Iron	**35**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:17	1
Lead	**1.7**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 02:57	1
Magnesium	**52**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:17	1
Manganese	**0.21**	~~B~~	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 02:57	1
Nickel	**0.17**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:57	1
Potassium	**380**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 02:57	1
Selenium	**0.0077**	**J**	0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:14	1
Silver	**0.0030**	**J**	0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 02:57	1
Sodium	**3200**		10	4.3	mg/L		11/09/15 12:15	11/13/15 20:06	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/11/15 02:57	1
Vanadium	**0.029**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:17	1
Zinc	**2.5**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 19:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:45	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:45	1
Arsenic	**0.017**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:45	1
Barium	**0.29**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:45	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:45	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:45	1
Calcium	**16**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:45	1
Chromium	**0.058**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:45	1
Cobalt	**0.026**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:45	1
Copper	<0.010		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:45	1
Iron	**4.4**		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:45	1
Lead	**0.0098**	**^**	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:45	1
Magnesium	**49**		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:45	1
Manganese	**0.024**		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:45	1
Nickel	**0.099**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:45	1
Potassium	**380**		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:45	1
Selenium	**0.0055**	**J**	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:45	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(10-13)-110515

Lab Sample ID: 500-103623-3

Date Collected: 11/05/15 09:00
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**2700**		100	43	mg/L		11/10/15 09:10	11/11/15 20:54	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:45	1
Vanadium	**0.014**		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:45	1
Zinc	**0.051**		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00034**		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:21	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**420**	~~B~~	20	4.3	mg/L		11/16/15 16:40	11/16/15 19:33	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515

Lab Sample ID: 500-103623-4

Date Collected: 11/05/15 10:25
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**11**		5.0	1.7	ug/L			11/18/15 02:13	1
Benzene	**14**		0.50	0.15	ug/L			11/18/15 02:13	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 02:13	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 02:13	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 02:13	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 02:13	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 02:13	1
Chlorobenzene	**6.3**		1.0	0.39	ug/L			11/18/15 02:13	1
Chloroethane	**3.8**		1.0	0.47	ug/L			11/18/15 02:13	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 02:13	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 02:13	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/18/15 02:13	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 02:13	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/18/15 02:13	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 02:13	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 02:13	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,2-Dichlorobenzene	**1.9**		1.0	0.33	ug/L			11/18/15 02:13	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 02:13	1
1,4-Dichlorobenzene	**6.9**		1.0	0.36	ug/L			11/18/15 02:13	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 02:13	1
1,1-Dichloroethane	**1.1**		1.0	0.41	ug/L			11/18/15 02:13	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 02:13	1
Ethylbenzene	**63**		0.50	0.18	ug/L			11/18/15 02:13	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 02:13	1
Isopropylbenzene	**4.8**		1.0	0.39	ug/L			11/18/15 02:13	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 02:13	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/18/15 02:13	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 02:13	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 02:13	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 02:13	1
Methyl tert-butyl ether	**0.42**	**J**	1.0	0.39	ug/L			11/18/15 02:13	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 02:13	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 02:13	1
Toluene	**13**		0.50	0.15	ug/L			11/18/15 02:13	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 02:13	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 02:13	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 02:13	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 02:13	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 02:13	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 02:13	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 02:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 02:13	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/18/15 02:13	1
Xylenes, Total	**170**		1.0	0.22	ug/L			11/18/15 02:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515

Date Collected: 11/05/15 10:25
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*11/18/15 02:13*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*11/18/15 02:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/18/15 02:13*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 02:13*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**12**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:22	1
Antimony	**0.017**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 03:02	1
Arsenic	**0.060**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:02	1
Barium	**0.74**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:02	1
Beryllium	**0.0011**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 03:02	1
Cadmium	**0.68**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 03:02	1
Calcium	**47**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:22	1
Chromium	**0.24**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 03:02	1
Cobalt	**0.092**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 03:02	1
Copper	**0.62**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:02	1
Iron	**110**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:22	1
Lead	**1.3**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 03:02	1
Magnesium	**57**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:22	1
Manganese	**0.75**	~~B~~	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 03:02	1
Nickel	**0.78**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:02	1
Potassium	**500**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 03:02	1
Selenium	**0.013**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:19	1
Silver	**0.0073**		0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 03:02	1
Sodium	**2600**	J	10	4.3	mg/L		11/09/15 12:15	11/13/15 20:11	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/13/15 22:22	1
Vanadium	**0.067**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:22	1
Zinc	**2.8**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 20:02	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.14**	**J**	0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:59	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:59	1
Arsenic	**0.013**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:59	1
Barium	**0.21**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:59	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:59	1
Calcium	**13**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:59	1
Chromium	**0.087**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:59	1
Cobalt	**0.040**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:59	1
Copper	<0.010		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:59	1
Iron	**6.0**		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:59	1
Lead	**0.0059**	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:59	1
Magnesium	**44**		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:59	1
Manganese	**0.028**		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:59	1
Nickel	**0.17**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:59	1
Potassium	**490**		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:59	1
Selenium	**0.0060**	**J**	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515

Lab Sample ID: 500-103623-4

Date Collected: 11/05/15 10:25
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	4000	J	100	43	mg/L		11/10/15 09:10	11/11/15 20:58	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:59	1
Vanadium	0.022		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:59	1
Zinc	0.020		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00019	J	0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:25	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	530	~~B~~	40	8.6	mg/L		11/16/15 16:40	11/16/15 19:36	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515

Lab Sample ID: 500-103623-5

Date Collected: 11/05/15 13:06
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.5**		5.0	1.7	ug/L			11/18/15 02:39	1
Benzene	**8.9**		0.50	0.15	ug/L			11/18/15 02:39	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 02:39	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 02:39	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 02:39	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 02:39	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 02:39	1
Chlorobenzene	**16**		1.0	0.39	ug/L			11/18/15 02:39	1
Chloroethane	**32**		1.0	0.47	ug/L			11/18/15 02:39	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 02:39	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 02:39	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/18/15 02:39	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 02:39	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/18/15 02:39	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 02:39	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 02:39	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,2-Dichlorobenzene	**2.8**		1.0	0.33	ug/L			11/18/15 02:39	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 02:39	1
1,4-Dichlorobenzene	**10**		1.0	0.36	ug/L			11/18/15 02:39	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 02:39	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 02:39	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 02:39	1
Ethylbenzene	**91**		0.50	0.18	ug/L			11/18/15 02:39	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 02:39	1
Isopropylbenzene	**6.9**		1.0	0.39	ug/L			11/18/15 02:39	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 02:39	1
Methylcyclohexane	**1.6**		1.0	0.32	ug/L			11/18/15 02:39	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 02:39	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 02:39	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 02:39	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 02:39	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 02:39	1
Toluene	**14**		0.50	0.15	ug/L			11/18/15 02:39	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 02:39	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 02:39	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 02:39	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 02:39	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 02:39	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 02:39	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 02:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 02:39	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/18/15 02:39	1
Xylenes, Total	**210**		1.0	0.22	ug/L			11/18/15 02:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515

Date Collected: 11/05/15 13:06
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*11/18/15 02:39*	*1*
Dibromofluoromethane	*88*		*75 - 120*		*11/18/15 02:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/18/15 02:39*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 02:39*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.2**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:27	1
Antimony	**0.0085**	J	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 03:07	1
Arsenic	**0.026**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:07	1
Barium	**0.18**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 03:07	1
Cadmium	**0.0027**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 03:07	1
Calcium	**60**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:27	1
Chromium	**0.12**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 03:07	1
Cobalt	**0.024**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 03:07	1
Copper	**0.028**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:07	1
Iron	**4.6**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:27	1
Lead	**0.16**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 03:07	1
Magnesium	**58**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:27	1
Manganese	**0.043**	~~B~~ UB	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 03:07	1
Nickel	**0.074**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:07	1
Potassium	**380**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 03:07	1
Selenium	**0.011**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 03:07	1
Sodium	**2800**	J	10	4.3	mg/L		11/09/15 12:15	11/13/15 20:17	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/11/15 03:07	1
Vanadium	**0.035**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:27	1
Zinc	**0.18**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 20:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.25**		0.20	0.062	mg/L		11/10/15 09:10	11/10/15 21:04	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 21:04	1
Arsenic	**0.015**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:04	1
Barium	**0.16**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 21:04	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 21:04	1
Calcium	**32**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 21:04	1
Chromium	**0.095**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 21:04	1
Cobalt	**0.024**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 21:04	1
Copper	**0.0023**	J	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:04	1
Iron	**2.3**		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 21:04	1
Lead	**0.0064**	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 21:04	1
Magnesium	**56**		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 21:04	1
Manganese	**0.021**		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 21:04	1
Nickel	**0.069**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:04	1
Potassium	**390**		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 21:04	1
Selenium	<0.010		0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 21:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 21:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515

Lab Sample ID: 500-103623-5

Date Collected: 11/05/15 13:06
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	3200	J	100	43	mg/L		11/10/15 09:10	11/11/15 21:02	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 21:04	1
Vanadium	0.027		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 21:04	1
Zinc	0.020		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00012	J	0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	450	~~B~~	20	4.3	mg/L		11/16/15 16:40	11/16/15 21:11	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT13(8-11)-110515

Lab Sample ID: 500-103623-6

Date Collected: 11/05/15 13:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			11/18/15 03:05	1
Benzene	**11**		0.50	0.15	ug/L			11/18/15 03:05	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 03:05	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 03:05	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 03:05	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 03:05	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 03:05	1
Chlorobenzene	**1.4**		1.0	0.39	ug/L			11/18/15 03:05	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/18/15 03:05	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 03:05	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 03:05	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/18/15 03:05	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 03:05	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/18/15 03:05	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 03:05	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 03:05	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,2-Dichlorobenzene	**2.6**		1.0	0.33	ug/L			11/18/15 03:05	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 03:05	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			11/18/15 03:05	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 03:05	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 03:05	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 03:05	1
Ethylbenzene	**100**		0.50	0.18	ug/L			11/18/15 03:05	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 03:05	1
Isopropylbenzene	**7.2**		1.0	0.39	ug/L			11/18/15 03:05	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 03:05	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/18/15 03:05	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 03:05	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 03:05	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 03:05	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 03:05	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 03:05	1
Toluene	**8.3**		0.50	0.15	ug/L			11/18/15 03:05	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 03:05	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 03:05	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 03:05	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 03:05	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 03:05	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 03:05	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 03:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 03:05	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/18/15 03:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT13(8-11)-110515

Date Collected: 11/05/15 13:50
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*11/18/15 03:05*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*11/18/15 03:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*		*11/18/15 03:05*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 03:05*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**380**		10	2.2	ug/L			11/18/15 03:31	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*11/18/15 03:31*	*10*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 03:31*	*10*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*		*11/18/15 03:31*	*10*
Toluene-d8 (Surr)	*88*		*75 - 120*		*11/18/15 03:31*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**6.1**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:32	1
Antimony	**0.011**	J	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 03:13	1
Arsenic	**0.066**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:13	1
Barium	**0.82**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:13	1
Beryllium	**0.0015**	J	0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 03:13	1
Cadmium	**0.0057**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 03:13	1
Calcium	**45**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:32	1
Chromium	**0.22**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 03:13	1
Cobalt	**0.053**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 03:13	1
Copper	**0.26**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:13	1
Iron	**36**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:32	1
Lead	**0.70**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 03:13	1
Magnesium	**47**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:32	1
Manganese	**0.23**	~~B~~	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 03:13	1
Nickel	**0.19**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:13	1
Potassium	**510**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 03:13	1
Selenium	**0.011**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:30	1
Silver	**0.0014**	J	0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 03:13	1
~~**Sodium**~~	~~**1200**~~	R	~~10~~	~~4.3~~	~~mg/L~~		~~11/09/15 12:15~~	~~11/13/15 20:22~~	~~10~~
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/11/15 03:13	1
Vanadium	**0.046**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:32	1
Zinc	**0.71**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 20:12	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.52**		0.20	0.062	mg/L		11/10/15 09:10	11/10/15 21:09	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 21:09	1
Arsenic	**0.023**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:09	1
Barium	**0.49**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 21:09	1
Cadmium	**0.0015**	J	0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 21:09	1
Calcium	**29**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 21:09	1
Chromium	**0.17**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 21:09	1
Cobalt	**0.049**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 21:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT13(8-11)-110515

Lab Sample ID: 500-103623-6

Date Collected: 11/05/15 13:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0060	J	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:09	1
Iron	5.2		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 21:09	1
Lead	0.022	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 21:09	1
Magnesium	45		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 21:09	1
Manganese	0.031		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 21:09	1
Nickel	0.15		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:09	1
Potassium	540		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 21:09	1
Selenium	0.0095	J	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 21:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 21:09	1
~~Sodium~~	~~4800~~	R	~~100~~	~~43~~	~~mg/L~~		~~11/10/15 09:10~~	~~11/11/15 21:07~~	~~100~~
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 21:09	1
Vanadium	0.026		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 21:09	1
Zinc	0.088		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00045		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:37	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	620	~~B~~	40	8.6	mg/L		11/16/15 16:40	11/16/15 19:47	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: Trip Blank

Date Collected: 11/04/15 00:00
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-7

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/17/15 22:43	1
Benzene	<0.50		0.50	0.15	ug/L			11/17/15 22:43	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 22:43	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 22:43	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 22:43	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 22:43	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 22:43	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 22:43	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 22:43	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 22:43	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/17/15 22:43	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 22:43	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 22:43	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 22:43	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 22:43	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 22:43	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 22:43	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/17/15 22:43	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 22:43	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 22:43	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 22:43	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/17/15 22:43	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 22:43	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 22:43	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/17/15 22:43	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 22:43	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 22:43	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/17/15 22:43	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 22:43	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 22:43	1
Toluene	<0.50		0.50	0.15	ug/L			11/17/15 22:43	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 22:43	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 22:43	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 22:43	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 22:43	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 22:43	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 22:43	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 22:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 22:43	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/17/15 22:43	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/17/15 22:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103623-7

Date Collected: 11/04/15 00:00

Matrix: Water

Date Received: 11/05/15 15:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		75 - 120		11/17/15 22:43	1
Dibromofluoromethane	92		75 - 120		11/17/15 22:43	1
1,2-Dichloroethane-d4 (Surr)	94		75 - 125		11/17/15 22:43	1
Toluene-d8 (Surr)	89		75 - 120		11/17/15 22:43	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address:
Address:
Phone: 312-525-3721
Fax:
E-Mail:

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103708
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 0.4

Client: Arcadis
Client Project #: CI001805.0002.00003
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Bruce Evans
Lab PM:

Preservative Key: 1° / 2 to 4° / 3 4° / 4 4° / 5 1 to 4°

500-103708 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs (Preservative 1)	Ammonia (Preservative 2)	Metals Total (Preservative 3)	Metals Dissolved (Filtered) (Preservative 3)						Comments
1		VAP-APT13(13-16)-110515	11/5/15	14:55	6	W	3	1	1	1						
2		VAP-APT13(19-22)-110615	11/6/15	08:05	6	W	3	1	1	1						
3		VAP-APT13(24-27)-110615	11/6/15	09:15	6	W	3	1	1	1						
4		VAP-APT14(10-13)-110615	11/6/15	10:25	6	W	3	1	1	1						
5		VAP-HPT14(14-17)-110615	11/6/15	11:20	6	W	3	1	1	1						
6		VAP-APT14(20-22)-110615	11/6/15	12:30	6	W	3	1	1	1						
7		VAP-HPT15(10-13)-110615	11/6/15	13:30	6	W	3	1	1	1						
8		VAP-HPT15(15-18)-110615	11/6/15	14:15	6	W	3	1	1	1						
9		TB-1(110615)	-	-	2	W	2									Trip Blank

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____ Standard

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	11-6-15	14:40	David Bedson	TA	11-6-15	14:40
David Bedson	TA	11-6-15	17:05	[signature]	TA-CHI	11/6/15	17:05
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA-CHI
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
1 Cooler/Samples on Ice
Questions: Call Jack Kratzmeyer
312-575-3721

Lab Comments:

TAL-4124-500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515

Lab Sample ID: 500-103708-1

Date Collected: 11/05/15 14:55
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**34**	UB	10	3.5	ug/L			11/19/15 13:41	2
Benzene	**20**		1.0	0.29	ug/L			11/19/15 13:41	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/19/15 13:41	2
Bromoform	<2.0		2.0	0.97	ug/L			11/19/15 13:41	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/19/15 13:41	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			11/19/15 13:41	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/19/15 13:41	2
Chlorobenzene	**3.3**		2.0	0.77	ug/L			11/19/15 13:41	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/19/15 13:41	2
Chloroform	<2.0		2.0	0.74	ug/L			11/19/15 13:41	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/19/15 13:41	2
cis-1,2-Dichloroethene	**4.0**		2.0	0.82	ug/L			11/19/15 13:41	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/19/15 13:41	2
Cyclohexane	<2.0		2.0	0.97	ug/L			11/19/15 13:41	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/19/15 13:41	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/19/15 13:41	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/19/15 13:41	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			11/19/15 13:41	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/19/15 13:41	2
1,4-Dichlorobenzene	**28**		2.0	0.73	ug/L			11/19/15 13:41	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/19/15 13:41	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			11/19/15 13:41	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/19/15 13:41	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/19/15 13:41	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/19/15 13:41	2
Ethylbenzene	**270**		1.0	0.37	ug/L			11/19/15 13:41	2
2-Hexanone	<10		10	3.1	ug/L			11/19/15 13:41	2
Isopropylbenzene	**14**		2.0	0.77	ug/L			11/19/15 13:41	2
Methyl acetate	<10		10	4.0	ug/L			11/19/15 13:41	2
Methylcyclohexane	**2.1**		2.0	0.63	ug/L			11/19/15 13:41	2
Methylene Chloride	<10		10	3.3	ug/L			11/19/15 13:41	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/19/15 13:41	2
methyl isobutyl ketone	**41**		10	4.3	ug/L			11/19/15 13:41	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/19/15 13:41	2
Styrene	<2.0		2.0	0.77	ug/L			11/19/15 13:41	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/19/15 13:41	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/19/15 13:41	2
Toluene	**300**		1.0	0.30	ug/L			11/19/15 13:41	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/19/15 13:41	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/19/15 13:41	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/19/15 13:41	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/19/15 13:41	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/19/15 13:41	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/19/15 13:41	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/19/15 13:41	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/19/15 13:41	2
Vinyl chloride	**4.0**		1.0	0.41	ug/L			11/19/15 13:41	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515

Date Collected: 11/05/15 14:55
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/19/15 13:41*	*2*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 13:41*	*2*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*		*11/19/15 13:41*	*2*
Toluene-d8 (Surr)	*98*		*75 - 120*		*11/19/15 13:41*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**940**		20	4.4	ug/L			11/19/15 14:06	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*11/19/15 14:06*	*20*
Dibromofluoromethane	*103*		*75 - 120*		*11/19/15 14:06*	*20*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*		*11/19/15 14:06*	*20*
Toluene-d8 (Surr)	*93*		*75 - 120*		*11/19/15 14:06*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.4**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:15	1
Antimony	**0.0098**	**J**	0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:15	1
Arsenic	**0.043**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:15	1
Barium	**0.34**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:15	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:15	1
Cadmium	**0.0065**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:15	1
Calcium	**11**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:15	1
Chromium	**0.30**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:15	1
Cobalt	**0.048**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:15	1
Copper	**0.071**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:15	1
Iron	**11**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:15	1
Lead	**0.57**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:15	1
Magnesium	**22**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:15	1
Manganese	**0.064**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:15	1
Nickel	**0.20**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:15	1
Potassium	**580**	J	0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:15	1
Selenium	**0.016**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:14	1
Silver	**0.0026**	**J**	0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:15	1
Sodium	**3600**		10	4.3	mg/L		11/10/15 16:24	11/14/15 03:20	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:14	1
Vanadium	**0.041**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:15	1
Zinc	**1.0**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.0**		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:26	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:26	1
Arsenic	**0.027**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:26	1
Barium	**0.28**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:26	1
Cadmium	**0.0037**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:26	1
Calcium	**12**	~~B~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:26	1
Chromium	**0.32**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:26	1
Cobalt	**0.058**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515

Lab Sample ID: 500-103708-1
Date Collected: 11/05/15 14:55
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.020		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:26	1
Iron	5.5		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:26	1
Lead	0.078		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:26	1
Magnesium	25		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:26	1
Manganese	0.025		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:26	1
Nickel	0.22		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:26	1
Potassium	680	J	0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:26	1
Selenium	0.012		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:26	1
Sodium	3900		10	4.3	mg/L		11/11/15 10:00	11/14/15 20:56	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:26	1
Vanadium	0.040		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:26	1
Zinc	0.24		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00061		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:12	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J	0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	810	~~B~~	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:02	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(19-22)-110615

Lab Sample ID: 500-103708-2

Date Collected: 11/06/15 08:05
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**	UB	25	8.7	ug/L			11/19/15 14:30	5
Benzene	**16**		2.5	0.73	ug/L			11/19/15 14:30	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Bromoform	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
Bromomethane	<10		10	4.0	ug/L			11/19/15 14:30	5
Carbon disulfide	<10		10	2.2	ug/L			11/19/15 14:30	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Chlorobenzene	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Chloroethane	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
Chloroform	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Chloromethane	<5.0		5.0	1.6	ug/L			11/19/15 14:30	5
cis-1,2-Dichloroethene	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
Cyclohexane	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			11/19/15 14:30	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
1,2-Dichlorobenzene	<5.0		5.0	1.7	ug/L			11/19/15 14:30	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
1,4-Dichlorobenzene	**15**		5.0	1.8	ug/L			11/19/15 14:30	5
Dichlorodifluoromethane	<10		10	2.7	ug/L			11/19/15 14:30	5
1,1-Dichloroethane	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
Ethylbenzene	**390**		2.5	0.92	ug/L			11/19/15 14:30	5
2-Hexanone	<25		25	7.8	ug/L			11/19/15 14:30	5
Isopropylbenzene	**17**		5.0	1.9	ug/L			11/19/15 14:30	5
Methyl acetate	<25		25	10	ug/L			11/19/15 14:30	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			11/19/15 14:30	5
Methylene Chloride	<25		25	8.2	ug/L			11/19/15 14:30	5
Methyl Ethyl Ketone	<25		25	11	ug/L			11/19/15 14:30	5
methyl isobutyl ketone	**29**		25	11	ug/L			11/19/15 14:30	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
Styrene	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Toluene	**250**		2.5	0.76	ug/L			11/19/15 14:30	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			11/19/15 14:30	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			11/19/15 14:30	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			11/19/15 14:30	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			11/19/15 14:30	5
Trichloroethene	<2.5		2.5	0.82	ug/L			11/19/15 14:30	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			11/19/15 14:30	5
Vinyl chloride	**2.9**		2.5	1.0	ug/L			11/19/15 14:30	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(19-22)-110615

Lab Sample ID: 500-103708-2

Date Collected: 11/06/15 08:05
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*11/19/15 14:30*	*5*
Dibromofluoromethane	*103*		*75 - 120*		*11/19/15 14:30*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*11/19/15 14:30*	*5*
Toluene-d8 (Surr)	*96*		*75 - 120*		*11/19/15 14:30*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**1800**		50	11	ug/L			11/19/15 14:55	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/19/15 14:55*	*50*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 14:55*	*50*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*11/19/15 14:55*	*50*
Toluene-d8 (Surr)	*93*		*75 - 120*		*11/19/15 14:55*	*50*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**15**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:34	1
Antimony	**0.012**	**J**	0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:34	1
Arsenic	**0.071**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:34	1
Barium	**1.0**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:34	1
Beryllium	**0.0015**	**J**	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:34	1
Cadmium	**0.014**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:34	1
Calcium	**42**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:34	1
Chromium	**0.72**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:34	1
Cobalt	**0.070**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:34	1
Copper	**0.92**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:34	1
Iron	**45**	**^**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:34	1
Lead	**1.1**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:34	1
Magnesium	**25**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:34	1
Manganese	**0.45**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:34	1
Nickel	**0.29**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:34	1
Potassium	**640**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:34	1
Selenium	**0.025**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:28	1
Silver	**0.013**		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:34	1
Sodium	**3600**		10	4.3	mg/L		11/10/15 16:24	11/14/15 03:39	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:28	1
Vanadium	**0.074**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:34	1
Zinc	**2.3**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:34	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.78**		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:31	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:31	1
Arsenic	**0.034**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:31	1
Barium	**0.37**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:31	1
Cadmium	**0.0026**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:31	1
Calcium	**11**	~~**B**~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:31	1
Chromium	**0.43**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:31	1
Cobalt	**0.060**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(19-22)-110615

Lab Sample ID: 500-103708-2
Date Collected: 11/06/15 08:05
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.019		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:31	1
Iron	8.6		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:31	1
Lead	0.022		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:31	1
Magnesium	17		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:31	1
Manganese	0.068		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:31	1
Nickel	0.23		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:31	1
Potassium	650		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:31	1
Selenium	0.0075	J	0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:31	1
Sodium	4000		10	4.3	mg/L		11/11/15 10:00	11/14/15 21:09	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:31	1
Vanadium	0.045		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:31	1
Zinc	0.29		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0021		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:16	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	870	~~B~~	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:05	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615

Lab Sample ID: 500-103708-3

Date Collected: 11/06/15 09:15
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**15**	UB	10	3.5	ug/L			11/19/15 15:20	2
Benzene	**22**		1.0	0.29	ug/L			11/19/15 15:20	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/19/15 15:20	2
Bromoform	<2.0		2.0	0.97	ug/L			11/19/15 15:20	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/19/15 15:20	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			11/19/15 15:20	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/19/15 15:20	2
Chlorobenzene	**3.3**		2.0	0.77	ug/L			11/19/15 15:20	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/19/15 15:20	2
Chloroform	<2.0		2.0	0.74	ug/L			11/19/15 15:20	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/19/15 15:20	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			11/19/15 15:20	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/19/15 15:20	2
Cyclohexane	<2.0		2.0	0.97	ug/L			11/19/15 15:20	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/19/15 15:20	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/19/15 15:20	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/19/15 15:20	2
1,2-Dichlorobenzene	**14**		2.0	0.67	ug/L			11/19/15 15:20	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/19/15 15:20	2
1,4-Dichlorobenzene	**7.9**		2.0	0.73	ug/L			11/19/15 15:20	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/19/15 15:20	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			11/19/15 15:20	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/19/15 15:20	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/19/15 15:20	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/19/15 15:20	2
Ethylbenzene	**220**		1.0	0.37	ug/L			11/19/15 15:20	2
2-Hexanone	<10		10	3.1	ug/L			11/19/15 15:20	2
Isopropylbenzene	**7.7**		2.0	0.77	ug/L			11/19/15 15:20	2
Methyl acetate	<10		10	4.0	ug/L			11/19/15 15:20	2
Methylcyclohexane	<2.0		2.0	0.63	ug/L			11/19/15 15:20	2
Methylene Chloride	<10		10	3.3	ug/L			11/19/15 15:20	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/19/15 15:20	2
methyl isobutyl ketone	<10		10	4.3	ug/L			11/19/15 15:20	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/19/15 15:20	2
Styrene	<2.0		2.0	0.77	ug/L			11/19/15 15:20	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/19/15 15:20	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/19/15 15:20	2
Toluene	**57**		1.0	0.30	ug/L			11/19/15 15:20	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/19/15 15:20	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/19/15 15:20	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/19/15 15:20	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/19/15 15:20	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/19/15 15:20	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/19/15 15:20	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/19/15 15:20	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/19/15 15:20	2
Vinyl chloride	**0.64**	J	1.0	0.41	ug/L			11/19/15 15:20	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615

Lab Sample ID: 500-103708-3

Date Collected: 11/06/15 09:15
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/19/15 15:20*	*2*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 15:20*	*2*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 15:20*	*2*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/19/15 15:20*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**930**		20	4.4	ug/L			11/19/15 15:45	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/19/15 15:45*	*20*
Dibromofluoromethane	*104*		*75 - 120*		*11/19/15 15:45*	*20*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*11/19/15 15:45*	*20*
Toluene-d8 (Surr)	*94*		*75 - 120*		*11/19/15 15:45*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**33**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:44	1
Antimony	**0.021**		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:44	1
Arsenic	**0.097**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:44	1
Barium	**0.86**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:44	1
Beryllium	**0.0016**	J	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:44	1
Cadmium	**0.017**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:44	1
Calcium	**160**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:44	1
Chromium	**0.57**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:44	1
Cobalt	**0.069**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:44	1
Copper	**1.3**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:44	1
Iron	**250**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:44	1
Lead	**3.0**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:44	1
Magnesium	**65**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:44	1
Manganese	**1.7**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:44	1
Nickel	**0.36**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:44	1
Potassium	**310**	J	0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:44	1
Selenium	**0.015**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:33	1
Silver	**0.15**		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:44	1
Sodium	**2100**	J	10	4.3	mg/L		11/10/15 16:24	11/14/15 03:49	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:33	1
Vanadium	**0.069**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:44	1
Zinc	**3.9**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:44	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	J	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:37	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:37	1
Arsenic	**0.013**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:37	1
Barium	**0.12**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:37	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:37	1
Cadmium	**0.0019**	J	0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:37	1
Calcium	**11**	~~B~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:37	1
Chromium	**0.14**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:37	1
Cobalt	**0.032**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615

Lab Sample ID: 500-103708-3

Date Collected: 11/06/15 09:15

Matrix: Water

Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0066	J	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:37	1
Iron	3.8		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:37	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:37	1
Magnesium	34		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:37	1
Manganese	0.032		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:37	1
Nickel	0.11		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:37	1
Potassium	370	J	0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:37	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:37	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:37	1
Sodium	2500	J	10	4.3	mg/L		11/11/15 10:00	11/14/15 21:14	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:37	1
Vanadium	0.019		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:37	1
Zinc	0.016	J	0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00074		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:20	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	530	~~B~~	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:08	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(10-13)-110615

Lab Sample ID: 500-103708-4

Date Collected: 11/06/15 10:25
Date Received: 11/06/15 17:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.5**	UB	5.0	1.7	ug/L			11/19/15 11:19	1
Benzene	**20**		0.50	0.15	ug/L			11/19/15 11:19	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 11:19	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 11:19	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 11:19	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 11:19	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 11:19	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 11:19	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 11:19	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 11:19	1
cis-1,2-Dichloroethene	**1.1**		1.0	0.41	ug/L			11/19/15 11:19	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 11:19	1
Cyclohexane	**4.4**		1.0	0.49	ug/L			11/19/15 11:19	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 11:19	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 11:19	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 11:19	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 11:19	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 11:19	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 11:19	1
1,1-Dichloroethane	**1.4**		1.0	0.41	ug/L			11/19/15 11:19	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 11:19	1
Ethylbenzene	**42**		0.50	0.18	ug/L			11/19/15 11:19	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 11:19	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 11:19	1
Methylcyclohexane	**3.0**		1.0	0.32	ug/L			11/19/15 11:19	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 11:19	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 11:19	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 11:19	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 11:19	1
Tetrachloroethene	**0.70**	**J**	1.0	0.37	ug/L			11/19/15 11:19	1
Toluene	**12**		0.50	0.15	ug/L			11/19/15 11:19	1
trans-1,2-Dichloroethene	**0.69**	**J**	1.0	0.35	ug/L			11/19/15 11:19	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 11:19	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 11:19	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 11:19	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 11:19	1
Trichloroethene	**0.31**	**J**	0.50	0.16	ug/L			11/19/15 11:19	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 11:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 11:19	1
Vinyl chloride	**0.80**		0.50	0.20	ug/L			11/19/15 11:19	1
Xylenes, Total	**220**		1.0	0.22	ug/L			11/19/15 11:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(10-13)-110615

Date Collected: 11/06/15 10:25
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*		*11/19/15 11:19*	*1*
Dibromofluoromethane	*103*		*75 - 120*		*11/19/15 11:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 11:19*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*11/19/15 11:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**5.2**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:54	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:54	1
Arsenic	**0.025**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:54	1
Barium	**0.19**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:54	1
Beryllium	**0.0010**	J	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:54	1
Cadmium	**0.0030**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:54	1
Calcium	**36**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:54	1
Chromium	**0.11**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:54	1
Cobalt	**0.022**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:54	1
Copper	**0.13**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:54	1
Iron	**26**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:54	1
Lead	**0.42**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:54	1
Magnesium	**49**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:54	1
Manganese	**0.72**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:54	1
Nickel	**0.088**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:54	1
Potassium	**320**	J	0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:54	1
Selenium	**0.010**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:54	1
Sodium	**1900**	J	10	4.3	mg/L		11/10/15 16:24	11/14/15 03:59	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:40	1
Vanadium	**0.032**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:54	1
Zinc	**0.40**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.10**	J	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:42	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:42	1
Arsenic	**0.0086**	J	0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:42	1
Barium	**0.14**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:42	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:42	1
Cadmium	**0.0022**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:42	1
Calcium	**19**	~~B~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:42	1
Chromium	**0.093**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:42	1
Cobalt	**0.024**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:42	1
Copper	**0.0068**	J	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:42	1
Iron	**3.2**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:42	1
Lead	**0.0057**		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:42	1
Magnesium	**51**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:42	1
Manganese	**0.068**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:42	1
Nickel	**0.072**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:42	1
Potassium	**370**	J	0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:42	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:42	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(10-13)-110615

Lab Sample ID: 500-103708-4

Date Collected: 11/06/15 10:25
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	2300	J	10	4.3	mg/L		11/11/15 10:00	11/14/15 21:19	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:42	1
Vanadium	0.018		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:42	1
Zinc	0.019	J	0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00024		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	500	~~B~~	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:11	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615

Lab Sample ID: 500-103708-5

Date Collected: 11/06/15 11:20
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**17**	UB	5.0	1.7	ug/L			11/19/15 12:51	1
Benzene	**17**		0.50	0.15	ug/L			11/19/15 12:51	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 12:51	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 12:51	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 12:51	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 12:51	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 12:51	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 12:51	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 12:51	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 12:51	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 12:51	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 12:51	1
Cyclohexane	**3.5**		1.0	0.49	ug/L			11/19/15 12:51	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 12:51	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 12:51	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 12:51	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 12:51	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 12:51	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 12:51	1
1,1-Dichloroethane	**1.5**		1.0	0.41	ug/L			11/19/15 12:51	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 12:51	1
Ethylbenzene	**14**		0.50	0.18	ug/L			11/19/15 12:51	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 12:51	1
Isopropylbenzene	**2.2**		1.0	0.39	ug/L			11/19/15 12:51	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 12:51	1
Methylcyclohexane	**3.1**		1.0	0.32	ug/L			11/19/15 12:51	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 12:51	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 12:51	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 12:51	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 12:51	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 12:51	1
Toluene	**10**		0.50	0.15	ug/L			11/19/15 12:51	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 12:51	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 12:51	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 12:51	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 12:51	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 12:51	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 12:51	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 12:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 12:51	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 12:51	1
Xylenes, Total	**87**		1.0	0.22	ug/L			11/19/15 12:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615

Lab Sample ID: 500-103708-5

Date Collected: 11/06/15 11:20
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*11/19/15 12:51*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*11/19/15 12:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*11/19/15 12:51*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*11/19/15 12:51*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.4**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:03	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:03	1
Arsenic	**0.042**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:03	1
Barium	**0.17**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:03	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:03	1
Cadmium	**0.0042**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:03	1
Calcium	**39**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:03	1
Chromium	**0.13**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:03	1
Cobalt	**0.025**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:03	1
Copper	**0.17**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:03	1
Iron	**38**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:03	1
Lead	**0.35**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 04:03	1
Magnesium	**47**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:03	1
Manganese	**0.73**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:03	1
Nickel	**0.12**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:03	1
Potassium	**330**	J	0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:03	1
Selenium	**0.014**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:45	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:03	1
Sodium	**1800**	J	10	4.3	mg/L		11/10/15 16:24	11/14/15 04:09	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:45	1
Vanadium	**0.046**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:03	1
Zinc	**0.83**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:03	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.16**	J	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:47	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:47	1
Arsenic	**0.020**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:47	1
Barium	**0.12**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:47	1
Cadmium	**0.0021**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:47	1
Calcium	**17**	~~B~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:47	1
Chromium	**0.091**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:47	1
Cobalt	**0.026**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:47	1
Copper	**0.0077**	J	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:47	1
Iron	**4.2**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:47	1
Lead	**0.0074**		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:47	1
Magnesium	**50**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:47	1
Manganese	**0.048**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:47	1
Nickel	**0.088**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:47	1
Potassium	**390**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:47	1
Selenium	<0.010	J	0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615

Lab Sample ID: 500-103708-5

Date Collected: 11/06/15 11:20
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	2600	J	10	4.3	mg/L		11/11/15 10:00	11/14/15 21:25	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:47	1
Vanadium	0.036		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:47	1
Zinc	0.030		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00035		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:35	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	520	~~B~~	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:14	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(20-22)-110615

Lab Sample ID: 500-103708-6

Date Collected: 11/06/15 12:30
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**14**	UB	5.0	1.7	ug/L			11/19/15 13:16	1
Benzene	**21**		0.50	0.15	ug/L			11/19/15 13:16	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 13:16	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 13:16	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 13:16	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 13:16	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 13:16	1
Chlorobenzene	**0.92**	**J**	1.0	0.39	ug/L			11/19/15 13:16	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 13:16	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 13:16	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 13:16	1
cis-1,2-Dichloroethene	**1.3**		1.0	0.41	ug/L			11/19/15 13:16	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 13:16	1
Cyclohexane	**1.8**		1.0	0.49	ug/L			11/19/15 13:16	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 13:16	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 13:16	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 13:16	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 13:16	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 13:16	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 13:16	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 13:16	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 13:16	1
Ethylbenzene	**34**		0.50	0.18	ug/L			11/19/15 13:16	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 13:16	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 13:16	1
Methylcyclohexane	**1.6**		1.0	0.32	ug/L			11/19/15 13:16	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 13:16	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 13:16	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 13:16	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 13:16	1
Tetrachloroethene	**2.1**		1.0	0.37	ug/L			11/19/15 13:16	1
Toluene	**5.7**		0.50	0.15	ug/L			11/19/15 13:16	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 13:16	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 13:16	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 13:16	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 13:16	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 13:16	1
Trichloroethene	**0.61**		0.50	0.16	ug/L			11/19/15 13:16	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 13:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 13:16	1
Vinyl chloride	**0.56**		0.50	0.20	ug/L			11/19/15 13:16	1
Xylenes, Total	**160**		1.0	0.22	ug/L			11/19/15 13:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(20-22)-110615

Lab Sample ID: 500-103708-6

Date Collected: 11/06/15 12:30
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/19/15 13:16*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 13:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 13:16*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*11/19/15 13:16*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8.2**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:13	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:13	1
Arsenic	**0.031**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:13	1
Barium	**0.27**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:13	1
Beryllium	**0.0013**	J	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:13	1
Cadmium	**0.0033**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:13	1
Calcium	**49**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:13	1
Chromium	**0.15**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:13	1
Cobalt	**0.030**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:13	1
Copper	**0.12**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:13	1
Iron	**30**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:13	1
Lead	**0.37**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 04:13	1
Magnesium	**59**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:13	1
Manganese	**0.67**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:13	1
Nickel	**0.13**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:13	1
Potassium	**370**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:13	1
Selenium	**0.0064**	J	0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:13	1
Sodium	**2100**	J	10	4.3	mg/L		11/10/15 16:24	11/14/15 04:18	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:50	1
Vanadium	**0.043**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:13	1
Zinc	**0.48**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	J	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:52	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:52	1
Arsenic	**0.012**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:52	1
Barium	**0.21**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:52	1
Cadmium	**0.0019**	J	0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:52	1
Calcium	**19**	~~B~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:52	1
Chromium	**0.11**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:52	1
Cobalt	**0.029**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:52	1
Copper	**0.0072**	J	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:52	1
Iron	**2.8**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:52	1
Lead	**0.0043**	J	0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:52	1
Magnesium	**56**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:52	1
Manganese	**0.023**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:52	1
Nickel	**0.099**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:52	1
Potassium	**400**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:52	1
Selenium	**0.0091**	J	0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(20-22)-110615

Lab Sample ID: 500-103708-6

Date Collected: 11/06/15 12:30
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	2500	J	10	4.3	mg/L		11/11/15 10:00	11/14/15 21:30	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:52	1
Vanadium	0.025		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:52	1
Zinc	0.048		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00029		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	520	~~B~~	50	11	mg/L		11/17/15 19:10	11/17/15 22:16	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615

Lab Sample ID: 500-103708-7

Date Collected: 11/06/15 13:30
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.6**	UB	5.0	1.7	ug/L			11/19/15 10:27	1
Benzene	**0.25**	**J**	0.50	0.15	ug/L			11/19/15 10:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 10:27	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 10:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 10:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 10:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 10:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 10:27	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 10:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 10:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 10:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 10:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/19/15 10:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 10:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 10:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 10:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 10:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 10:27	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 10:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 10:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 10:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/19/15 10:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 10:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 10:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/19/15 10:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 10:27	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 10:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 10:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 10:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 10:27	1
Toluene	**0.29**	**J**	0.50	0.15	ug/L			11/19/15 10:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 10:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 10:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 10:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 10:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 10:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 10:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 10:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 10:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 10:27	1
Xylenes, Total	**0.56**	**J**	1.0	0.22	ug/L			11/19/15 10:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615

Lab Sample ID: 500-103708-7

Date Collected: 11/06/15 13:30
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/19/15 10:27*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 10:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 10:27*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/19/15 10:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**13**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:31	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:31	1
Arsenic	**0.0082**	**J**	0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:31	1
Barium	**0.66**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:31	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:31	1
Calcium	**170**	**V**	0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:31	1
Chromium	**0.032**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:31	1
Cobalt	**0.012**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:31	1
Copper	**0.057**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:31	1
Iron	**31**	**^ V**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:31	1
Lead	**0.088**		0.025	0.012	mg/L		11/10/15 16:24	11/17/15 18:29	5
Magnesium	**110**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:31	1
Manganese	**0.76**	**V**	0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:31	1
Nickel	**0.040**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:31	1
Potassium	**43**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:31	1
Selenium	<0.010		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:56	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:31	1
Sodium	**210**		1.0	0.43	mg/L		11/10/15 16:24	11/14/15 04:31	1
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:56	1
Vanadium	**0.029**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:31	1
Zinc	**0.17**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:57	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:57	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:57	1
Barium	**0.54**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:57	1
Cadmium	**0.0021**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:57	1
Calcium	**88**	~~**B**~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:57	1
Chromium	<0.010		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:57	1
Copper	**0.0042**	**J**	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:57	1
Iron	**4.5**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:57	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:57	1
Magnesium	**75**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:57	1
Manganese	**0.22**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:57	1
Nickel	**0.0033**	**J**	0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:57	1
Potassium	**42**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:57	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615

Lab Sample ID: 500-103708-7

Date Collected: 11/06/15 13:30
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**200**		1.0	0.43	mg/L		11/11/15 10:00	11/14/15 03:57	1
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:57	1
Zinc	<0.020		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000070**	**J**	0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:43	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**42**	~~**B**~~	4.0	0.86	mg/L		11/17/15 19:10	11/17/15 22:19	4

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(15-18)-110615

Lab Sample ID: 500-103708-8

Date Collected: 11/06/15 14:15
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.2**	UB	5.0	1.7	ug/L			11/19/15 10:52	1
Benzene	**6.9**		0.50	0.15	ug/L			11/19/15 10:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 10:52	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 10:52	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 10:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 10:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 10:52	1
Chlorobenzene	**3.9**		1.0	0.39	ug/L			11/19/15 10:52	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 10:52	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 10:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 10:52	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 10:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 10:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/19/15 10:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 10:52	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 10:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 10:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 10:52	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 10:52	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 10:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 10:52	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 10:52	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/19/15 10:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 10:52	1
Isopropylbenzene	**3.8**		1.0	0.39	ug/L			11/19/15 10:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 10:52	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/19/15 10:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 10:52	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 10:52	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 10:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 10:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 10:52	1
Toluene	**0.31**	J	0.50	0.15	ug/L			11/19/15 10:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 10:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 10:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 10:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 10:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 10:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 10:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 10:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 10:52	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 10:52	1
Xylenes, Total	**0.93**	J	1.0	0.22	ug/L			11/19/15 10:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(15-18)-110615

Lab Sample ID: 500-103708-8

Date Collected: 11/06/15 14:15
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/19/15 10:52*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*11/19/15 10:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 10:52*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/19/15 10:52*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**54**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:55	1
Antimony	**0.054**		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:55	1
Arsenic	**0.15**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:55	1
Barium	**2.2**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:55	1
Beryllium	**0.0042**		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:55	1
Cadmium	**0.044**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:55	1
Calcium	**190**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:55	1
Chromium	**1.1**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:55	1
Cobalt	**0.085**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:55	1
Copper	**2.4**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:55	1
Iron	**500**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:55	1
Lead	**3.1**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 04:55	1
Magnesium	**110**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:55	1
Manganese	**3.2**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:55	1
Nickel	**0.97**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:55	1
Potassium	**88**	J	0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:55	1
Selenium	**0.019**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 18:49	1
Silver	**0.063**		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:55	1
Sodium	**280**	J	1.0	0.43	mg/L		11/10/15 16:24	11/14/15 04:55	1
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 18:49	1
Vanadium	**0.16**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:55	1
Zinc	**4.5**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 04:03	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 04:03	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 04:03	1
Barium	**0.32**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 04:03	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 04:03	1
Cadmium	**0.0020**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 04:03	1
Calcium	**77**	~~B~~	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 04:03	1
Chromium	**0.0052**	J	0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 04:03	1
Cobalt	**0.0037**	J	0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 04:03	1
Copper	**0.0042**	J	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 04:03	1
Iron	**16**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 04:03	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 04:03	1
Magnesium	**92**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 04:03	1
Manganese	**0.20**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 04:03	1
Nickel	**0.010**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 04:03	1
Potassium	**100**	J	0.50	0.16	mg/L		11/11/15 10:00	11/14/15 04:03	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 04:03	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 04:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(15-18)-110615

Lab Sample ID: 500-103708-8

Date Collected: 11/06/15 14:15
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	320	J	1.0	0.43	mg/L		11/11/15 10:00	11/14/15 04:03	1
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 04:03	1
Vanadium	0.0030	J	0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 04:03	1
Zinc	<0.020		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 04:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000065	J	0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 15:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	140	~~B~~	10	2.2	mg/L		11/17/15 19:10	11/17/15 23:39	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: TB-1(110615)

Date Collected: 11/06/15 00:00
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-9

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	6.3		5.0	1.7	ug/L			11/19/15 10:02	1
Benzene	<0.50		0.50	0.15	ug/L			11/19/15 10:02	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 10:02	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 10:02	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 10:02	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 10:02	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 10:02	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 10:02	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 10:02	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 10:02	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 10:02	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 10:02	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/19/15 10:02	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 10:02	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 10:02	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 10:02	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 10:02	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 10:02	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 10:02	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 10:02	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 10:02	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/19/15 10:02	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 10:02	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 10:02	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/19/15 10:02	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 10:02	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 10:02	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 10:02	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 10:02	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 10:02	1
Toluene	<0.50		0.50	0.15	ug/L			11/19/15 10:02	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 10:02	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 10:02	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 10:02	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 10:02	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 10:02	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 10:02	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 10:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 10:02	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 10:02	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/19/15 10:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: TB-1(110615)

Date Collected: 11/06/15 00:00
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-9

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		75 - 120		11/19/15 10:02	1
Dibromofluoromethane	102		75 - 120		11/19/15 10:02	1
1,2-Dichloroethane-d4 (Surr)	98		75 - 125		11/19/15 10:02	1
Toluene-d8 (Surr)	94		75 - 120		11/19/15 10:02	1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-104630-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
12/14/2015 1:22:16 PM

Bonnie Stadelmann, Senior Project Manager
(708)534-5200
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-104630-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-104630-1

Comments
No additional comments.

Receipt
The samples were received on 12/1/2015 3:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.6º C and 4.3º C.

GC/MS VOA
Method(s) 8260B: The method blank for batch 315539 was non-detect for all target analytes. Samples associated with this method blank detected Acetone just above the reporting limit. Acetone is a known lab contaminant; therefore all low level detects for this compound should be considered lab contamination. The results have been flagged with a "CN" to denote the probable contamination: VAP-HPT18(12-14)-113015 (500-104630-5), VAP-HPT18(25-27)-113015 (500-104630-8), VAP-HPT22(14-16)-120115 (500-104630-12), VAP-HPT22(24-27)-120115 (500-104630-14) and VAP-HPT23(8-11)-120115 (500-104630-15)

Method(s) 8260B: The following samples were diluted due to the abundance of non-target analytes: VAP-HPT18(12-14)-113015 (500-104630-5) and VAP-HPT18(19-22)-113015 (500-104630-7). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were diluted to bring the concentration of target analytes within the calibration range: VAP-HPT18(16-18)-113015 (500-104630-6), VAP-HPT22(14-16)-120115 (500-104630-12) and VAP-HPT22(18-21)-120115 (500-104630-13). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The MSD (matrix spike duplicate) in batch 315539 was analyzed 5 minutes outside the method specified 12 hour tune time: VAP-HPT19(6-8)-113015 (500-104630-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The continuing calibration verifications (CCV) associated with batch 500-314956 recovered above the upper control limit for Zinc. The samples associated with these continuing calibration verifications were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: VAP-HPT18(12-14)-113015 (500-104630-5), VAP-HPT18(16-18)-113015 (500-104630-6), VAP-HPT18(25-27)-113015 (500-104630-8), VAP-HPT21(8-10)-120115 (500-104630-9), VAP-HPT21(12-14)-120115 (500-104630-10) and VAP-HPT21(16-18)-120115 (500-104630-11).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: TB-1(1201115) — Lab Sample ID: 500-104630-1

No Detections.

Client Sample ID: VAP-HPT19(6-8)-113015 — Lab Sample ID: 500-104630-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.57		0.50	0.20	ug/L	1		8260B	Total/NA
Aluminum	0.55		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0068	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.34		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0024		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	98		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0028	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0014	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.028		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	18		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.063		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	52		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.50		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.021		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	38		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	110		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0061		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.10		0.020	0.0090	mg/L	1		6010C	Total/NA
Arsenic	0.0036	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.35		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0018	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	100		0.20	0.059	mg/L	1		6010C	Dissolved
Cobalt	0.0012	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0054	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	17		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	56		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.49		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	40		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	120		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.030		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00036		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	19	B	1.1	0.24	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT19(9-11)-113015 — Lab Sample ID: 500-104630-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.0		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	3.5		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.7		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	0.78	J	1.0	0.39	ug/L	1		8260B	Total/NA
Aluminum	0.44		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.79		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0020		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0071	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.012		0.010	0.0022	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(9-11)-113015 (Continued) — Lab Sample ID: 500-104630-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	10		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.072		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	68		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.55		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0061	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	43		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	170		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0028	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.29		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.66		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0016	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0035	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	8.6		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	67		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.53		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	42		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	170		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	34	B	2.1	0.46	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT19(12-14)-113015 — Lab Sample ID: 500-104630-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.8		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	4.6		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.7		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	1.9		1.0	0.39	ug/L	1		8260B	Total/NA
Aluminum	0.76		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.76		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0026		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.011		0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.029		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	20		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.096		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	75		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.38		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.015		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	45		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	170		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0020	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.46		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.73		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0024	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Copper	0.0032	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	16		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	79		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.37		0.010	0.0034	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(12-14)-113015 (Continued) — Lab Sample ID: 500-104630-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	47		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	180		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00013	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	56	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT18(12-14)-113015 — Lab Sample ID: 500-104630-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	13	cn	10	3.5	ug/L	2		8260B	Total/NA
Benzene	41		1.0	0.29	ug/L	2		8260B	Total/NA
Chloroethane	16		2.0	1.0	ug/L	2		8260B	Total/NA
Cyclohexane	6.6		2.0	0.97	ug/L	2		8260B	Total/NA
1,2-Dichlorobenzene	3.1		2.0	0.67	ug/L	2		8260B	Total/NA
Isopropylbenzene	23		2.0	0.77	ug/L	2		8260B	Total/NA
Methylcyclohexane	37		2.0	0.63	ug/L	2		8260B	Total/NA
Xylenes, Total	2.3		2.0	0.44	ug/L	2		8260B	Total/NA
Aluminum	0.68		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0075	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0057	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.4		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0022		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0090	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0037	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.024		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	35		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.084		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.19		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.023		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	210		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0049	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	270		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0035	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.12		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	1.5		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0017	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0057	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0027	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0044	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	35		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.20		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.018		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	230		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0048	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	300		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0026	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.018	J ^	0.020	0.0090	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(12-14)-113015 (Continued) — Lab Sample ID: 500-104630-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.00020		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	130	B	10	2.2	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT18(16-18)-113015 — Lab Sample ID: 500-104630-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	70		1.0	0.29	ug/L	2		8260B	Total/NA
Chlorobenzene	1.5	J	2.0	0.77	ug/L	2		8260B	Total/NA
Cyclohexane	21		2.0	0.97	ug/L	2		8260B	Total/NA
Ethylbenzene	66		1.0	0.37	ug/L	2		8260B	Total/NA
Isopropylbenzene	11		2.0	0.77	ug/L	2		8260B	Total/NA
Methylcyclohexane	14		2.0	0.63	ug/L	2		8260B	Total/NA
Toluene	9.8		1.0	0.30	ug/L	2		8260B	Total/NA
Xylenes, Total - DL	740		20	4.4	ug/L	20		8260B	Total/NA
Aluminum	0.46		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	1.1		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0017	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.013		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0029	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.015		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	34		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.042		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	100		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.20		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.026		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	140		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	300		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0044	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.22		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	1.0		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0071	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0021	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0040	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	100		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.11		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.020		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	140		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	310		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0023	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00016	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	94	B	4.4	0.95	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT18(19-22)-113015 — Lab Sample ID: 500-104630-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	120		1.0	0.29	ug/L	2		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: VAP-HPT18(19-22)-113015 (Continued) — Lab Sample ID: 500-104630-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	9.0		2.0	0.77	ug/L	2		8260B	Total/NA
Chloroethane	6.4		2.0	1.0	ug/L	2		8260B	Total/NA
Cyclohexane	77		2.0	0.97	ug/L	2		8260B	Total/NA
Isopropylbenzene	43		2.0	0.77	ug/L	2		8260B	Total/NA
Methylcyclohexane	45		2.0	0.63	ug/L	2		8260B	Total/NA
Xylenes, Total	1.9	J	2.0	0.44	ug/L	2		8260B	Total/NA
Aluminum	0.22		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.74		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0018	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0086	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0011	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0062	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	29		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0084		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.23		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.018		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	99		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0061	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	290		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0048	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.072		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.70		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0018	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0074	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Copper	0.0038	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	27		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	110		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.017		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	100		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	290		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0039	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.028		0.020	0.0090	mg/L	1		6010C	Dissolved
Ammonia	58	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT18(25-27)-113015 — Lab Sample ID: 500-104630-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.2	cn	5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	2.6		0.50	0.15	ug/L	1		8260B	Total/NA
Cyclohexane	3.1		1.0	0.49	ug/L	1		8260B	Total/NA
Ethylbenzene	8.7		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	2.5		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	8.2		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	7.2		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	77		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	1.2		0.20	0.062	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(25-27)-113015 (Continued) — Lab Sample ID: 500-104630-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0035	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.32		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0021		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	200		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.067		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0084		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.011		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	27		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.031		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	230		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.41		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.093		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	130		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0063	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	700		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.042		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.19		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.21		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0018	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	170		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.050		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0054		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0045	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	13		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	220		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.076		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	130		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	690		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.047		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.014	J ^	0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00021		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	110	B	10	2.2	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT21(8-10)-120115 — Lab Sample ID: 500-104630-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.5		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	29		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.5		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.1		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	5.6		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	47		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	2.2		1.0	0.32	ug/L	1		8260B	Total/NA
Xylenes, Total	0.75	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	0.29		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0031	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.51		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0016	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	92		0.20	0.059	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(8-10)-120115 (Continued) — Lab Sample ID: 500-104630-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.010		0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0057	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	18		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0079		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	66		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.34		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0058	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	65		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	150		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0023	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.024		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.51		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	93		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0026	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Copper	0.0034	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	16		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	68		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.29		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0039	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	67		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0047	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	160		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	60	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT21(12-14)-120115 — Lab Sample ID: 500-104630-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	15		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	30		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.4		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.2		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	5.1		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	7.3		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	400		5.0	1.9	ug/L	5		8260B	Total/NA
Methylcyclohexane	1.4		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	3.2		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	62		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	0.65		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.63		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0021		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	90		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.011		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0022	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.014		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	25		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.063		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	68		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.013		0.010	0.0031	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(12-14)-120115 (Continued) — Lab Sample ID: 500-104630-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	73		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	190		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0025	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.2		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.64		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	93		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0038	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0014	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0031	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	23		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	71		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0060	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	76		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00034		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	73	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT21(16-18)-120115 — Lab Sample ID: 500-104630-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6.7		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	5.5		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.3		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.83	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.0		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	68		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.1		1.0	0.32	ug/L	1		8260B	Total/NA
Xylenes, Total	2.2		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	0.42		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.84		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0016	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	91		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0083	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0011	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.010		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	17		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.059		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	70		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.19		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.010		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	74		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	200		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0023	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.054		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.89		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0017	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	92		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0033	J	0.010	0.0024	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(16-18)-120115 (Continued) — Lab Sample ID: 500-104630-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0014	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0037	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	16		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	75		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.16		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0070	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	80		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	220		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	75	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT22(14-16)-120115 — Lab Sample ID: 500-104630-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	52	cn	25	8.7	ug/L	5		8260B	Total/NA
Benzene	460		2.5	0.73	ug/L	5		8260B	Total/NA
Carbon disulfide	14		10	2.2	ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	81		5.0	2.0	ug/L	5		8260B	Total/NA
1,2-Dichlorobenzene	10		5.0	1.7	ug/L	5		8260B	Total/NA
1,1-Dichloroethane	100		5.0	2.1	ug/L	5		8260B	Total/NA
Ethylbenzene	560		2.5	0.92	ug/L	5		8260B	Total/NA
Isopropylbenzene	14		5.0	1.9	ug/L	5		8260B	Total/NA
methyl isobutyl ketone	70		25	11	ug/L	5		8260B	Total/NA
Tetrachloroethene	2.8	J	5.0	1.9	ug/L	5		8260B	Total/NA
trans-1,2-Dichloroethene	6.0		5.0	1.7	ug/L	5		8260B	Total/NA
Trichloroethene	7.3		2.5	0.82	ug/L	5		8260B	Total/NA
Toluene - DL	2700		25	7.6	ug/L	50		8260B	Total/NA
Xylenes, Total - DL	3100		50	11	ug/L	50		8260B	Total/NA
Antimony	0.016	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.017		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.054		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	200		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0073	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0090	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	2.2	F1	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.014		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	0.17		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.047		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.023		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	32		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	190		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.012		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.038		0.020	0.0090	mg/L	1		6010C	Total/NA
Antimony	0.011	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.019		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.051		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	200		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0027	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	1.8		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	0.079	J	0.10	0.034	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(14-16)-120115 (Continued) — Lab Sample ID: 500-104630-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.016		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	33		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.013		0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	190		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0099		0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00013	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	19	B	1.0	0.22	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT22(18-21)-120115 — Lab Sample ID: 500-104630-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	370		5.0	1.5	ug/L	10		8260B	Total/NA
Chlorobenzene	6.2	J	10	3.9	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	15		10	4.1	ug/L	10		8260B	Total/NA
1,1-Dichloroethane	13		10	4.1	ug/L	10		8260B	Total/NA
Isopropylbenzene	170		10	3.9	ug/L	10		8260B	Total/NA
Ethylbenzene - DL	2800		50	18	ug/L	100		8260B	Total/NA
Toluene - DL	4600		50	15	ug/L	100		8260B	Total/NA
Xylenes, Total - DL	25000		100	22	ug/L	100		8260B	Total/NA
Aluminum	1.3		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0066	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0089	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.37		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	100		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.021		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0024	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.014		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	29		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.047		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	64		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.93		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.016		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	69		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0069	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	230		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.014		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.16		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.27		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	84		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0034	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0019	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0028	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	13		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	62		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.23		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0075	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	71		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0087	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0030	J	0.0050	0.0019	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: VAP-HPT22(18-21)-120115 (Continued) — Lab Sample ID: 500-104630-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.00016	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	78	B	5.0	1.1	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT22(24-27)-120115 — Lab Sample ID: 500-104630-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	14	cn	5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	110		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	1.8		1.0	0.39	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.74	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	0.70	J	1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	18		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	6.5		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	39		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	140		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	0.64		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0078	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.78		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	72		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.016		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0045	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.016		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	25		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.031		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	85		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.49		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.032		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	140		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	330		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0081		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.091		0.020	0.0090	mg/L	1		6010C	Total/NA
Arsenic	0.0085	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.75		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	62		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0053	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0045	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0026	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	9.8		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	88		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.079		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.019		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	140		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	340		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0021	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00012	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	110	B	10	2.2	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT23(8-11)-120115 — Lab Sample ID: 500-104630-15

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT23(8-11)-120115 (Continued) — Lab Sample ID: 500-104630-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.1	cn	5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Carbon disulfide	1.5	J	2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	2.3		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	4.7		1.0	0.51	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	9.3		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.1		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	3.4		1.0	0.33	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.4		1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	76		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	13		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	4.3		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	8.2		0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	0.71		0.50	0.16	ug/L	1		8260B	Total/NA
Xylenes, Total	88		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	6.5		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.20		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	370		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.33		0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0069	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	47		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0043	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	28		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	17		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.027		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	10		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0092	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	44		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.28		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.56		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.028		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	55		0.20	0.059	mg/L	1		6010C	Dissolved
Magnesium	15		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.041		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	9.7		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	43		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0097		0.0050	0.0019	mg/L	1		6010C	Dissolved
Ammonia	2.1	B	0.20	0.043	mg/L	1		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-104630-1	TB-1(1201115)	Water	11/30/15 00:00	12/01/15 15:15
500-104630-2	VAP-HPT19(6-8)-113015	Water	11/30/15 09:40	12/01/15 15:15
500-104630-3	VAP-HPT19(9-11)-113015	Water	11/30/15 10:20	12/01/15 15:15
500-104630-4	VAP-HPT19(12-14)-113015	Water	11/30/15 10:55	12/01/15 15:15
500-104630-5	VAP-HPT18(12-14)-113015	Water	11/30/15 11:45	12/01/15 15:15
500-104630-6	VAP-HPT18(16-18)-113015	Water	11/30/15 12:30	12/01/15 15:15
500-104630-7	VAP-HPT18(19-22)-113015	Water	11/30/15 13:15	12/01/15 15:15
500-104630-8	VAP-HPT18(25-27)-113015	Water	11/30/15 14:10	12/01/15 15:15
500-104630-9	VAP-HPT21(8-10)-120115	Water	12/01/15 09:15	12/01/15 15:15
500-104630-10	VAP-HPT21(12-14)-120115	Water	12/01/15 09:55	12/01/15 15:15
500-104630-11	VAP-HPT21(16-18)-120115	Water	12/01/15 10:40	12/01/15 15:15
500-104630-12	VAP-HPT22(14-16)-120115	Water	12/01/15 11:40	12/01/15 15:15
500-104630-13	VAP-HPT22(18-21)-120115	Water	12/01/15 12:15	12/01/15 15:15
500-104630-14	VAP-HPT22(24-27)-120115	Water	12/01/15 13:00	12/01/15 15:15
500-104630-15	VAP-HPT23(8-11)-120115	Water	12/01/15 14:05	12/01/15 15:15

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: TB-1(1201115)

Date Collected: 11/30/15 00:00
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/08/15 23:18	1
Benzene	<0.50		0.50	0.15	ug/L			12/08/15 23:18	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/08/15 23:18	1
Bromoform	<1.0		1.0	0.48	ug/L			12/08/15 23:18	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/08/15 23:18	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/08/15 23:18	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/08/15 23:18	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/08/15 23:18	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/08/15 23:18	1
Chloroform	<1.0		1.0	0.37	ug/L			12/08/15 23:18	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/08/15 23:18	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/08/15 23:18	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/08/15 23:18	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/08/15 23:18	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/08/15 23:18	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/08/15 23:18	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/08/15 23:18	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/08/15 23:18	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/08/15 23:18	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/08/15 23:18	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/08/15 23:18	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/08/15 23:18	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/08/15 23:18	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/08/15 23:18	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/08/15 23:18	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/08/15 23:18	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/08/15 23:18	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/08/15 23:18	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/08/15 23:18	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/08/15 23:18	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/08/15 23:18	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/08/15 23:18	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/08/15 23:18	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/08/15 23:18	1
Styrene	<1.0		1.0	0.39	ug/L			12/08/15 23:18	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/08/15 23:18	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/08/15 23:18	1
Toluene	<0.50		0.50	0.15	ug/L			12/08/15 23:18	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/08/15 23:18	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/08/15 23:18	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/08/15 23:18	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/08/15 23:18	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/08/15 23:18	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/08/15 23:18	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/08/15 23:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/08/15 23:18	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/08/15 23:18	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/08/15 23:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: TB-1(1201115)

Date Collected: 11/30/15 00:00
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-1

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		75 - 120		12/08/15 23:18	1
Dibromofluoromethane	105		75 - 120		12/08/15 23:18	1
1,2-Dichloroethane-d4 (Surr)	113		75 - 125		12/08/15 23:18	1
Toluene-d8 (Surr)	98		75 - 120		12/08/15 23:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(6-8)-113015

Lab Sample ID: 500-104630-2

Date Collected: 11/30/15 09:40

Matrix: Water

Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/08/15 23:46	1
Benzene	<0.50		0.50	0.15	ug/L			12/08/15 23:46	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/08/15 23:46	1
Bromoform	<1.0		1.0	0.48	ug/L			12/08/15 23:46	1
Bromomethane	<2.0	F2	2.0	0.80	ug/L			12/08/15 23:46	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/08/15 23:46	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/08/15 23:46	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/08/15 23:46	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/08/15 23:46	1
Chloroform	<1.0		1.0	0.37	ug/L			12/08/15 23:46	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/08/15 23:46	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/08/15 23:46	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/08/15 23:46	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/08/15 23:46	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/08/15 23:46	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/08/15 23:46	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/08/15 23:46	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/08/15 23:46	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/08/15 23:46	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/08/15 23:46	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/08/15 23:46	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/08/15 23:46	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/08/15 23:46	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/08/15 23:46	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/08/15 23:46	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/08/15 23:46	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/08/15 23:46	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/08/15 23:46	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/08/15 23:46	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/08/15 23:46	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/08/15 23:46	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/08/15 23:46	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/08/15 23:46	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/08/15 23:46	1
Styrene	<1.0		1.0	0.39	ug/L			12/08/15 23:46	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/08/15 23:46	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/08/15 23:46	1
Toluene	<0.50		0.50	0.15	ug/L			12/08/15 23:46	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/08/15 23:46	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/08/15 23:46	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/08/15 23:46	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/08/15 23:46	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/08/15 23:46	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/08/15 23:46	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/08/15 23:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/08/15 23:46	1
Vinyl chloride	**0.57**		0.50	0.20	ug/L			12/08/15 23:46	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/08/15 23:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(6-8)-113015

Date Collected: 11/30/15 09:40
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*75 - 120*		*12/08/15 23:46*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*12/08/15 23:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*75 - 125*		*12/08/15 23:46*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*12/08/15 23:46*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.55**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 19:11	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 19:11	1
Arsenic	**0.0068**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:11	1
Barium	**0.34**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 19:11	1
Cadmium	**0.0024**		0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 19:11	1
Calcium	**98**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 19:11	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 19:11	1
Cobalt	**0.0014**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 19:11	1
Copper	**0.028**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:11	1
Iron	**18**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 19:11	1
Lead	**0.063**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 19:11	1
Magnesium	**52**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 19:11	1
Manganese	**0.50**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 19:11	1
Nickel	**0.021**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:11	1
Potassium	**38**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 19:11	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 19:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 19:11	1
Sodium	**110**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 19:11	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 19:11	1
Vanadium	**0.0061**		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 19:11	1
Zinc	**0.10**		0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 19:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 19:31	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 19:31	1
Arsenic	**0.0036**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:31	1
Barium	**0.35**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 19:31	1
Cadmium	**0.0018**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 19:31	1
Calcium	**100**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 19:31	1
Chromium	<0.010		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 19:31	1
Cobalt	**0.0012**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 19:31	1
Copper	**0.0054**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:31	1
Iron	**17**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 19:31	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 19:31	1
Magnesium	**56**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 19:31	1
Manganese	**0.49**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 19:31	1
Nickel	**0.016**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:31	1
Potassium	**40**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 19:31	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 19:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 19:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(6-8)-113015

Lab Sample ID: 500-104630-2

Date Collected: 11/30/15 09:40

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**120**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 19:31	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 19:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 19:31	1
Zinc	**0.030**		0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 19:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00036**		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**19**	**B**	1.1	0.24	mg/L		12/10/15 21:15	12/11/15 02:03	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(9-11)-113015

Lab Sample ID: 500-104630-3

Date Collected: 11/30/15 10:20
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 00:14	1
Benzene	**1.0**		0.50	0.15	ug/L			12/09/15 00:14	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 00:14	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 00:14	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 00:14	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 00:14	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 00:14	1
Chlorobenzene	**3.5**		1.0	0.39	ug/L			12/09/15 00:14	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 00:14	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 00:14	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 00:14	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 00:14	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 00:14	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 00:14	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 00:14	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 00:14	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 00:14	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 00:14	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 00:14	1
1,4-Dichlorobenzene	**1.7**		1.0	0.36	ug/L			12/09/15 00:14	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 00:14	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 00:14	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 00:14	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 00:14	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 00:14	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 00:14	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 00:14	1
Isopropylbenzene	**0.78**	**J**	1.0	0.39	ug/L			12/09/15 00:14	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 00:14	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 00:14	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 00:14	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 00:14	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 00:14	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 00:14	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 00:14	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 00:14	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 00:14	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 00:14	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 00:14	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 00:14	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 00:14	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 00:14	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 00:14	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 00:14	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 00:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 00:14	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 00:14	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/09/15 00:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(9-11)-113015

Date Collected: 11/30/15 10:20
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*75 - 120*		*12/09/15 00:14*	*1*
Dibromofluoromethane	*103*		*75 - 120*		*12/09/15 00:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*75 - 125*		*12/09/15 00:14*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*12/09/15 00:14*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.44**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 19:35	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 19:35	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:35	1
Barium	**0.79**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 19:35	1
Cadmium	**0.0020**		0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 19:35	1
Calcium	**110**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 19:35	1
Chromium	**0.0071**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 19:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 19:35	1
Copper	**0.012**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:35	1
Iron	**10**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 19:35	1
Lead	**0.072**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 19:35	1
Magnesium	**68**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 19:35	1
Manganese	**0.55**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 19:35	1
Nickel	**0.0061**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:35	1
Potassium	**43**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 19:35	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 19:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 19:35	1
Sodium	**170**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 19:35	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 19:35	1
Vanadium	**0.0028**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 19:35	1
Zinc	**0.29**		0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 19:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 19:39	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 19:39	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:39	1
Barium	**0.66**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:39	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 19:39	1
Cadmium	**0.0016**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 19:39	1
Calcium	**110**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 19:39	1
Chromium	<0.010		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 19:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 19:39	1
Copper	**0.0035**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:39	1
Iron	**8.6**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 19:39	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 19:39	1
Magnesium	**67**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 19:39	1
Manganese	**0.53**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 19:39	1
Nickel	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:39	1
Potassium	**42**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 19:39	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 19:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 19:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(9-11)-113015

Lab Sample ID: 500-104630-3

Date Collected: 11/30/15 10:20

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**170**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 19:39	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 19:39	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 19:39	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 19:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:29	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**34**	**B**	2.1	0.46	mg/L		12/10/15 21:15	12/11/15 02:12	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(12-14)-113015

Lab Sample ID: 500-104630-4

Date Collected: 11/30/15 10:55
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 00:42	1
Benzene	**2.8**		0.50	0.15	ug/L			12/09/15 00:42	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 00:42	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 00:42	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 00:42	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 00:42	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 00:42	1
Chlorobenzene	**4.6**		1.0	0.39	ug/L			12/09/15 00:42	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 00:42	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 00:42	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 00:42	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 00:42	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 00:42	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 00:42	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 00:42	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 00:42	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 00:42	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 00:42	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 00:42	1
1,4-Dichlorobenzene	**1.7**		1.0	0.36	ug/L			12/09/15 00:42	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 00:42	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 00:42	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 00:42	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 00:42	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 00:42	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 00:42	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 00:42	1
Isopropylbenzene	**1.9**		1.0	0.39	ug/L			12/09/15 00:42	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 00:42	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 00:42	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 00:42	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 00:42	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 00:42	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 00:42	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 00:42	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 00:42	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 00:42	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 00:42	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 00:42	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 00:42	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 00:42	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 00:42	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 00:42	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 00:42	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 00:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 00:42	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 00:42	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/09/15 00:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(12-14)-113015

Date Collected: 11/30/15 10:55
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*75 - 120*		*12/09/15 00:42*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*12/09/15 00:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 125*		*12/09/15 00:42*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*12/09/15 00:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.76**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 19:43	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 19:43	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:43	1
Barium	**0.76**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:43	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 19:43	1
Cadmium	**0.0026**		0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 19:43	1
Calcium	**110**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 19:43	1
Chromium	**0.011**		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 19:43	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 19:43	1
Copper	**0.029**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:43	1
Iron	**20**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 19:43	1
Lead	**0.096**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 19:43	1
Magnesium	**75**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 19:43	1
Manganese	**0.38**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 19:43	1
Nickel	**0.015**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:43	1
Potassium	**45**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 19:43	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 19:43	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 19:43	1
Sodium	**170**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 19:43	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 19:43	1
Vanadium	**0.0020**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 19:43	1
Zinc	**0.46**		0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 19:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 19:48	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 19:48	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:48	1
Barium	**0.73**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 19:48	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 19:48	1
Calcium	**120**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 19:48	1
Chromium	**0.0024**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 19:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 19:48	1
Copper	**0.0032**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:48	1
Iron	**16**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 19:48	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 19:48	1
Magnesium	**79**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 19:48	1
Manganese	**0.37**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 19:48	1
Nickel	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:48	1
Potassium	**47**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 19:48	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 19:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 19:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(12-14)-113015

Lab Sample ID: 500-104630-4

Date Collected: 11/30/15 10:55
Matrix: Water
Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**180**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 19:48	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 19:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 19:48	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 19:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J**	0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**56**	**B**	4.0	0.86	mg/L		12/10/15 21:15	12/11/15 19:21	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(12-14)-113015

Lab Sample ID: 500-104630-5

Date Collected: 11/30/15 11:45

Matrix: Water

Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**13**	**cn**	10	3.5	ug/L			12/09/15 07:12	2
Benzene	**41**		1.0	0.29	ug/L			12/09/15 07:12	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			12/09/15 07:12	2
Bromoform	<2.0		2.0	0.97	ug/L			12/09/15 07:12	2
Bromomethane	<4.0		4.0	1.6	ug/L			12/09/15 07:12	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			12/09/15 07:12	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			12/09/15 07:12	2
Chlorobenzene	<2.0		2.0	0.77	ug/L			12/09/15 07:12	2
Chloroethane	**16**		2.0	1.0	ug/L			12/09/15 07:12	2
Chloroform	<2.0		2.0	0.74	ug/L			12/09/15 07:12	2
Chloromethane	<2.0		2.0	0.64	ug/L			12/09/15 07:12	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			12/09/15 07:12	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			12/09/15 07:12	2
Cyclohexane	**6.6**		2.0	0.97	ug/L			12/09/15 07:12	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			12/09/15 07:12	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			12/09/15 07:12	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			12/09/15 07:12	2
1,2-Dichlorobenzene	**3.1**		2.0	0.67	ug/L			12/09/15 07:12	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			12/09/15 07:12	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			12/09/15 07:12	2
Dichlorodifluoromethane	<4.0		4.0	1.3	ug/L			12/09/15 07:12	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			12/09/15 07:12	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			12/09/15 07:12	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			12/09/15 07:12	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			12/09/15 07:12	2
Ethylbenzene	<1.0		1.0	0.37	ug/L			12/09/15 07:12	2
2-Hexanone	<10		10	3.1	ug/L			12/09/15 07:12	2
Isopropylbenzene	**23**		2.0	0.77	ug/L			12/09/15 07:12	2
Methyl acetate	<10		10	4.0	ug/L			12/09/15 07:12	2
Methylcyclohexane	**37**		2.0	0.63	ug/L			12/09/15 07:12	2
Methylene Chloride	<10		10	3.3	ug/L			12/09/15 07:12	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			12/09/15 07:12	2
methyl isobutyl ketone	<10		10	4.3	ug/L			12/09/15 07:12	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			12/09/15 07:12	2
Styrene	<2.0		2.0	0.77	ug/L			12/09/15 07:12	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			12/09/15 07:12	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			12/09/15 07:12	2
Toluene	<1.0		1.0	0.30	ug/L			12/09/15 07:12	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			12/09/15 07:12	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			12/09/15 07:12	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			12/09/15 07:12	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			12/09/15 07:12	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			12/09/15 07:12	2
Trichloroethene	<1.0		1.0	0.33	ug/L			12/09/15 07:12	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			12/09/15 07:12	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			12/09/15 07:12	2
Vinyl chloride	<1.0		1.0	0.41	ug/L			12/09/15 07:12	2
Xylenes, Total	**2.3**		2.0	0.44	ug/L			12/09/15 07:12	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(12-14)-113015

Date Collected: 11/30/15 11:45
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*75 - 120*		*12/09/15 07:12*	*2*
Dibromofluoromethane	*97*		*75 - 120*		*12/09/15 07:12*	*2*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 125*		*12/09/15 07:12*	*2*
Toluene-d8 (Surr)	*97*		*75 - 120*		*12/09/15 07:12*	*2*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.68**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 19:59	1
Antimony	**0.0075**	**J**	0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 19:59	1
Arsenic	**0.0057**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:59	1
Barium	**1.4**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 19:59	1
Cadmium	**0.0022**		0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 19:59	1
Calcium	**110**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 19:59	1
Chromium	**0.0090**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 19:59	1
Cobalt	**0.0037**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 19:59	1
Copper	**0.024**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 19:59	1
Iron	**35**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 19:59	1
Lead	**0.084**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 19:59	1
Magnesium	**110**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 19:59	1
Manganese	**0.19**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 19:59	1
Nickel	**0.023**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 19:59	1
Potassium	**210**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 19:59	1
Selenium	**0.0049**	**J**	0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 19:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 19:59	1
Sodium	**270**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 19:59	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 19:59	1
Vanadium	**0.0035**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 19:59	1
Zinc	**0.12**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 15:50	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:04	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:04	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:04	1
Barium	**1.5**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:04	1
Cadmium	**0.0017**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:04	1
Calcium	**130**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:04	1
Chromium	**0.0057**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:04	1
Cobalt	**0.0027**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:04	1
Copper	**0.0044**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:04	1
Iron	**35**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:04	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:04	1
Magnesium	**120**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:04	1
Manganese	**0.20**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:04	1
Nickel	**0.018**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:04	1
Potassium	**230**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:04	1
Selenium	**0.0048**	**J**	0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(12-14)-113015

Lab Sample ID: 500-104630-5

Date Collected: 11/30/15 11:45

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	300		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:04	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:04	1
Vanadium	0.0026	J	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:04	1
Zinc	0.018	J ^	0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 20:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	130	B	10	2.2	mg/L		12/10/15 21:15	12/11/15 19:24	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(16-18)-113015

Lab Sample ID: 500-104630-6

Date Collected: 11/30/15 12:30
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10		10	3.5	ug/L			12/09/15 04:25	2
Benzene	**70**		1.0	0.29	ug/L			12/09/15 04:25	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			12/09/15 04:25	2
Bromoform	<2.0		2.0	0.97	ug/L			12/09/15 04:25	2
Bromomethane	<4.0		4.0	1.6	ug/L			12/09/15 04:25	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			12/09/15 04:25	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			12/09/15 04:25	2
Chlorobenzene	**1.5**	**J**	2.0	0.77	ug/L			12/09/15 04:25	2
Chloroethane	<2.0		2.0	1.0	ug/L			12/09/15 04:25	2
Chloroform	<2.0		2.0	0.74	ug/L			12/09/15 04:25	2
Chloromethane	<2.0		2.0	0.64	ug/L			12/09/15 04:25	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			12/09/15 04:25	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			12/09/15 04:25	2
Cyclohexane	**21**		2.0	0.97	ug/L			12/09/15 04:25	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			12/09/15 04:25	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			12/09/15 04:25	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			12/09/15 04:25	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			12/09/15 04:25	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			12/09/15 04:25	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			12/09/15 04:25	2
Dichlorodifluoromethane	<4.0		4.0	1.3	ug/L			12/09/15 04:25	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			12/09/15 04:25	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			12/09/15 04:25	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			12/09/15 04:25	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			12/09/15 04:25	2
Ethylbenzene	**66**		1.0	0.37	ug/L			12/09/15 04:25	2
2-Hexanone	<10		10	3.1	ug/L			12/09/15 04:25	2
Isopropylbenzene	**11**		2.0	0.77	ug/L			12/09/15 04:25	2
Methyl acetate	<10		10	4.0	ug/L			12/09/15 04:25	2
Methylcyclohexane	**14**		2.0	0.63	ug/L			12/09/15 04:25	2
Methylene Chloride	<10		10	3.3	ug/L			12/09/15 04:25	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			12/09/15 04:25	2
methyl isobutyl ketone	<10		10	4.3	ug/L			12/09/15 04:25	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			12/09/15 04:25	2
Styrene	<2.0		2.0	0.77	ug/L			12/09/15 04:25	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			12/09/15 04:25	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			12/09/15 04:25	2
Toluene	**9.8**		1.0	0.30	ug/L			12/09/15 04:25	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			12/09/15 04:25	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			12/09/15 04:25	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			12/09/15 04:25	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			12/09/15 04:25	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			12/09/15 04:25	2
Trichloroethene	<1.0		1.0	0.33	ug/L			12/09/15 04:25	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			12/09/15 04:25	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			12/09/15 04:25	2
Vinyl chloride	<1.0		1.0	0.41	ug/L			12/09/15 04:25	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(16-18)-113015

Lab Sample ID: 500-104630-6

Date Collected: 11/30/15 12:30
Matrix: Water
Date Received: 12/01/15 15:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*12/09/15 04:25*	*2*
Dibromofluoromethane	*100*		*75 - 120*		*12/09/15 04:25*	*2*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 125*		*12/09/15 04:25*	*2*
Toluene-d8 (Surr)	*96*		*75 - 120*		*12/09/15 04:25*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**740**		20	4.4	ug/L			12/09/15 04:52	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*12/09/15 04:52*	*20*
Dibromofluoromethane	*104*		*75 - 120*		*12/09/15 04:52*	*20*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 125*		*12/09/15 04:52*	*20*
Toluene-d8 (Surr)	*99*		*75 - 120*		*12/09/15 04:52*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.46**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:10	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:10	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:10	1
Barium	**1.1**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:10	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:10	1
Cadmium	**0.0017**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:10	1
Calcium	**110**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:10	1
Chromium	**0.013**		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:10	1
Cobalt	**0.0029**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:10	1
Copper	**0.015**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:10	1
Iron	**34**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:10	1
Lead	**0.042**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:10	1
Magnesium	**100**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:10	1
Manganese	**0.20**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:10	1
Nickel	**0.026**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:10	1
Potassium	**140**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:10	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:10	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:10	1
Sodium	**300**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:10	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:10	1
Vanadium	**0.0044**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:10	1
Zinc	**0.22**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 15:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:15	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:15	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:15	1
Barium	**1.0**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:15	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:15	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:15	1
Calcium	**110**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:15	1
Chromium	**0.0071**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:15	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(16-18)-113015

Lab Sample ID: 500-104630-6

Date Collected: 11/30/15 12:30
Matrix: Water
Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0040	J	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:15	1
Iron	28		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:15	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:15	1
Magnesium	100		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:15	1
Manganese	0.11		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:15	1
Nickel	0.020		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:15	1
Potassium	140		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:15	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:15	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:15	1
Sodium	310		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:15	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:15	1
Vanadium	0.0023	J	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:15	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 20:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00016	J	0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:35	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	94	B	4.4	0.95	mg/L		12/10/15 21:15	12/11/15 19:27	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(19-22)-113015

Lab Sample ID: 500-104630-7

Date Collected: 11/30/15 13:15
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10		10	3.5	ug/L			12/09/15 07:40	2
Benzene	**120**		1.0	0.29	ug/L			12/09/15 07:40	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			12/09/15 07:40	2
Bromoform	<2.0		2.0	0.97	ug/L			12/09/15 07:40	2
Bromomethane	<4.0		4.0	1.6	ug/L			12/09/15 07:40	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			12/09/15 07:40	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			12/09/15 07:40	2
Chlorobenzene	**9.0**		2.0	0.77	ug/L			12/09/15 07:40	2
Chloroethane	**6.4**		2.0	1.0	ug/L			12/09/15 07:40	2
Chloroform	<2.0		2.0	0.74	ug/L			12/09/15 07:40	2
Chloromethane	<2.0		2.0	0.64	ug/L			12/09/15 07:40	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			12/09/15 07:40	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			12/09/15 07:40	2
Cyclohexane	**77**		2.0	0.97	ug/L			12/09/15 07:40	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			12/09/15 07:40	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			12/09/15 07:40	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			12/09/15 07:40	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			12/09/15 07:40	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			12/09/15 07:40	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			12/09/15 07:40	2
Dichlorodifluoromethane	<4.0		4.0	1.3	ug/L			12/09/15 07:40	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			12/09/15 07:40	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			12/09/15 07:40	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			12/09/15 07:40	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			12/09/15 07:40	2
Ethylbenzene	<1.0		1.0	0.37	ug/L			12/09/15 07:40	2
2-Hexanone	<10		10	3.1	ug/L			12/09/15 07:40	2
Isopropylbenzene	**43**		2.0	0.77	ug/L			12/09/15 07:40	2
Methyl acetate	<10		10	4.0	ug/L			12/09/15 07:40	2
Methylcyclohexane	**45**		2.0	0.63	ug/L			12/09/15 07:40	2
Methylene Chloride	<10		10	3.3	ug/L			12/09/15 07:40	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			12/09/15 07:40	2
methyl isobutyl ketone	<10		10	4.3	ug/L			12/09/15 07:40	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			12/09/15 07:40	2
Styrene	<2.0		2.0	0.77	ug/L			12/09/15 07:40	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			12/09/15 07:40	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			12/09/15 07:40	2
Toluene	<1.0		1.0	0.30	ug/L			12/09/15 07:40	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			12/09/15 07:40	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			12/09/15 07:40	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			12/09/15 07:40	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			12/09/15 07:40	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			12/09/15 07:40	2
Trichloroethene	<1.0		1.0	0.33	ug/L			12/09/15 07:40	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			12/09/15 07:40	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			12/09/15 07:40	2
Vinyl chloride	<1.0		1.0	0.41	ug/L			12/09/15 07:40	2
Xylenes, Total	**1.9**	**J**	2.0	0.44	ug/L			12/09/15 07:40	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(19-22)-113015

Lab Sample ID: 500-104630-7

Date Collected: 11/30/15 13:15
Matrix: Water
Date Received: 12/01/15 15:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*75 - 120*		*12/09/15 07:40*	*2*
Dibromofluoromethane	*98*		*75 - 120*		*12/09/15 07:40*	*2*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 125*		*12/09/15 07:40*	*2*
Toluene-d8 (Surr)	*95*		*75 - 120*		*12/09/15 07:40*	*2*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.22**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:20	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:20	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:20	1
Barium	**0.74**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:20	1
Cadmium	**0.0018**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:20	1
Calcium	**120**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:20	1
Chromium	**0.0086**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:20	1
Cobalt	**0.0011**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:20	1
Copper	**0.0062**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:20	1
Iron	**29**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:20	1
Lead	**0.0084**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:20	1
Magnesium	**110**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:20	1
Manganese	**0.23**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:20	1
Nickel	**0.018**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:20	1
Potassium	**99**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:20	1
Selenium	**0.0061**	**J**	0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:20	1
Sodium	**290**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:20	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:20	1
Vanadium	**0.0048**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:20	1
Zinc	**0.072**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 16:00	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:26	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:26	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:26	1
Barium	**0.70**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:26	1
Cadmium	**0.0018**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:26	1
Calcium	**120**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:26	1
Chromium	**0.0074**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:26	1
Copper	**0.0038**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:26	1
Iron	**27**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:26	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:26	1
Magnesium	**110**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:26	1
Manganese	**0.22**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:26	1
Nickel	**0.017**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:26	1
Potassium	**100**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:26	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(19-22)-113015

Lab Sample ID: 500-104630-7

Date Collected: 11/30/15 13:15
Matrix: Water
Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**290**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:26	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:26	1
Vanadium	**0.0039**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:26	1
Zinc	**0.028**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 16:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:37	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**58**	**B**	4.0	0.86	mg/L		12/10/15 21:15	12/11/15 19:30	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(25-27)-113015

Lab Sample ID: 500-104630-8

Date Collected: 11/30/15 14:10
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.2**	**cn**	5.0	1.7	ug/L			12/09/15 01:10	1
Benzene	**2.6**		0.50	0.15	ug/L			12/09/15 01:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 01:10	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 01:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 01:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 01:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 01:10	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 01:10	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 01:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 01:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 01:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 01:10	1
Cyclohexane	**3.1**		1.0	0.49	ug/L			12/09/15 01:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 01:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 01:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 01:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 01:10	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 01:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 01:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 01:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 01:10	1
Ethylbenzene	**8.7**		0.50	0.18	ug/L			12/09/15 01:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 01:10	1
Isopropylbenzene	**2.5**		1.0	0.39	ug/L			12/09/15 01:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 01:10	1
Methylcyclohexane	**8.2**		1.0	0.32	ug/L			12/09/15 01:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 01:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 01:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 01:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 01:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 01:10	1
Toluene	**7.2**		0.50	0.15	ug/L			12/09/15 01:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 01:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 01:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 01:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 01:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 01:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 01:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 01:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 01:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 01:10	1
Xylenes, Total	**77**		1.0	0.22	ug/L			12/09/15 01:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(25-27)-113015

Lab Sample ID: 500-104630-8

Date Collected: 11/30/15 14:10
Matrix: Water
Date Received: 12/01/15 15:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*12/09/15 01:10*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*12/09/15 01:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 125*		*12/09/15 01:10*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*12/09/15 01:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.2**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:32	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:32	1
Arsenic	**0.0035**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:32	1
Barium	**0.32**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:32	1
Cadmium	**0.0021**		0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:32	1
Calcium	**200**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:32	1
Chromium	**0.067**		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:32	1
Cobalt	**0.0084**		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:32	1
Copper	**0.011**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:32	1
Iron	**27**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:32	1
Lead	**0.031**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:32	1
Magnesium	**230**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:32	1
Manganese	**0.41**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:32	1
Nickel	**0.093**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:32	1
Potassium	**130**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:32	1
Selenium	**0.0063**	**J**	0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:32	1
Sodium	**700**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:32	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:32	1
Vanadium	**0.042**		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:32	1
Zinc	**0.19**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 16:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:37	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:37	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:37	1
Barium	**0.21**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:37	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:37	1
Cadmium	**0.0018**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:37	1
Calcium	**170**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:37	1
Chromium	**0.050**		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:37	1
Cobalt	**0.0054**		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:37	1
Copper	**0.0045**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:37	1
Iron	**13**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:37	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:37	1
Magnesium	**220**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:37	1
Manganese	**0.18**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:37	1
Nickel	**0.076**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:37	1
Potassium	**130**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:37	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:37	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(25-27)-113015

Lab Sample ID: 500-104630-8

Date Collected: 11/30/15 14:10

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**690**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:37	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:37	1
Vanadium	**0.047**		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:37	1
Zinc	**0.014**	**J ^**	0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 20:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00021**		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**110**	**B**	10	2.2	mg/L		12/10/15 21:15	12/11/15 19:33	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(8-10)-120115

Lab Sample ID: 500-104630-9

Date Collected: 12/01/15 09:15
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 01:38	1
Benzene	**4.5**		0.50	0.15	ug/L			12/09/15 01:38	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 01:38	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 01:38	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 01:38	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 01:38	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 01:38	1
Chlorobenzene	**29**		1.0	0.39	ug/L			12/09/15 01:38	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 01:38	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 01:38	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 01:38	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 01:38	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 01:38	1
Cyclohexane	**1.5**		1.0	0.49	ug/L			12/09/15 01:38	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 01:38	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 01:38	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 01:38	1
1,2-Dichlorobenzene	**2.1**		1.0	0.33	ug/L			12/09/15 01:38	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 01:38	1
1,4-Dichlorobenzene	**5.6**		1.0	0.36	ug/L			12/09/15 01:38	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 01:38	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 01:38	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 01:38	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 01:38	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 01:38	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 01:38	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 01:38	1
Isopropylbenzene	**47**		1.0	0.39	ug/L			12/09/15 01:38	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 01:38	1
Methylcyclohexane	**2.2**		1.0	0.32	ug/L			12/09/15 01:38	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 01:38	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 01:38	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 01:38	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 01:38	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 01:38	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 01:38	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 01:38	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 01:38	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 01:38	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 01:38	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 01:38	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 01:38	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 01:38	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 01:38	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 01:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 01:38	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 01:38	1
Xylenes, Total	**0.75**	**J**	1.0	0.22	ug/L			12/09/15 01:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(8-10)-120115

Date Collected: 12/01/15 09:15
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-9

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*12/09/15 01:38*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*12/09/15 01:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 125*		*12/09/15 01:38*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*12/09/15 01:38*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.29**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:42	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:42	1
Arsenic	**0.0031**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:42	1
Barium	**0.51**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:42	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:42	1
Cadmium	**0.0016**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:42	1
Calcium	**92**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:42	1
Chromium	**0.010**		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:42	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:42	1
Copper	**0.0057**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:42	1
Iron	**18**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:42	1
Lead	**0.0079**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:42	1
Magnesium	**66**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:42	1
Manganese	**0.34**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:42	1
Nickel	**0.0058**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:42	1
Potassium	**65**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:42	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:42	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:42	1
Sodium	**150**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:42	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:42	1
Vanadium	**0.0023**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:42	1
Zinc	**0.024**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 16:24	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:47	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:47	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:47	1
Barium	**0.51**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:47	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:47	1
Calcium	**93**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:47	1
Chromium	**0.0026**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:47	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:47	1
Copper	**0.0034**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:47	1
Iron	**16**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:47	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:47	1
Magnesium	**68**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:47	1
Manganese	**0.29**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:47	1
Nickel	**0.0039**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:47	1
Potassium	**67**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:47	1
Selenium	**0.0047**	**J**	0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(8-10)-120115

Lab Sample ID: 500-104630-9

Date Collected: 12/01/15 09:15

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**160**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:47	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:47	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:47	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 20:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:41	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**60**	**B**	4.0	0.86	mg/L		12/10/15 21:15	12/11/15 19:35	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(12-14)-120115

Lab Sample ID: 500-104630-10

Date Collected: 12/01/15 09:55
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 03:29	1
Benzene	**15**		0.50	0.15	ug/L			12/09/15 03:29	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 03:29	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 03:29	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 03:29	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 03:29	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 03:29	1
Chlorobenzene	**30**		1.0	0.39	ug/L			12/09/15 03:29	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 03:29	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 03:29	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 03:29	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 03:29	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 03:29	1
Cyclohexane	**1.4**		1.0	0.49	ug/L			12/09/15 03:29	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 03:29	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 03:29	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 03:29	1
1,2-Dichlorobenzene	**1.2**		1.0	0.33	ug/L			12/09/15 03:29	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 03:29	1
1,4-Dichlorobenzene	**5.1**		1.0	0.36	ug/L			12/09/15 03:29	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 03:29	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 03:29	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 03:29	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 03:29	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 03:29	1
Ethylbenzene	**7.3**		0.50	0.18	ug/L			12/09/15 03:29	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 03:29	1
Isopropylbenzene	**400**		5.0	1.9	ug/L			12/09/15 03:57	5
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 03:29	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			12/09/15 03:29	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 03:29	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 03:29	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 03:29	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 03:29	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 03:29	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 03:29	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 03:29	1
Toluene	**3.2**		0.50	0.15	ug/L			12/09/15 03:29	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 03:29	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 03:29	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 03:29	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 03:29	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 03:29	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 03:29	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 03:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 03:29	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 03:29	1
Xylenes, Total	**62**		1.0	0.22	ug/L			12/09/15 03:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(12-14)-120115

Date Collected: 12/01/15 09:55
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-10

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*12/09/15 03:29*	*1*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*12/09/15 03:57*	*5*
Dibromofluoromethane	*99*		*75 - 120*		*12/09/15 03:29*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*12/09/15 03:57*	*5*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 125*		*12/09/15 03:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 125*		*12/09/15 03:57*	*5*
Toluene-d8 (Surr)	*96*		*75 - 120*		*12/09/15 03:29*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*12/09/15 03:57*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.65**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 20:59	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 20:59	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:59	1
Barium	**0.63**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 20:59	1
Cadmium	**0.0021**		0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 20:59	1
Calcium	**90**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 20:59	1
Chromium	**0.011**		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 20:59	1
Cobalt	**0.0022**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 20:59	1
Copper	**0.014**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 20:59	1
Iron	**25**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 20:59	1
Lead	**0.063**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 20:59	1
Magnesium	**68**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 20:59	1
Manganese	**0.22**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 20:59	1
Nickel	**0.013**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 20:59	1
Potassium	**73**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 20:59	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 20:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 20:59	1
Sodium	**190**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 20:59	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 20:59	1
Vanadium	**0.0025**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 20:59	1
Zinc	**1.2**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 16:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 21:03	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 21:03	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 21:03	1
Barium	**0.64**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 21:03	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 21:03	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 21:03	1
Calcium	**93**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 21:03	1
Chromium	**0.0038**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 21:03	1
Cobalt	**0.0014**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 21:03	1
Copper	**0.0031**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 21:03	1
Iron	**23**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 21:03	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 21:03	1
Magnesium	**71**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 21:03	1
Manganese	**0.17**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 21:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(12-14)-120115

Lab Sample ID: 500-104630-10

Date Collected: 12/01/15 09:55

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	**0.0060**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 21:03	1
Potassium	**76**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 21:03	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 21:03	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 21:03	1
Sodium	**200**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 21:03	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 21:03	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 21:03	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 21:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00034**		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**73**	**B**	4.0	0.86	mg/L		12/10/15 21:15	12/11/15 19:38	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(16-18)-120115

Lab Sample ID: 500-104630-11

Date Collected: 12/01/15 10:40
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 02:05	1
Benzene	**6.7**		0.50	0.15	ug/L			12/09/15 02:05	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 02:05	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 02:05	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 02:05	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 02:05	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 02:05	1
Chlorobenzene	**5.5**		1.0	0.39	ug/L			12/09/15 02:05	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 02:05	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 02:05	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 02:05	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 02:05	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 02:05	1
Cyclohexane	**1.3**		1.0	0.49	ug/L			12/09/15 02:05	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 02:05	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 02:05	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 02:05	1
1,2-Dichlorobenzene	**0.83**	**J**	1.0	0.33	ug/L			12/09/15 02:05	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 02:05	1
1,4-Dichlorobenzene	**2.0**		1.0	0.36	ug/L			12/09/15 02:05	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 02:05	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 02:05	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 02:05	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 02:05	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 02:05	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 02:05	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 02:05	1
Isopropylbenzene	**68**		1.0	0.39	ug/L			12/09/15 02:05	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 02:05	1
Methylcyclohexane	**1.1**		1.0	0.32	ug/L			12/09/15 02:05	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 02:05	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 02:05	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 02:05	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 02:05	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 02:05	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 02:05	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 02:05	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 02:05	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 02:05	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 02:05	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 02:05	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 02:05	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 02:05	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 02:05	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 02:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 02:05	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 02:05	1
Xylenes, Total	**2.2**		1.0	0.22	ug/L			12/09/15 02:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(16-18)-120115

Lab Sample ID: 500-104630-11

Date Collected: 12/01/15 10:40
Matrix: Water
Date Received: 12/01/15 15:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*12/09/15 02:05*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*12/09/15 02:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 125*		*12/09/15 02:05*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*12/09/15 02:05*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.42**		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 21:09	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 21:09	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 21:09	1
Barium	**0.84**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 21:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 21:09	1
Cadmium	**0.0016**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 21:09	1
Calcium	**91**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 21:09	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 21:09	1
Cobalt	**0.0011**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 21:09	1
Copper	**0.010**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 21:09	1
Iron	**17**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 21:09	1
Lead	**0.059**		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 21:09	1
Magnesium	**70**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 21:09	1
Manganese	**0.19**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 21:09	1
Nickel	**0.010**		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 21:09	1
Potassium	**74**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 21:09	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 21:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 21:09	1
Sodium	**200**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 21:09	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 21:09	1
Vanadium	**0.0023**	**J**	0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 21:09	1
Zinc	**0.054**		0.020	0.0090	mg/L		12/02/15 09:07	12/04/15 16:33	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 21:14	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 21:14	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 21:14	1
Barium	**0.89**		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 21:14	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 21:14	1
Cadmium	**0.0017**	**J**	0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 21:14	1
Calcium	**92**		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 21:14	1
Chromium	**0.0033**	**J**	0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 21:14	1
Cobalt	**0.0014**	**J**	0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 21:14	1
Copper	**0.0037**	**J**	0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 21:14	1
Iron	**16**		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 21:14	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 21:14	1
Magnesium	**75**		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 21:14	1
Manganese	**0.16**		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 21:14	1
Nickel	**0.0070**	**J**	0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 21:14	1
Potassium	**80**		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 21:14	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 21:14	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 21:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(16-18)-120115

Lab Sample ID: 500-104630-11

Date Collected: 12/01/15 10:40

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**220**		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 21:14	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 21:14	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 21:14	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 21:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**75**	**B**	4.0	0.86	mg/L		12/10/15 21:15	12/11/15 19:41	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(14-16)-120115

Lab Sample ID: 500-104630-12

Date Collected: 12/01/15 11:40
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**52**	**cn**	25	8.7	ug/L			12/09/15 05:20	5
Benzene	**460**		2.5	0.73	ug/L			12/09/15 05:20	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			12/09/15 05:20	5
Bromoform	<5.0		5.0	2.4	ug/L			12/09/15 05:20	5
Bromomethane	<10		10	4.0	ug/L			12/09/15 05:20	5
Carbon disulfide	**14**		10	2.2	ug/L			12/09/15 05:20	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			12/09/15 05:20	5
Chlorobenzene	<5.0		5.0	1.9	ug/L			12/09/15 05:20	5
Chloroethane	<5.0		5.0	2.5	ug/L			12/09/15 05:20	5
Chloroform	<5.0		5.0	1.9	ug/L			12/09/15 05:20	5
Chloromethane	<5.0		5.0	1.6	ug/L			12/09/15 05:20	5
cis-1,2-Dichloroethene	**81**		5.0	2.0	ug/L			12/09/15 05:20	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			12/09/15 05:20	5
Cyclohexane	<5.0		5.0	2.4	ug/L			12/09/15 05:20	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			12/09/15 05:20	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			12/09/15 05:20	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			12/09/15 05:20	5
1,2-Dichlorobenzene	**10**		5.0	1.7	ug/L			12/09/15 05:20	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			12/09/15 05:20	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			12/09/15 05:20	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			12/09/15 05:20	5
1,1-Dichloroethane	**100**		5.0	2.1	ug/L			12/09/15 05:20	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			12/09/15 05:20	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			12/09/15 05:20	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			12/09/15 05:20	5
Ethylbenzene	**560**		2.5	0.92	ug/L			12/09/15 05:20	5
2-Hexanone	<25		25	7.8	ug/L			12/09/15 05:20	5
Isopropylbenzene	**14**		5.0	1.9	ug/L			12/09/15 05:20	5
Methyl acetate	<25		25	10	ug/L			12/09/15 05:20	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			12/09/15 05:20	5
Methylene Chloride	<25		25	8.2	ug/L			12/09/15 05:20	5
Methyl Ethyl Ketone	<25		25	11	ug/L			12/09/15 05:20	5
methyl isobutyl ketone	**70**		25	11	ug/L			12/09/15 05:20	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			12/09/15 05:20	5
Styrene	<5.0		5.0	1.9	ug/L			12/09/15 05:20	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			12/09/15 05:20	5
Tetrachloroethene	**2.8**	**J**	5.0	1.9	ug/L			12/09/15 05:20	5
trans-1,2-Dichloroethene	**6.0**		5.0	1.7	ug/L			12/09/15 05:20	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			12/09/15 05:20	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			12/09/15 05:20	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			12/09/15 05:20	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			12/09/15 05:20	5
Trichloroethene	**7.3**		2.5	0.82	ug/L			12/09/15 05:20	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			12/09/15 05:20	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			12/09/15 05:20	5
Vinyl chloride	<2.5		2.5	1.0	ug/L			12/09/15 05:20	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*75 - 120*		*12/09/15 05:20*	*5*

Client Sample ID: VAP-HPT22(14-16)-120115

Lab Sample ID: 500-104630-12

Date Collected: 12/01/15 11:40

Matrix: Water

Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*95*		*75 - 120*		*12/09/15 05:20*	*5*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 125*		*12/09/15 05:20*	*5*
Toluene-d8 (Surr)	*93*		*75 - 120*		*12/09/15 05:20*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**2700**		25	7.6	ug/L			12/09/15 05:48	50
Xylenes, Total	**3100**		50	11	ug/L			12/09/15 05:48	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*75 - 120*		*12/09/15 05:48*	*50*
Dibromofluoromethane	*99*		*75 - 120*		*12/09/15 05:48*	*50*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 125*		*12/09/15 05:48*	*50*
Toluene-d8 (Surr)	*96*		*75 - 120*		*12/09/15 05:48*	*50*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 18:59	1
Antimony	**0.016**	**J**	0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 18:59	1
Arsenic	**0.017**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 18:59	1
Barium	**0.054**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 18:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 18:59	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 18:59	1
Calcium	**200**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 18:59	1
Chromium	**0.0073**	**J**	0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 18:59	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 18:59	1
Copper	**0.0090**	**J**	0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 18:59	1
Iron	**2.2**	**F1**	0.20	0.10	mg/L		12/02/15 09:14	12/02/15 18:59	1
Lead	**0.014**		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 18:59	1
Magnesium	**0.17**		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 20:53	1
Manganese	**0.047**		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 18:59	1
Nickel	**0.023**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 18:59	1
Potassium	**32**		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 18:59	1
Selenium	<0.010	F1 F2	0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 18:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 18:59	1
Sodium	**190**		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 18:59	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 18:59	1
Vanadium	**0.012**		0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 18:59	1
Zinc	**0.038**		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 18:59	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 19:21	1
Antimony	**0.011**	**J**	0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 19:21	1
Arsenic	**0.019**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:21	1
Barium	**0.051**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:21	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 19:21	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 19:21	1
Calcium	**200**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 19:21	1
Chromium	**0.0027**	**J**	0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 19:21	1

Client Sample ID: VAP-HPT22(14-16)-120115

Lab Sample ID: 500-104630-12

Date Collected: 12/01/15 11:40

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 19:21	1
Copper	<0.010		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:21	1
Iron	**1.8**		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 19:21	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 19:21	1
Magnesium	**0.079**	**J**	0.10	0.034	mg/L		12/02/15 09:14	12/03/15 21:23	1
Manganese	<0.010		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 19:21	1
Nickel	**0.016**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:21	1
Potassium	**33**		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 19:21	1
Selenium	**0.013**		0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 19:21	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 19:21	1
Sodium	**190**		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 19:21	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 19:21	1
Vanadium	**0.0099**		0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 19:21	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 19:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J**	0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:51	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**19**	**B**	1.0	0.22	mg/L		12/10/15 21:15	12/11/15 02:43	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(18-21)-120115

Lab Sample ID: 500-104630-13

Date Collected: 12/01/15 12:15
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			12/09/15 06:16	10
Benzene	**370**		5.0	1.5	ug/L			12/09/15 06:16	10
Bromodichloromethane	<10		10	3.7	ug/L			12/09/15 06:16	10
Bromoform	<10		10	4.8	ug/L			12/09/15 06:16	10
Bromomethane	<20		20	8.0	ug/L			12/09/15 06:16	10
Carbon disulfide	<20		20	4.5	ug/L			12/09/15 06:16	10
Carbon tetrachloride	<10		10	3.8	ug/L			12/09/15 06:16	10
Chlorobenzene	**6.2**	**J**	10	3.9	ug/L			12/09/15 06:16	10
Chloroethane	<10		10	5.1	ug/L			12/09/15 06:16	10
Chloroform	<10		10	3.7	ug/L			12/09/15 06:16	10
Chloromethane	<10		10	3.2	ug/L			12/09/15 06:16	10
cis-1,2-Dichloroethene	**15**		10	4.1	ug/L			12/09/15 06:16	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			12/09/15 06:16	10
Cyclohexane	<10		10	4.9	ug/L			12/09/15 06:16	10
Dibromochloromethane	<10		10	4.9	ug/L			12/09/15 06:16	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			12/09/15 06:16	10
1,2-Dibromoethane	<10		10	3.9	ug/L			12/09/15 06:16	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			12/09/15 06:16	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			12/09/15 06:16	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			12/09/15 06:16	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			12/09/15 06:16	10
1,1-Dichloroethane	**13**		10	4.1	ug/L			12/09/15 06:16	10
1,2-Dichloroethane	<10		10	3.9	ug/L			12/09/15 06:16	10
1,1-Dichloroethene	<10		10	3.9	ug/L			12/09/15 06:16	10
1,2-Dichloropropane	<10		10	4.3	ug/L			12/09/15 06:16	10
2-Hexanone	<50		50	16	ug/L			12/09/15 06:16	10
Isopropylbenzene	**170**		10	3.9	ug/L			12/09/15 06:16	10
Methyl acetate	<50		50	20	ug/L			12/09/15 06:16	10
Methylcyclohexane	<10		10	3.2	ug/L			12/09/15 06:16	10
Methylene Chloride	<50		50	16	ug/L			12/09/15 06:16	10
Methyl Ethyl Ketone	<50		50	21	ug/L			12/09/15 06:16	10
methyl isobutyl ketone	<50		50	22	ug/L			12/09/15 06:16	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			12/09/15 06:16	10
Styrene	<10		10	3.9	ug/L			12/09/15 06:16	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			12/09/15 06:16	10
Tetrachloroethene	<10		10	3.7	ug/L			12/09/15 06:16	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			12/09/15 06:16	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			12/09/15 06:16	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			12/09/15 06:16	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			12/09/15 06:16	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			12/09/15 06:16	10
Trichloroethene	<5.0		5.0	1.6	ug/L			12/09/15 06:16	10
Trichlorofluoromethane	<10		10	4.3	ug/L			12/09/15 06:16	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			12/09/15 06:16	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			12/09/15 06:16	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*12/09/15 06:16*	*10*
Dibromofluoromethane	*97*		*75 - 120*		*12/09/15 06:16*	*10*

Client Sample ID: VAP-HPT22(18-21)-120115

Lab Sample ID: 500-104630-13

Date Collected: 12/01/15 12:15

Matrix: Water

Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 125*		*12/09/15 06:16*	*10*
Toluene-d8 (Surr)	*93*		*75 - 120*		*12/09/15 06:16*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**2800**		50	18	ug/L			12/09/15 06:44	100
Toluene	**4600**		50	15	ug/L			12/09/15 06:44	100
Xylenes, Total	**25000**		100	22	ug/L			12/09/15 06:44	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*12/09/15 06:44*	*100*
Dibromofluoromethane	*100*		*75 - 120*		*12/09/15 06:44*	*100*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 125*		*12/09/15 06:44*	*100*
Toluene-d8 (Surr)	*98*		*75 - 120*		*12/09/15 06:44*	*100*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.3**		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 19:26	1
Antimony	**0.0066**	**J**	0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 19:26	1
Arsenic	**0.0089**	**J**	0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:26	1
Barium	**0.37**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 19:26	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 19:26	1
Calcium	**100**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 19:26	1
Chromium	**0.021**		0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 19:26	1
Cobalt	**0.0024**	**J**	0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 19:26	1
Copper	**0.014**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:26	1
Iron	**29**		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 19:26	1
Lead	**0.047**		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 19:26	1
Magnesium	**64**		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 21:27	1
Manganese	**0.93**		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 19:26	1
Nickel	**0.016**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:26	1
Potassium	**69**		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 19:26	1
Selenium	**0.0069**	**J**	0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 19:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 19:26	1
Sodium	**230**		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 19:26	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 19:26	1
Vanadium	**0.014**		0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 19:26	1
Zinc	**0.16**		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 19:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 19:31	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 19:31	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:31	1
Barium	**0.27**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 19:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 19:31	1
Calcium	**84**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 19:31	1
Chromium	**0.0034**	**J**	0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 19:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(18-21)-120115

Lab Sample ID: 500-104630-13

Date Collected: 12/01/15 12:15
Matrix: Water
Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0019	J	0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 19:31	1
Copper	0.0028	J	0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:31	1
Iron	13		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 19:31	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 19:31	1
Magnesium	62		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 21:33	1
Manganese	0.23		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 19:31	1
Nickel	0.0075	J	0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:31	1
Potassium	71		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 19:31	1
Selenium	0.0087	J	0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 19:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 19:31	1
Sodium	230		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 19:31	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 19:31	1
Vanadium	0.0030	J	0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 19:31	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 19:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00016	J	0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	78	B	5.0	1.1	mg/L		12/10/15 21:15	12/11/15 02:46	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(24-27)-120115

Lab Sample ID: 500-104630-14

Date Collected: 12/01/15 13:00
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**14**	**cn**	5.0	1.7	ug/L			12/09/15 02:33	1
Benzene	**110**		0.50	0.15	ug/L			12/09/15 02:33	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 02:33	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 02:33	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 02:33	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 02:33	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 02:33	1
Chlorobenzene	**1.8**		1.0	0.39	ug/L			12/09/15 02:33	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 02:33	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 02:33	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 02:33	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 02:33	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 02:33	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 02:33	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 02:33	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 02:33	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 02:33	1
1,2-Dichlorobenzene	**0.74**	**J**	1.0	0.33	ug/L			12/09/15 02:33	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 02:33	1
1,4-Dichlorobenzene	**0.70**	**J**	1.0	0.36	ug/L			12/09/15 02:33	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 02:33	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 02:33	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 02:33	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 02:33	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 02:33	1
Ethylbenzene	**18**		0.50	0.18	ug/L			12/09/15 02:33	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 02:33	1
Isopropylbenzene	**6.5**		1.0	0.39	ug/L			12/09/15 02:33	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 02:33	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 02:33	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 02:33	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 02:33	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 02:33	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 02:33	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 02:33	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 02:33	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 02:33	1
Toluene	**39**		0.50	0.15	ug/L			12/09/15 02:33	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 02:33	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 02:33	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 02:33	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 02:33	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 02:33	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 02:33	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 02:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 02:33	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 02:33	1
Xylenes, Total	**140**		1.0	0.22	ug/L			12/09/15 02:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(24-27)-120115

Lab Sample ID: 500-104630-14

Date Collected: 12/01/15 13:00
Matrix: Water
Date Received: 12/01/15 15:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*75 - 120*		*12/09/15 02:33*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*12/09/15 02:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 125*		*12/09/15 02:33*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*12/09/15 02:33*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.64**		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 19:36	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 19:36	1
Arsenic	**0.0078**	**J**	0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:36	1
Barium	**0.78**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:36	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 19:36	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 19:36	1
Calcium	**72**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 19:36	1
Chromium	**0.016**		0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 19:36	1
Cobalt	**0.0045**	**J**	0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 19:36	1
Copper	**0.016**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:36	1
Iron	**25**		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 19:36	1
Lead	**0.031**		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 19:36	1
Magnesium	**85**		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 21:38	1
Manganese	**0.49**		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 19:36	1
Nickel	**0.032**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:36	1
Potassium	**140**		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 19:36	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 19:36	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 19:36	1
Sodium	**330**		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 19:36	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 19:36	1
Vanadium	**0.0081**		0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 19:36	1
Zinc	**0.091**		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 19:36	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 19:41	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 19:41	1
Arsenic	**0.0085**	**J**	0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:41	1
Barium	**0.75**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:41	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 19:41	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 19:41	1
Calcium	**62**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 19:41	1
Chromium	**0.0053**	**J**	0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 19:41	1
Cobalt	**0.0045**	**J**	0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 19:41	1
Copper	**0.0026**	**J**	0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:41	1
Iron	**9.8**		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 19:41	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 19:41	1
Magnesium	**88**		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 21:43	1
Manganese	**0.079**		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 19:41	1
Nickel	**0.019**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:41	1
Potassium	**140**		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 19:41	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 19:41	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 19:41	1

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(24-27)-120115

Lab Sample ID: 500-104630-14

Date Collected: 12/01/15 13:00

Matrix: Water

Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**340**		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 19:41	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 19:41	1
Vanadium	**0.0021**	**J**	0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 19:41	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 19:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**110**	**B**	10	2.2	mg/L		12/10/15 21:15	12/11/15 19:50	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT23(8-11)-120115

Lab Sample ID: 500-104630-15

Date Collected: 12/01/15 14:05
Matrix: Water
Date Received: 12/01/15 15:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**5.1**	**cn**	5.0	1.7	ug/L			12/09/15 03:01	1
Benzene	**14**		0.50	0.15	ug/L			12/09/15 03:01	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 03:01	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 03:01	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 03:01	1
Carbon disulfide	**1.5**	**J**	2.0	0.45	ug/L			12/09/15 03:01	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 03:01	1
Chlorobenzene	**2.3**		1.0	0.39	ug/L			12/09/15 03:01	1
Chloroethane	**4.7**		1.0	0.51	ug/L			12/09/15 03:01	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 03:01	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 03:01	1
cis-1,2-Dichloroethene	**9.3**		1.0	0.41	ug/L			12/09/15 03:01	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 03:01	1
Cyclohexane	**1.1**		1.0	0.49	ug/L			12/09/15 03:01	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 03:01	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 03:01	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 03:01	1
1,2-Dichlorobenzene	**3.4**		1.0	0.33	ug/L			12/09/15 03:01	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 03:01	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 03:01	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 03:01	1
1,1-Dichloroethane	**1.4**		1.0	0.41	ug/L			12/09/15 03:01	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 03:01	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 03:01	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 03:01	1
Ethylbenzene	**76**		0.50	0.18	ug/L			12/09/15 03:01	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 03:01	1
Isopropylbenzene	**13**		1.0	0.39	ug/L			12/09/15 03:01	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 03:01	1
Methylcyclohexane	**4.3**		1.0	0.32	ug/L			12/09/15 03:01	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 03:01	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 03:01	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 03:01	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 03:01	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 03:01	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 03:01	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 03:01	1
Toluene	**8.2**		0.50	0.15	ug/L			12/09/15 03:01	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 03:01	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 03:01	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 03:01	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 03:01	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 03:01	1
Trichloroethene	**0.71**		0.50	0.16	ug/L			12/09/15 03:01	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 03:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 03:01	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 03:01	1
Xylenes, Total	**88**		1.0	0.22	ug/L			12/09/15 03:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT23(8-11)-120115

Date Collected: 12/01/15 14:05
Date Received: 12/01/15 15:15

Lab Sample ID: 500-104630-15

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*12/09/15 03:01*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*12/09/15 03:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 125*		*12/09/15 03:01*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*12/09/15 03:01*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**6.5**		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 19:54	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 19:54	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:54	1
Barium	**0.20**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:54	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 19:54	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 19:54	1
Calcium	**370**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 19:54	1
Chromium	**0.33**		0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 19:54	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 19:54	1
Copper	**0.0069**	**J**	0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:54	1
Iron	**47**		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 19:54	1
Lead	**0.0043**	**J**	0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 19:54	1
Magnesium	**28**		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 21:49	1
Manganese	**17**		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 19:54	1
Nickel	**0.027**		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:54	1
Potassium	**10**		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 19:54	1
Selenium	**0.0092**	**J**	0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 19:54	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 19:54	1
Sodium	**44**		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 19:54	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 19:54	1
Vanadium	**0.28**		0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 19:54	1
Zinc	**0.56**		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 19:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 19:58	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 19:58	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:58	1
Barium	**0.028**		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 19:58	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 19:58	1
Calcium	**55**		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 19:58	1
Chromium	<0.010		0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 19:58	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 19:58	1
Copper	<0.010		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 19:58	1
Iron	<0.20		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 19:58	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 19:58	1
Magnesium	**15**		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 21:53	1
Manganese	**0.041**		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 19:58	1
Nickel	<0.010		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 19:58	1
Potassium	**9.7**		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 19:58	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 19:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 19:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT23(8-11)-120115

Lab Sample ID: 500-104630-15

Date Collected: 12/01/15 14:05
Matrix: Water
Date Received: 12/01/15 15:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**43**		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 19:58	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 19:58	1
Vanadium	**0.0097**		0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 19:58	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 19:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:57	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 09:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**2.1**	**B**	0.20	0.043	mg/L		12/10/15 21:15	12/11/15 02:52	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
cn	Refer to Case Narrative for further detail
F2	MS/MSD RPD exceeds control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
F3	Duplicate RPD exceeds the control limit
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

GC/MS VOA

Analysis Batch: 315539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-1	TB-1(1201115)	Total/NA	Water	8260B	
500-104630-2	VAP-HPT19(6-8)-113015	Total/NA	Water	8260B	
500-104630-2 MS	VAP-HPT19(6-8)-113015	Total/NA	Water	8260B	
500-104630-2 MSD	VAP-HPT19(6-8)-113015	Total/NA	Water	8260B	
500-104630-3	VAP-HPT19(9-11)-113015	Total/NA	Water	8260B	
500-104630-4	VAP-HPT19(12-14)-113015	Total/NA	Water	8260B	
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	8260B	
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	8260B	
500-104630-6 - DL	VAP-HPT18(16-18)-113015	Total/NA	Water	8260B	
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	8260B	
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	8260B	
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	8260B	
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	8260B	
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	8260B	
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	8260B	
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	8260B	
500-104630-12 - DL	VAP-HPT22(14-16)-120115	Total/NA	Water	8260B	
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	8260B	
500-104630-13 - DL	VAP-HPT22(18-21)-120115	Total/NA	Water	8260B	
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	8260B	
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	8260B	
LCS 500-315539/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-315539/6	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 314800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-2	VAP-HPT19(6-8)-113015	Dissolved	Water	3010A	
500-104630-2	VAP-HPT19(6-8)-113015	Total/NA	Water	3010A	
500-104630-2 DU	VAP-HPT19(6-8)-113015	Total/NA	Water	3010A	
500-104630-2 MS	VAP-HPT19(6-8)-113015	Total/NA	Water	3010A	
500-104630-2 MSD	VAP-HPT19(6-8)-113015	Total/NA	Water	3010A	
500-104630-3	VAP-HPT19(9-11)-113015	Dissolved	Water	3010A	
500-104630-3	VAP-HPT19(9-11)-113015	Total/NA	Water	3010A	
500-104630-4	VAP-HPT19(12-14)-113015	Dissolved	Water	3010A	
500-104630-4	VAP-HPT19(12-14)-113015	Total/NA	Water	3010A	
500-104630-5	VAP-HPT18(12-14)-113015	Dissolved	Water	3010A	
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	3010A	
500-104630-6	VAP-HPT18(16-18)-113015	Dissolved	Water	3010A	
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	3010A	
500-104630-7	VAP-HPT18(19-22)-113015	Dissolved	Water	3010A	
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	3010A	
500-104630-8	VAP-HPT18(25-27)-113015	Dissolved	Water	3010A	
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	3010A	
500-104630-9	VAP-HPT21(8-10)-120115	Dissolved	Water	3010A	
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	3010A	
500-104630-10	VAP-HPT21(12-14)-120115	Dissolved	Water	3010A	
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	3010A	
500-104630-11	VAP-HPT21(16-18)-120115	Dissolved	Water	3010A	

Metals (Continued)

Prep Batch: 314800 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	3010A	
LCS 500-314800/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-314800/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 314803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-12	VAP-HPT22(14-16)-120115	Dissolved	Water	3010A	
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	3010A	
500-104630-12 DU	VAP-HPT22(14-16)-120115	Total/NA	Water	3010A	
500-104630-12 MS	VAP-HPT22(14-16)-120115	Total/NA	Water	3010A	
500-104630-12 MSD	VAP-HPT22(14-16)-120115	Total/NA	Water	3010A	
500-104630-13	VAP-HPT22(18-21)-120115	Dissolved	Water	3010A	
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	3010A	
500-104630-14	VAP-HPT22(24-27)-120115	Dissolved	Water	3010A	
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	3010A	
500-104630-15	VAP-HPT23(8-11)-120115	Dissolved	Water	3010A	
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	3010A	
LCS 500-314803/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-314803/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 314846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-2	VAP-HPT19(6-8)-113015	Total/NA	Water	7470A	
500-104630-3	VAP-HPT19(9-11)-113015	Total/NA	Water	7470A	
500-104630-4	VAP-HPT19(12-14)-113015	Total/NA	Water	7470A	
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	7470A	
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	7470A	
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	7470A	
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	7470A	
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	7470A	
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	7470A	
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	7470A	
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	7470A	
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	7470A	
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	7470A	
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	7470A	
LCS 500-314846/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-314846/12-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 314848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-2	VAP-HPT19(6-8)-113015	Dissolved	Water	7470A	
500-104630-3	VAP-HPT19(9-11)-113015	Dissolved	Water	7470A	
500-104630-4	VAP-HPT19(12-14)-113015	Dissolved	Water	7470A	
500-104630-5	VAP-HPT18(12-14)-113015	Dissolved	Water	7470A	
500-104630-6	VAP-HPT18(16-18)-113015	Dissolved	Water	7470A	
500-104630-7	VAP-HPT18(19-22)-113015	Dissolved	Water	7470A	
500-104630-8	VAP-HPT18(25-27)-113015	Dissolved	Water	7470A	
500-104630-9	VAP-HPT21(8-10)-120115	Dissolved	Water	7470A	
500-104630-10	VAP-HPT21(12-14)-120115	Dissolved	Water	7470A	
500-104630-11	VAP-HPT21(16-18)-120115	Dissolved	Water	7470A	

Metals (Continued)

Prep Batch: 314848 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-12	VAP-HPT22(14-16)-120115	Dissolved	Water	7470A	
500-104630-13	VAP-HPT22(18-21)-120115	Dissolved	Water	7470A	
500-104630-14	VAP-HPT22(24-27)-120115	Dissolved	Water	7470A	
500-104630-15	VAP-HPT23(8-11)-120115	Dissolved	Water	7470A	
LCS 500-314848/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-314848/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 314952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-12	VAP-HPT22(14-16)-120115	Dissolved	Water	6010C	314803
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-12 DU	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-12 MS	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-12 MSD	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-13	VAP-HPT22(18-21)-120115	Dissolved	Water	6010C	314803
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	6010C	314803
500-104630-14	VAP-HPT22(24-27)-120115	Dissolved	Water	6010C	314803
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	6010C	314803
500-104630-15	VAP-HPT23(8-11)-120115	Dissolved	Water	6010C	314803
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	6010C	314803
LCS 500-314803/2-A	Lab Control Sample	Total/NA	Water	6010C	314803
MB 500-314803/1-A	Method Blank	Total/NA	Water	6010C	314803

Analysis Batch: 314956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-2	VAP-HPT19(6-8)-113015	Dissolved	Water	6010C	314800
500-104630-2	VAP-HPT19(6-8)-113015	Total/NA	Water	6010C	314800
500-104630-2 DU	VAP-HPT19(6-8)-113015	Total/NA	Water	6010C	314800
500-104630-2 MS	VAP-HPT19(6-8)-113015	Total/NA	Water	6010C	314800
500-104630-2 MSD	VAP-HPT19(6-8)-113015	Total/NA	Water	6010C	314800
500-104630-3	VAP-HPT19(9-11)-113015	Dissolved	Water	6010C	314800
500-104630-3	VAP-HPT19(9-11)-113015	Total/NA	Water	6010C	314800
500-104630-4	VAP-HPT19(12-14)-113015	Dissolved	Water	6010C	314800
500-104630-4	VAP-HPT19(12-14)-113015	Total/NA	Water	6010C	314800
500-104630-5	VAP-HPT18(12-14)-113015	Dissolved	Water	6010C	314800
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	6010C	314800
500-104630-6	VAP-HPT18(16-18)-113015	Dissolved	Water	6010C	314800
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	6010C	314800
500-104630-7	VAP-HPT18(19-22)-113015	Dissolved	Water	6010C	314800
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	6010C	314800
500-104630-8	VAP-HPT18(25-27)-113015	Dissolved	Water	6010C	314800
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	6010C	314800
500-104630-9	VAP-HPT21(8-10)-120115	Dissolved	Water	6010C	314800
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	6010C	314800
500-104630-10	VAP-HPT21(12-14)-120115	Dissolved	Water	6010C	314800
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	6010C	314800
500-104630-11	VAP-HPT21(16-18)-120115	Dissolved	Water	6010C	314800
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	6010C	314800
LCS 500-314800/2-A	Lab Control Sample	Total/NA	Water	6010C	314800
MB 500-314800/1-A	Method Blank	Total/NA	Water	6010C	314800

Metals (Continued)

Analysis Batch: 315006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-2	VAP-HPT19(6-8)-113015	Dissolved	Water	7470A	314848
500-104630-2	VAP-HPT19(6-8)-113015	Total/NA	Water	7470A	314846
500-104630-3	VAP-HPT19(9-11)-113015	Dissolved	Water	7470A	314848
500-104630-3	VAP-HPT19(9-11)-113015	Total/NA	Water	7470A	314846
500-104630-4	VAP-HPT19(12-14)-113015	Dissolved	Water	7470A	314848
500-104630-4	VAP-HPT19(12-14)-113015	Total/NA	Water	7470A	314846
500-104630-5	VAP-HPT18(12-14)-113015	Dissolved	Water	7470A	314848
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	7470A	314846
500-104630-6	VAP-HPT18(16-18)-113015	Dissolved	Water	7470A	314848
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	7470A	314846
500-104630-7	VAP-HPT18(19-22)-113015	Dissolved	Water	7470A	314848
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	7470A	314846
500-104630-8	VAP-HPT18(25-27)-113015	Dissolved	Water	7470A	314848
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	7470A	314846
500-104630-9	VAP-HPT21(8-10)-120115	Dissolved	Water	7470A	314848
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	7470A	314846
500-104630-10	VAP-HPT21(12-14)-120115	Dissolved	Water	7470A	314848
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	7470A	314846
500-104630-11	VAP-HPT21(16-18)-120115	Dissolved	Water	7470A	314848
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	7470A	314846
500-104630-12	VAP-HPT22(14-16)-120115	Dissolved	Water	7470A	314848
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	7470A	314846
500-104630-13	VAP-HPT22(18-21)-120115	Dissolved	Water	7470A	314848
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	7470A	314846
500-104630-14	VAP-HPT22(24-27)-120115	Dissolved	Water	7470A	314848
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	7470A	314846
500-104630-15	VAP-HPT23(8-11)-120115	Dissolved	Water	7470A	314848
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	7470A	314846
LCS 500-314846/13-A	Lab Control Sample	Total/NA	Water	7470A	314846
LCS 500-314848/13-A	Lab Control Sample	Total/NA	Water	7470A	314848
MB 500-314846/12-A	Method Blank	Total/NA	Water	7470A	314846
MB 500-314848/12-A	Method Blank	Total/NA	Water	7470A	314848

Analysis Batch: 315146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-12	VAP-HPT22(14-16)-120115	Dissolved	Water	6010C	314803
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-12 DU	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-12 MS	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-12 MSD	VAP-HPT22(14-16)-120115	Total/NA	Water	6010C	314803
500-104630-13	VAP-HPT22(18-21)-120115	Dissolved	Water	6010C	314803
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	6010C	314803
500-104630-14	VAP-HPT22(24-27)-120115	Dissolved	Water	6010C	314803
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	6010C	314803
500-104630-15	VAP-HPT23(8-11)-120115	Dissolved	Water	6010C	314803
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	6010C	314803
LCS 500-314803/2-A	Lab Control Sample	Total/NA	Water	6010C	314803
MB 500-314803/1-A	Method Blank	Total/NA	Water	6010C	314803

Metals (Continued)

Analysis Batch: 315276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	6010C	314800
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	6010C	314800
500-104630-7	VAP-HPT18(19-22)-113015	Dissolved	Water	6010C	314800
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	6010C	314800
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	6010C	314800
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	6010C	314800
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	6010C	314800
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	6010C	314800

General Chemistry

Prep Batch: 315975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-2	VAP-HPT19(6-8)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-2 MS	VAP-HPT19(6-8)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-2 MSD	VAP-HPT19(6-8)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-3	VAP-HPT19(9-11)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-4	VAP-HPT19(12-14)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	SM 4500 NH3 B	
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	SM 4500 NH3 B	
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	SM 4500 NH3 B	
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	SM 4500 NH3 B	
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	SM 4500 NH3 B	
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	SM 4500 NH3 B	
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	SM 4500 NH3 B	
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	SM 4500 NH3 B	
LCS 500-315975/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-315975/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 316135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-2	VAP-HPT19(6-8)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-2 MS	VAP-HPT19(6-8)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-2 MSD	VAP-HPT19(6-8)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-3	VAP-HPT19(9-11)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-12	VAP-HPT22(14-16)-120115	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-13	VAP-HPT22(18-21)-120115	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-15	VAP-HPT23(8-11)-120115	Total/NA	Water	SM 4500 NH3 G	315975
LCS 500-315975/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	315975
MB 500-315975/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	315975

Analysis Batch: 316141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-4	VAP-HPT19(12-14)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-5	VAP-HPT18(12-14)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-6	VAP-HPT18(16-18)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-7	VAP-HPT18(19-22)-113015	Total/NA	Water	SM 4500 NH3 G	315975

General Chemistry (Continued)

Analysis Batch: 316141 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104630-8	VAP-HPT18(25-27)-113015	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-9	VAP-HPT21(8-10)-120115	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-10	VAP-HPT21(12-14)-120115	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-11	VAP-HPT21(16-18)-120115	Total/NA	Water	SM 4500 NH3 G	315975
500-104630-14	VAP-HPT22(24-27)-120115	Total/NA	Water	SM 4500 NH3 G	315975
LCS 500-315975/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	315975
MB 500-315975/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	315975

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(75-120)	(75-120)	(75-125)	(75-120)
500-104630-1	TB-1(1201115)	80	105	113	98
500-104630-2	VAP-HPT19(6-8)-113015	80	102	112	98
500-104630-2 MS	VAP-HPT19(6-8)-113015	90	98	110	94
500-104630-2 MSD	VAP-HPT19(6-8)-113015	87	95	101	93
500-104630-3	VAP-HPT19(9-11)-113015	79	103	114	97
500-104630-4	VAP-HPT19(12-14)-113015	83	104	111	98
500-104630-5	VAP-HPT18(12-14)-113015	85	97	107	97
500-104630-6	VAP-HPT18(16-18)-113015	89	100	111	96
500-104630-6 - DL	VAP-HPT18(16-18)-113015	84	104	111	99
500-104630-7	VAP-HPT18(19-22)-113015	84	98	109	95
500-104630-8	VAP-HPT18(25-27)-113015	86	101	111	98
500-104630-9	VAP-HPT21(8-10)-120115	89	99	109	97
500-104630-10	VAP-HPT21(12-14)-120115	89	99	108	96
500-104630-10	VAP-HPT21(12-14)-120115	89	100	109	99
500-104630-11	VAP-HPT21(16-18)-120115	89	99	110	97
500-104630-12	VAP-HPT22(14-16)-120115	88	95	107	93
500-104630-12 - DL	VAP-HPT22(14-16)-120115	83	99	104	96
500-104630-13	VAP-HPT22(18-21)-120115	90	97	106	93
500-104630-13 - DL	VAP-HPT22(18-21)-120115	86	100	108	98
500-104630-14	VAP-HPT22(24-27)-120115	88	99	109	96
500-104630-15	VAP-HPT23(8-11)-120115	89	101	111	97
LCS 500-315539/4	Lab Control Sample	90	95	104	93
MB 500-315539/6	Method Blank	78	100	108	98

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-315539/6
Matrix: Water
Analysis Batch: 315539

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/08/15 22:51	1
Benzene	<0.50		0.50	0.15	ug/L			12/08/15 22:51	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/08/15 22:51	1
Bromoform	<1.0		1.0	0.48	ug/L			12/08/15 22:51	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/08/15 22:51	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/08/15 22:51	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/08/15 22:51	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/08/15 22:51	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/08/15 22:51	1
Chloroform	<1.0		1.0	0.37	ug/L			12/08/15 22:51	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/08/15 22:51	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/08/15 22:51	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/08/15 22:51	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/08/15 22:51	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/08/15 22:51	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/08/15 22:51	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/08/15 22:51	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/08/15 22:51	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/08/15 22:51	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/08/15 22:51	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/08/15 22:51	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/08/15 22:51	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/08/15 22:51	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/08/15 22:51	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/08/15 22:51	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/08/15 22:51	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/08/15 22:51	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/08/15 22:51	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/08/15 22:51	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/08/15 22:51	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/08/15 22:51	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/08/15 22:51	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/08/15 22:51	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/08/15 22:51	1
Styrene	<1.0		1.0	0.39	ug/L			12/08/15 22:51	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/08/15 22:51	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/08/15 22:51	1
Toluene	<0.50		0.50	0.15	ug/L			12/08/15 22:51	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/08/15 22:51	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/08/15 22:51	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/08/15 22:51	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/08/15 22:51	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/08/15 22:51	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/08/15 22:51	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/08/15 22:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/08/15 22:51	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/08/15 22:51	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/08/15 22:51	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		75 - 120		12/08/15 22:51	1
Dibromofluoromethane	100		75 - 120		12/08/15 22:51	1
1,2-Dichloroethane-d4 (Surr)	108		75 - 125		12/08/15 22:51	1
Toluene-d8 (Surr)	98		75 - 120		12/08/15 22:51	1

Lab Sample ID: LCS 500-315539/4
Matrix: Water
Analysis Batch: 315539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	43.0		ug/L		86	47 - 131
Benzene	50.0	44.2		ug/L		88	70 - 120
Bromodichloromethane	50.0	47.0		ug/L		94	70 - 127
Bromoform	50.0	47.1		ug/L		94	70 - 135
Bromomethane	50.0	65.1		ug/L		130	30 - 170
Carbon disulfide	50.0	44.8		ug/L		90	61 - 120
Carbon tetrachloride	50.0	46.1		ug/L		92	70 - 136
Chlorobenzene	50.0	46.5		ug/L		93	70 - 120
Chloroethane	50.0	52.2		ug/L		104	40 - 150
Chloroform	50.0	46.6		ug/L		93	70 - 120
Chloromethane	50.0	47.1		ug/L		94	45 - 140
cis-1,2-Dichloroethene	50.0	44.3		ug/L		89	70 - 120
cis-1,3-Dichloropropene	50.0	41.8		ug/L		84	70 - 122
Cyclohexane	50.0	46.6		ug/L		93	60 - 133
Dibromochloromethane	50.0	46.7		ug/L		93	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	43.1		ug/L		86	59 - 139
1,2-Dibromoethane	50.0	43.8		ug/L		88	70 - 124
1,2-Dichlorobenzene	50.0	43.5		ug/L		87	70 - 123
1,3-Dichlorobenzene	50.0	42.3		ug/L		85	70 - 122
1,4-Dichlorobenzene	50.0	42.4		ug/L		85	70 - 120
Dichlorodifluoromethane	50.0	46.8		ug/L		94	30 - 150
1,1-Dichloroethane	50.0	49.3		ug/L		99	70 - 127
1,2-Dichloroethane	50.0	49.8		ug/L		100	66 - 132
1,1-Dichloroethene	50.0	44.9		ug/L		90	68 - 121
1,2-Dichloropropane	50.0	49.7		ug/L		99	70 - 127
Ethylbenzene	50.0	44.5		ug/L		89	70 - 125
2-Hexanone	50.0	39.2		ug/L		78	53 - 140
Isopropylbenzene	50.0	43.0		ug/L		86	70 - 132
Methyl acetate	250	215		ug/L		86	56 - 131
Methylcyclohexane	50.0	44.5		ug/L		89	60 - 140
Methylene Chloride	50.0	45.4		ug/L		91	70 - 120
Methyl Ethyl Ketone	50.0	50.8		ug/L		102	51 - 134
methyl isobutyl ketone	50.0	40.0		ug/L		80	53 - 135
Methyl tert-butyl ether	50.0	39.8		ug/L		80	65 - 120
Styrene	50.0	45.8		ug/L		92	70 - 120
1,1,2,2-Tetrachloroethane	50.0	41.9		ug/L		84	68 - 133
Tetrachloroethene	50.0	45.3		ug/L		91	70 - 129
Toluene	50.0	44.5		ug/L		89	70 - 120
trans-1,2-Dichloroethene	50.0	45.1		ug/L		90	70 - 120
trans-1,3-Dichloropropene	50.0	42.4		ug/L		85	70 - 123
1,2,4-Trichlorobenzene	50.0	38.1		ug/L		76	70 - 125
1,1,1-Trichloroethane	50.0	45.0		ug/L		90	70 - 125
1,1,2-Trichloroethane	50.0	46.6		ug/L		93	70 - 125
Trichloroethene	50.0	43.7		ug/L		87	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-315539/4
Matrix: Water
Analysis Batch: 315539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	46.7		ug/L		93	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	46.3		ug/L		93	64 - 120
Vinyl chloride	50.0	51.5		ug/L		103	63 - 127
Xylenes, Total	100	88.2		ug/L		88	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*
Dibromofluoromethane	*95*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 125*
Toluene-d8 (Surr)	*93*		*75 - 120*

Lab Sample ID: 500-104630-2 MS
Matrix: Water
Analysis Batch: 315539

Client Sample ID: VAP-HPT19(6-8)-113015
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<5.0		50.0	47.6		ug/L		95	47 - 131
Benzene	<0.50		50.0	46.1		ug/L		92	70 - 120
Bromodichloromethane	<1.0		50.0	50.6		ug/L		101	70 - 127
Bromoform	<1.0		50.0	51.8		ug/L		104	70 - 135
Bromomethane	<2.0	F2	50.0	31.3		ug/L		63	30 - 170
Carbon disulfide	<2.0		50.0	46.2		ug/L		92	61 - 120
Carbon tetrachloride	<1.0		50.0	46.6		ug/L		93	70 - 136
Chlorobenzene	<1.0		50.0	48.6		ug/L		97	70 - 120
Chloroethane	<1.0		50.0	51.1		ug/L		102	40 - 150
Chloroform	<1.0		50.0	48.7		ug/L		97	70 - 120
Chloromethane	<1.0		50.0	32.1		ug/L		64	45 - 140
cis-1,2-Dichloroethene	<1.0		50.0	47.3		ug/L		95	70 - 120
cis-1,3-Dichloropropene	<1.0		50.0	43.8		ug/L		88	70 - 122
Cyclohexane	<1.0		50.0	47.9		ug/L		96	60 - 133
Dibromochloromethane	<1.0		50.0	50.4		ug/L		101	70 - 120
1,2-Dibromo-3-Chloropropane	<5.0		50.0	45.8		ug/L		92	59 - 139
1,2-Dibromoethane	<1.0		50.0	47.9		ug/L		96	70 - 124
1,2-Dichlorobenzene	<1.0		50.0	45.6		ug/L		91	70 - 123
1,3-Dichlorobenzene	<1.0		50.0	44.0		ug/L		88	70 - 122
1,4-Dichlorobenzene	<1.0		50.0	44.8		ug/L		90	70 - 120
Dichlorodifluoromethane	<2.0		50.0	45.0		ug/L		90	30 - 150
1,1-Dichloroethane	<1.0		50.0	51.8		ug/L		104	70 - 127
1,2-Dichloroethane	<1.0		50.0	54.6		ug/L		109	66 - 132
1,1-Dichloroethene	<1.0		50.0	45.8		ug/L		92	68 - 121
1,2-Dichloropropane	<1.0		50.0	53.6		ug/L		107	70 - 127
Ethylbenzene	<0.50		50.0	46.0		ug/L		92	70 - 125
2-Hexanone	<5.0		50.0	43.0		ug/L		86	53 - 140
Isopropylbenzene	<1.0		50.0	44.0		ug/L		88	70 - 132
Methyl acetate	<5.0		250	234		ug/L		94	56 - 131
Methylcyclohexane	<1.0		50.0	45.2		ug/L		90	60 - 140
Methylene Chloride	<5.0		50.0	47.8		ug/L		96	70 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-104630-2 MS
Matrix: Water
Analysis Batch: 315539

Client Sample ID: VAP-HPT19(6-8)-113015
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	54.2		ug/L		108	51 - 134
methyl isobutyl ketone	<5.0		50.0	43.1		ug/L		86	53 - 135
Methyl tert-butyl ether	<1.0		50.0	44.6		ug/L		89	65 - 120
Styrene	<1.0		50.0	47.9		ug/L		96	70 - 120
1,1,2,2-Tetrachloroethane	<1.0		50.0	45.9		ug/L		92	68 - 133
Tetrachloroethene	<1.0		50.0	45.0		ug/L		90	70 - 129
Toluene	<0.50		50.0	46.5		ug/L		93	70 - 120
trans-1,2-Dichloroethene	<1.0		50.0	47.0		ug/L		94	70 - 120
trans-1,3-Dichloropropene	<1.0		50.0	45.4		ug/L		91	70 - 123
1,2,4-Trichlorobenzene	<1.0		50.0	41.3		ug/L		83	70 - 125
1,1,1-Trichloroethane	<1.0		50.0	46.3		ug/L		93	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	50.0		ug/L		100	70 - 125
Trichloroethene	<0.50		50.0	44.3		ug/L		89	70 - 122
Trichlorofluoromethane	<1.0		50.0	45.4		ug/L		91	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	47.2		ug/L		94	64 - 120
Vinyl chloride	0.57		50.0	48.0		ug/L		95	63 - 127
Xylenes, Total	<1.0		100	91.4		ug/L		91	70 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*
Dibromofluoromethane	*98*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 125*
Toluene-d8 (Surr)	*94*		*75 - 120*

Lab Sample ID: 500-104630-2 MSD
Matrix: Water
Analysis Batch: 315539

Client Sample ID: VAP-HPT19(6-8)-113015
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<5.0		50.0	48.2		ug/L		96	47 - 131	1	20
Benzene	<0.50		50.0	45.2		ug/L		90	70 - 120	2	20
Bromodichloromethane	<1.0		50.0	47.1		ug/L		94	70 - 127	7	20
Bromoform	<1.0		50.0	47.8		ug/L		96	70 - 135	8	20
Bromomethane	<2.0	F2	50.0	46.2	F2	ug/L		92	30 - 170	38	20
Carbon disulfide	<2.0		50.0	45.4		ug/L		91	61 - 120	2	20
Carbon tetrachloride	<1.0		50.0	46.8		ug/L		94	70 - 136	0	20
Chlorobenzene	<1.0		50.0	47.8		ug/L		96	70 - 120	2	20
Chloroethane	<1.0		50.0	51.3		ug/L		103	40 - 150	0	20
Chloroform	<1.0		50.0	46.6		ug/L		93	70 - 120	4	20
Chloromethane	<1.0		50.0	37.8		ug/L		76	45 - 140	16	20
cis-1,2-Dichloroethene	<1.0		50.0	45.4		ug/L		91	70 - 120	4	20
cis-1,3-Dichloropropene	<1.0		50.0	41.0		ug/L		82	70 - 122	7	20
Cyclohexane	<1.0		50.0	48.0		ug/L		96	60 - 133	0	20
Dibromochloromethane	<1.0		50.0	48.4		ug/L		97	70 - 120	4	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	41.8		ug/L		84	59 - 139	9	20
1,2-Dibromoethane	<1.0		50.0	45.2		ug/L		90	70 - 124	6	20
1,2-Dichlorobenzene	<1.0		50.0	46.8		ug/L		94	70 - 123	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-104630-2 MSD
Matrix: Water
Analysis Batch: 315539

Client Sample ID: VAP-HPT19(6-8)-113015
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	44.1		ug/L		88	70 - 122	0	20
1,4-Dichlorobenzene	<1.0		50.0	44.5		ug/L		89	70 - 120	1	20
Dichlorodifluoromethane	<2.0		50.0	47.6		ug/L		95	30 - 150	6	20
1,1-Dichloroethane	<1.0		50.0	50.0		ug/L		100	70 - 127	4	20
1,2-Dichloroethane	<1.0		50.0	50.1		ug/L		100	66 - 132	9	20
1,1-Dichloroethene	<1.0		50.0	44.6		ug/L		89	68 - 121	3	20
1,2-Dichloropropane	<1.0		50.0	50.5		ug/L		101	70 - 127	6	20
Ethylbenzene	<0.50		50.0	45.7		ug/L		91	70 - 125	1	20
2-Hexanone	<5.0		50.0	41.0		ug/L		82	53 - 140	5	20
Isopropylbenzene	<1.0		50.0	47.0		ug/L		94	70 - 132	7	20
Methyl acetate	<5.0		250	209		ug/L		84	56 - 131	11	20
Methylcyclohexane	<1.0		50.0	46.2		ug/L		92	60 - 140	2	20
Methylene Chloride	<5.0		50.0	44.9		ug/L		90	70 - 120	6	20
Methyl Ethyl Ketone	<5.0		50.0	49.9		ug/L		100	51 - 134	8	20
methyl isobutyl ketone	<5.0		50.0	39.2		ug/L		78	53 - 135	9	20
Methyl tert-butyl ether	<1.0		50.0	39.9		ug/L		80	65 - 120	11	20
Styrene	<1.0		50.0	46.4		ug/L		93	70 - 120	3	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	45.6		ug/L		91	68 - 133	1	20
Tetrachloroethene	<1.0		50.0	45.5		ug/L		91	70 - 129	1	20
Toluene	<0.50		50.0	45.2		ug/L		90	70 - 120	3	20
trans-1,2-Dichloroethene	<1.0		50.0	45.6		ug/L		91	70 - 120	3	20
trans-1,3-Dichloropropene	<1.0		50.0	43.4		ug/L		87	70 - 123	4	20
1,2,4-Trichlorobenzene	<1.0		50.0	39.0		ug/L		78	70 - 125	6	20
1,1,1-Trichloroethane	<1.0		50.0	46.2		ug/L		92	70 - 125	0	20
1,1,2-Trichloroethane	<1.0		50.0	46.8		ug/L		94	70 - 125	7	20
Trichloroethene	<0.50		50.0	43.9		ug/L		88	70 - 122	1	20
Trichlorofluoromethane	<1.0		50.0	46.5		ug/L		93	65 - 134	3	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	46.9		ug/L		94	64 - 120	0	20
Vinyl chloride	0.57		50.0	51.2		ug/L		101	63 - 127	6	20
Xylenes, Total	<1.0		100	90.8		ug/L		91	70 - 120	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*75 - 120*
Dibromofluoromethane	*95*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*
Toluene-d8 (Surr)	*93*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-314800/1-A
Matrix: Water
Analysis Batch: 314956

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314800

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:07	12/02/15 18:55	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:07	12/02/15 18:55	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 18:55	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-314800/1-A
Matrix: Water
Analysis Batch: 314956

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314800

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.010		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 18:55	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:07	12/02/15 18:55	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:07	12/02/15 18:55	1
Calcium	<0.20		0.20	0.059	mg/L		12/02/15 09:07	12/02/15 18:55	1
Chromium	<0.010		0.010	0.0024	mg/L		12/02/15 09:07	12/02/15 18:55	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:07	12/02/15 18:55	1
Copper	<0.010		0.010	0.0022	mg/L		12/02/15 09:07	12/02/15 18:55	1
Iron	<0.20		0.20	0.10	mg/L		12/02/15 09:07	12/02/15 18:55	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:07	12/02/15 18:55	1
Magnesium	<0.10		0.10	0.034	mg/L		12/02/15 09:07	12/02/15 18:55	1
Manganese	<0.010		0.010	0.0034	mg/L		12/02/15 09:07	12/02/15 18:55	1
Nickel	<0.010		0.010	0.0031	mg/L		12/02/15 09:07	12/02/15 18:55	1
Potassium	<0.50		0.50	0.16	mg/L		12/02/15 09:07	12/02/15 18:55	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:07	12/02/15 18:55	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:07	12/02/15 18:55	1
Sodium	<1.0		1.0	0.43	mg/L		12/02/15 09:07	12/02/15 18:55	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:07	12/02/15 18:55	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:07	12/02/15 18:55	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:07	12/02/15 18:55	1

Lab Sample ID: LCS 500-314800/2-A
Matrix: Water
Analysis Batch: 314956

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314800

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.92		mg/L		96	80 - 120
Antimony	0.500	0.473		mg/L		95	80 - 120
Arsenic	0.100	0.0937		mg/L		94	80 - 120
Barium	2.00	2.00		mg/L		100	80 - 120
Beryllium	0.0500	0.0492		mg/L		98	80 - 120
Cadmium	0.0500	0.0473		mg/L		95	80 - 120
Calcium	10.0	9.63		mg/L		96	80 - 120
Chromium	0.200	0.192		mg/L		96	80 - 120
Cobalt	0.500	0.488		mg/L		98	80 - 120
Copper	0.250	0.241		mg/L		96	80 - 120
Iron	1.00	0.962		mg/L		96	80 - 120
Lead	0.100	0.0943		mg/L		94	80 - 120
Magnesium	10.0	9.69		mg/L		97	80 - 120
Manganese	0.500	0.487		mg/L		97	80 - 120
Nickel	0.500	0.482		mg/L		96	80 - 120
Potassium	10.0	9.86		mg/L		99	80 - 120
Selenium	0.100	0.0882		mg/L		88	80 - 120
Silver	0.0500	0.0455		mg/L		91	80 - 120
Sodium	10.0	9.89		mg/L		99	80 - 120
Thallium	0.100	0.0885		mg/L		89	80 - 120
Vanadium	0.500	0.486		mg/L		97	80 - 120
Zinc	0.500	0.476		mg/L		95	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-104630-2 MS — **Client Sample ID: VAP-HPT19(6-8)-113015**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314956 — **Prep Batch: 314800**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.55		2.00	2.41		mg/L		93	75 - 125
Antimony	<0.020		0.500	0.450		mg/L		90	75 - 125
Arsenic	0.0068	J	0.100	0.0989		mg/L		92	75 - 125
Barium	0.34		2.00	2.15		mg/L		91	75 - 125
Beryllium	<0.0040		0.0500	0.0463		mg/L		93	75 - 125
Cadmium	0.0024		0.0500	0.0467		mg/L		89	75 - 125
Calcium	98		10.0	107	4	mg/L		88	75 - 125
Chromium	0.0028	J	0.200	0.180		mg/L		89	75 - 125
Cobalt	0.0014	J	0.500	0.467		mg/L		93	75 - 125
Copper	0.028		0.250	0.255		mg/L		91	75 - 125
Iron	18		1.00	19.1	4	mg/L		101	75 - 125
Lead	0.063		0.100	0.153		mg/L		90	75 - 125
Magnesium	52		10.0	61.1	4	mg/L		92	75 - 125
Manganese	0.50		0.500	0.941		mg/L		89	75 - 125
Nickel	0.021		0.500	0.479		mg/L		92	75 - 125
Potassium	38		10.0	46.4		mg/L		89	75 - 125
Selenium	<0.010		0.100	0.0847		mg/L		85	75 - 125
Silver	<0.0050		0.0500	0.0444		mg/L		89	75 - 125
Sodium	110		10.0	116	4	mg/L		83	75 - 125
Thallium	<0.010		0.100	0.0799		mg/L		80	75 - 125
Vanadium	0.0061		0.500	0.458		mg/L		90	75 - 125
Zinc	0.10		0.500	0.574		mg/L		94	75 - 125

Lab Sample ID: 500-104630-2 MSD — **Client Sample ID: VAP-HPT19(6-8)-113015**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314956 — **Prep Batch: 314800**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	0.55		2.00	2.66		mg/L		105	75 - 125	10	20
Antimony	<0.020		0.500	0.496		mg/L		99	75 - 125	10	20
Arsenic	0.0068	J	0.100	0.108		mg/L		101	75 - 125	9	20
Barium	0.34		2.00	2.33		mg/L		100	75 - 125	8	20
Beryllium	<0.0040		0.0500	0.0511		mg/L		102	75 - 125	10	20
Cadmium	0.0024		0.0500	0.0508		mg/L		97	75 - 125	8	20
Calcium	98		10.0	115	4	mg/L		168	75 - 125	7	20
Chromium	0.0028	J	0.200	0.198		mg/L		98	75 - 125	9	20
Cobalt	0.0014	J	0.500	0.515		mg/L		103	75 - 125	10	20
Copper	0.028		0.250	0.283		mg/L		102	75 - 125	10	20
Iron	18		1.00	20.7	4	mg/L		261	75 - 125	8	20
Lead	0.063		0.100	0.166		mg/L		103	75 - 125	8	20
Magnesium	52		10.0	65.5	4	mg/L		136	75 - 125	7	20
Manganese	0.50		0.500	1.02		mg/L		104	75 - 125	8	20
Nickel	0.021		0.500	0.527		mg/L		101	75 - 125	10	20
Potassium	38		10.0	49.6		mg/L		120	75 - 125	7	20
Selenium	<0.010		0.100	0.0899		mg/L		90	75 - 125	6	20
Silver	<0.0050		0.0500	0.0485		mg/L		97	75 - 125	9	20
Sodium	110		10.0	124	4	mg/L		163	75 - 125	7	20
Thallium	<0.010		0.100	0.0878		mg/L		88	75 - 125	9	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-104630-2 MSD — **Client Sample ID: VAP-HPT19(6-8)-113015**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314956 — **Prep Batch: 314800**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vanadium	0.0061		0.500	0.500		mg/L		99	75 - 125	9	20
Zinc	0.10		0.500	0.633		mg/L		106	75 - 125	10	20

Lab Sample ID: 500-104630-2 DU — **Client Sample ID: VAP-HPT19(6-8)-113015**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314956 — **Prep Batch: 314800**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	0.55		0.562		mg/L		3	20
Antimony	<0.020		<0.020		mg/L		NC	20
Arsenic	0.0068	J	0.00721	J	mg/L		6	20
Barium	0.34		0.344		mg/L		2	20
Beryllium	<0.0040		<0.0040		mg/L		NC	20
Cadmium	0.0024		0.00227		mg/L		4	20
Calcium	98		101		mg/L		2	20
Chromium	0.0028	J	0.00388	J F5	mg/L		32	20
Cobalt	0.0014	J	0.00146	J	mg/L		5	20
Copper	0.028		0.0300		mg/L		6	20
Iron	18		18.7		mg/L		3	20
Lead	0.063		0.0659		mg/L		4	20
Magnesium	52		53.2		mg/L		3	20
Manganese	0.50		0.507		mg/L		2	20
Nickel	0.021		0.0213		mg/L		4	20
Potassium	38		38.5		mg/L		2	20
Selenium	<0.010		<0.010		mg/L		NC	20
Silver	<0.0050		<0.0050		mg/L		NC	20
Sodium	110		111		mg/L		3	20
Thallium	<0.010		<0.010		mg/L		NC	20
Vanadium	0.0061		0.00586		mg/L		4	20
Zinc	0.10		0.107		mg/L		3	20

Lab Sample ID: MB 500-314803/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314952 — **Prep Batch: 314803**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/02/15 09:14	12/02/15 18:43	1
Antimony	<0.020		0.020	0.0064	mg/L		12/02/15 09:14	12/02/15 18:43	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 18:43	1
Barium	<0.010		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 18:43	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/02/15 09:14	12/02/15 18:43	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/02/15 09:14	12/02/15 18:43	1
Calcium	<0.20		0.20	0.059	mg/L		12/02/15 09:14	12/02/15 18:43	1
Chromium	<0.010		0.010	0.0024	mg/L		12/02/15 09:14	12/02/15 18:43	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/02/15 09:14	12/02/15 18:43	1
Copper	<0.010		0.010	0.0022	mg/L		12/02/15 09:14	12/02/15 18:43	1
Iron	<0.20		0.20	0.10	mg/L		12/02/15 09:14	12/02/15 18:43	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/02/15 09:14	12/02/15 18:43	1
Manganese	<0.010		0.010	0.0034	mg/L		12/02/15 09:14	12/02/15 18:43	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-314803/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314952 — **Prep Batch: 314803**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<0.010		0.010	0.0031	mg/L		12/02/15 09:14	12/02/15 18:43	1
Potassium	<0.50		0.50	0.16	mg/L		12/02/15 09:14	12/02/15 18:43	1
Selenium	<0.010		0.010	0.0046	mg/L		12/02/15 09:14	12/02/15 18:43	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/02/15 09:14	12/02/15 18:43	1
Sodium	<1.0		1.0	0.43	mg/L		12/02/15 09:14	12/02/15 18:43	1
Thallium	<0.010		0.010	0.0028	mg/L		12/02/15 09:14	12/02/15 18:43	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/02/15 09:14	12/02/15 18:43	1
Zinc	<0.020		0.020	0.0090	mg/L		12/02/15 09:14	12/02/15 18:43	1

Lab Sample ID: MB 500-314803/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315146 — **Prep Batch: 314803**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	<0.10		0.10	0.034	mg/L		12/02/15 09:14	12/03/15 20:44	1

Lab Sample ID: LCS 500-314803/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314952 — **Prep Batch: 314803**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.80		mg/L		90	80 - 120
Antimony	0.500	0.468		mg/L		94	80 - 120
Arsenic	0.100	0.0894		mg/L		89	80 - 120
Barium	2.00	1.90		mg/L		95	80 - 120
Beryllium	0.0500	0.0462		mg/L		92	80 - 120
Cadmium	0.0500	0.0466		mg/L		93	80 - 120
Calcium	10.0	9.37		mg/L		94	80 - 120
Chromium	0.200	0.196		mg/L		98	80 - 120
Cobalt	0.500	0.487		mg/L		97	80 - 120
Copper	0.250	0.237		mg/L		95	80 - 120
Iron	1.00	1.02		mg/L		102	80 - 120
Lead	0.100	0.0889		mg/L		89	80 - 120
Manganese	0.500	0.464		mg/L		93	80 - 120
Nickel	0.500	0.473		mg/L		95	80 - 120
Potassium	10.0	9.25		mg/L		92	80 - 120
Selenium	0.100	0.0939		mg/L		94	80 - 120
Silver	0.0500	0.0465		mg/L		93	80 - 120
Sodium	10.0	9.40		mg/L		94	80 - 120
Thallium	0.100	0.0861		mg/L		86	80 - 120
Vanadium	0.500	0.485		mg/L		97	80 - 120
Zinc	0.500	0.469		mg/L		94	80 - 120

Lab Sample ID: LCS 500-314803/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315146 — **Prep Batch: 314803**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	10.0	9.21		mg/L		92	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Lab Sample ID: 500-104630-12 MS — **Client Sample ID: VAP-HPT22(14-16)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314952 — **Prep Batch: 314803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	<0.20		2.00	2.09		mg/L		105	75 - 125
Antimony	0.016	J	0.500	0.490		mg/L		95	75 - 125
Arsenic	0.017		0.100	0.129		mg/L		112	75 - 125
Barium	0.054		2.00	1.97		mg/L		96	75 - 125
Beryllium	<0.0040		0.0500	0.0477		mg/L		95	75 - 125
Cadmium	0.0012	J	0.0500	0.0494		mg/L		96	75 - 125
Calcium	200		10.0	220	4	mg/L		221	75 - 125
Chromium	0.0073	J	0.200	0.209		mg/L		101	75 - 125
Cobalt	<0.0050		0.500	0.500		mg/L		100	75 - 125
Copper	0.0090	J	0.250	0.249		mg/L		96	75 - 125
Iron	2.2	F1	1.00	4.21	F1	mg/L		204	75 - 125
Lead	0.014		0.100	0.118		mg/L		104	75 - 125
Manganese	0.047		0.500	0.638		mg/L		118	75 - 125
Nickel	0.023		0.500	0.512		mg/L		98	75 - 125
Potassium	32		10.0	43.1		mg/L		112	75 - 125
Selenium	<0.010	F1 F2	0.100	0.0265	F1	mg/L		27	75 - 125
Silver	<0.0050		0.0500	0.0443		mg/L		89	75 - 125
Sodium	190		10.0	207	4	mg/L		208	75 - 125
Thallium	<0.010		0.100	0.0796		mg/L		80	75 - 125
Vanadium	0.012		0.500	0.489		mg/L		95	75 - 125
Zinc	0.038		0.500	0.589		mg/L		110	75 - 125

Lab Sample ID: 500-104630-12 MS — **Client Sample ID: VAP-HPT22(14-16)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315146 — **Prep Batch: 314803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	0.17		10.0	9.41		mg/L		92	75 - 125

Lab Sample ID: 500-104630-12 MSD — **Client Sample ID: VAP-HPT22(14-16)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314952 — **Prep Batch: 314803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	<0.20		2.00	2.07		mg/L		103	75 - 125	1	20
Antimony	0.016	J	0.500	0.482		mg/L		93	75 - 125	2	20
Arsenic	0.017		0.100	0.129		mg/L		112	75 - 125	0	20
Barium	0.054		2.00	1.92		mg/L		93	75 - 125	2	20
Beryllium	<0.0040		0.0500	0.0452		mg/L		90	75 - 125	5	20
Cadmium	0.0012	J	0.0500	0.0486		mg/L		95	75 - 125	2	20
Calcium	200		10.0	214	4	mg/L		165	75 - 125	3	20
Chromium	0.0073	J	0.200	0.208		mg/L		100	75 - 125	1	20
Cobalt	<0.0050		0.500	0.491		mg/L		98	75 - 125	2	20
Copper	0.0090	J	0.250	0.249		mg/L		96	75 - 125	0	20
Iron	2.2	F1	1.00	4.14	F1	mg/L		197	75 - 125	2	20
Lead	0.014		0.100	0.119		mg/L		105	75 - 125	1	20
Manganese	0.047		0.500	0.632		mg/L		117	75 - 125	1	20
Nickel	0.023		0.500	0.506		mg/L		97	75 - 125	1	20
Potassium	32		10.0	42.2		mg/L		103	75 - 125	2	20
Selenium	<0.010	F1 F2	0.100	0.0328	F1 F2	mg/L		33	75 - 125	21	20
Silver	<0.0050		0.0500	0.0461		mg/L		92	75 - 125	4	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-104630-12 MSD — **Client Sample ID: VAP-HPT22(14-16)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314952 — **Prep Batch: 314803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	190		10.0	198	4	mg/L		116	75 - 125	5	20
Thallium	<0.010		0.100	0.0788		mg/L		79	75 - 125	1	20
Vanadium	0.012		0.500	0.486		mg/L		95	75 - 125	1	20
Zinc	0.038		0.500	0.582		mg/L		109	75 - 125	1	20

Lab Sample ID: 500-104630-12 MSD — **Client Sample ID: VAP-HPT22(14-16)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315146 — **Prep Batch: 314803**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	0.17		10.0	9.39		mg/L		92	75 - 125	0	20

Lab Sample ID: 500-104630-12 DU — **Client Sample ID: VAP-HPT22(14-16)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 314952 — **Prep Batch: 314803**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	<0.20		0.202		mg/L		NC	20
Antimony	0.016	J	0.0132	J F5	mg/L		21	20
Arsenic	0.017		0.0189		mg/L		10	20
Barium	0.054		0.0604		mg/L		10	20
Beryllium	<0.0040		<0.0040		mg/L		NC	20
Cadmium	0.0012	J	0.00104	J	mg/L		11	20
Calcium	200		199		mg/L		0.6	20
Chromium	0.0073	J	0.0181	F3	mg/L		85	20
Cobalt	<0.0050		<0.0050		mg/L		NC	20
Copper	0.0090	J	0.0162	F5	mg/L		57	20
Iron	2.2	F1	3.19	F3	mg/L		38	20
Lead	0.014		0.0202	F3	mg/L		38	20
Manganese	0.047		0.158	F3	mg/L		108	20
Nickel	0.023		0.0249		mg/L		10	20
Potassium	32		31.7		mg/L		0.6	20
Selenium	<0.010	F1 F2	0.00996	J	mg/L		NC	20
Silver	<0.0050		<0.0050		mg/L		NC	20
Sodium	190		184		mg/L		1	20
Thallium	<0.010		<0.010		mg/L		NC	20
Vanadium	0.012		0.0143		mg/L		17	20
Zinc	0.038		0.0911	F3	mg/L		82	20

Lab Sample ID: 500-104630-12 DU — **Client Sample ID: VAP-HPT22(14-16)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315146 — **Prep Batch: 314803**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Magnesium	0.17		0.363	F3	mg/L		71	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-314846/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315006 — **Prep Batch: 314846**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 10:10	1

Lab Sample ID: LCS 500-314846/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315006 — **Prep Batch: 314846**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00194		mg/L		97	80 - 120

Lab Sample ID: MB 500-314848/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315006 — **Prep Batch: 314848**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/02/15 13:45	12/03/15 08:45	1

Lab Sample ID: LCS 500-314848/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315006 — **Prep Batch: 314848**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00204		mg/L		102	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-315975/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316135 — **Prep Batch: 315975**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0900	J	0.20	0.043	mg/L		12/10/15 21:15	12/11/15 01:58	1

Lab Sample ID: MB 500-315975/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316141 — **Prep Batch: 315975**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0640	J	0.20	0.043	mg/L		12/10/15 21:15	12/11/15 19:16	1

Lab Sample ID: LCS 500-315975/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316135 — **Prep Batch: 315975**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.76		mg/L		110	80 - 120

Method: SM 4500 NH3 G - Ammonia (Continued)

Lab Sample ID: LCS 500-315975/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316141 — **Prep Batch: 315975**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia			2.50	2.66		mg/L		106	80 - 120		

Lab Sample ID: 500-104630-2 MS — **Client Sample ID: VAP-HPT19(6-8)-113015**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316135 — **Prep Batch: 315975**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia	19	B	2.50	20.6	4	mg/L		45	75 - 125		

Lab Sample ID: 500-104630-2 MSD — **Client Sample ID: VAP-HPT19(6-8)-113015**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316135 — **Prep Batch: 315975**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	19	B	2.50	20.5	4	mg/L		43	75 - 125	0	20

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: TB-1(1201115)
Lab Sample ID: 500-104630-1
Date Collected: 11/30/15 00:00
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/08/15 23:18	EMA	TAL CHI

Client Sample ID: VAP-HPT19(6-8)-113015
Lab Sample ID: 500-104630-2
Date Collected: 11/30/15 09:40
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/08/15 23:46	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 19:31	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 19:11	PJ1	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:15	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:27	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	316135	12/11/15 02:03	HMW	TAL CHI

Client Sample ID: VAP-HPT19(9-11)-113015
Lab Sample ID: 500-104630-3
Date Collected: 11/30/15 10:20
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 00:14	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 19:39	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 19:35	PJ1	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:17	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:29	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	316135	12/11/15 02:12	HMW	TAL CHI

Client Sample ID: VAP-HPT19(12-14)-113015
Lab Sample ID: 500-104630-4
Date Collected: 11/30/15 10:55
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 00:42	EMA	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT19(12-14)-113015 — Lab Sample ID: 500-104630-4

Date Collected: 11/30/15 10:55 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 19:48	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 19:43	PJ1	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:19	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:31	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	316141	12/11/15 19:21	HMW	TAL CHI

Client Sample ID: VAP-HPT18(12-14)-113015 — Lab Sample ID: 500-104630-5

Date Collected: 11/30/15 11:45 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	315539	12/09/15 07:12	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 20:04	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 19:59	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 15:50	KML	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:21	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:33	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	316141	12/11/15 19:24	HMW	TAL CHI

Client Sample ID: VAP-HPT18(16-18)-113015 — Lab Sample ID: 500-104630-6

Date Collected: 11/30/15 12:30 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	315539	12/09/15 04:25	EMA	TAL CHI
Total/NA	Analysis	8260B	DL	20	315539	12/09/15 04:52	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 20:15	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 20:10	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 15:55	KML	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(16-18)-113015 — Lab Sample ID: 500-104630-6

Date Collected: 11/30/15 12:30 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:23	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:35	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	316141	12/11/15 19:27	HMW	TAL CHI

Client Sample ID: VAP-HPT18(19-22)-113015 — Lab Sample ID: 500-104630-7

Date Collected: 11/30/15 13:15 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	315539	12/09/15 07:40	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 20:26	PJ1	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315276	12/04/15 16:06	KML	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 20:20	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 16:00	KML	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:25	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:37	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	316141	12/11/15 19:30	HMW	TAL CHI

Client Sample ID: VAP-HPT18(25-27)-113015 — Lab Sample ID: 500-104630-8

Date Collected: 11/30/15 14:10 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 01:10	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 20:37	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 20:32	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 16:11	KML	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:27	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT18(25-27)-113015

Lab Sample ID: 500-104630-8
Date Collected: 11/30/15 14:10
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	315006	12/03/15 10:39	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	316141	12/11/15 19:33	HMW	TAL CHI

Client Sample ID: VAP-HPT21(8-10)-120115

Lab Sample ID: 500-104630-9
Date Collected: 12/01/15 09:15
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 01:38	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 20:47	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 20:42	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 16:24	KML	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:29	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:41	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	316141	12/11/15 19:35	HMW	TAL CHI

Client Sample ID: VAP-HPT21(12-14)-120115

Lab Sample ID: 500-104630-10
Date Collected: 12/01/15 09:55
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 03:29	EMA	TAL CHI
Total/NA	Analysis	8260B		5	315539	12/09/15 03:57	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 21:03	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 20:59	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 16:29	KML	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:31	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:47	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	316141	12/11/15 19:38	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT21(16-18)-120115 — Lab Sample ID: 500-104630-11

Date Collected: 12/01/15 10:40 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 02:05	EMA	TAL CHI
Dissolved	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314956	12/02/15 21:14	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314956	12/02/15 21:09	PJ1	TAL CHI
Total/NA	Prep	3010A			314800	12/02/15 09:07	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 16:33	KML	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:37	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:49	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	316141	12/11/15 19:41	HMW	TAL CHI

Client Sample ID: VAP-HPT22(14-16)-120115 — Lab Sample ID: 500-104630-12

Date Collected: 12/01/15 11:40 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	315539	12/09/15 05:20	EMA	TAL CHI
Total/NA	Analysis	8260B	DL	50	315539	12/09/15 05:48	EMA	TAL CHI
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315146	12/03/15 21:23	PJ1	TAL CHI
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314952	12/02/15 19:21	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315146	12/03/15 20:53	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314952	12/02/15 18:59	PJ1	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:38	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:51	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	316135	12/11/15 02:43	HMW	TAL CHI

Client Sample ID: VAP-HPT22(18-21)-120115 — Lab Sample ID: 500-104630-13

Date Collected: 12/01/15 12:15 — **Matrix: Water**
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	315539	12/09/15 06:16	EMA	TAL CHI
Total/NA	Analysis	8260B	DL	100	315539	12/09/15 06:44	EMA	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT22(18-21)-120115

Lab Sample ID: 500-104630-13

Date Collected: 12/01/15 12:15
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315146	12/03/15 21:33	PJ1	TAL CHI
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314952	12/02/15 19:31	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315146	12/03/15 21:27	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314952	12/02/15 19:26	PJ1	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:40	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:53	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	316135	12/11/15 02:46	HMW	TAL CHI

Client Sample ID: VAP-HPT22(24-27)-120115

Lab Sample ID: 500-104630-14

Date Collected: 12/01/15 13:00
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 02:33	EMA	TAL CHI
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315146	12/03/15 21:43	PJ1	TAL CHI
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314952	12/02/15 19:41	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315146	12/03/15 21:38	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314952	12/02/15 19:36	PJ1	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:42	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:55	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	316141	12/11/15 19:50	HMW	TAL CHI

Client Sample ID: VAP-HPT23(8-11)-120115

Lab Sample ID: 500-104630-15

Date Collected: 12/01/15 14:05
Matrix: Water
Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315539	12/09/15 03:01	EMA	TAL CHI
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Client Sample ID: VAP-HPT23(8-11)-120115

Lab Sample ID: 500-104630-15

Date Collected: 12/01/15 14:05

Matrix: Water

Date Received: 12/01/15 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6010C		1	315146	12/03/15 21:53	PJ1	TAL CHI
Dissolved	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Dissolved	Analysis	6010C		1	314952	12/02/15 19:58	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315146	12/03/15 21:49	PJ1	TAL CHI
Total/NA	Prep	3010A			314803	12/02/15 09:14	JEF	TAL CHI
Total/NA	Analysis	6010C		1	314952	12/02/15 19:54	PJ1	TAL CHI
Dissolved	Prep	7470A			314848	12/02/15 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315006	12/03/15 09:44	MJD	TAL CHI
Total/NA	Prep	7470A			314846	12/02/15 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315006	12/03/15 10:57	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			315975	12/10/15 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316135	12/11/15 02:52	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104630-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 2

Lab Work Order # 500-104630

Send Results to:

Contact & Company Name: Ellyn Gates ARCADIS

Telephone: (312) 575-3772

Address: 1205 S. LaSalle Ste 1350

Fax: (312) 917-1572

City State Zip: Chicago, IL 60603

E-mail Address: Ellyn.Gates@Arcadis.com

Project Name/Location (City, State): Lakefront Cluster Site Chicago, IL

Project #: CI001805.0002

Sampler's Printed Name: Bruce Evans

Sampler's Signature:

	Preservative	B	C	C	A			
	Filtered (✓)			X				
	# of Containers	2/3	1	1	1			
	Container Information	1	3	3	4			

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: N
G. Other:
H. Other:

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other:
10. Other:

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other:

PARAMETER ANALYSIS & METHOD

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	VOCs	Total Metals	Dissolved Metals (Filtered)	Ammonia				REMARKS
1	TB-1 (120115)	—	—	—	—	W	2							Trip Blank
2	VAP-HPT19(6-8)-113015	11/30/15	09:40		X	W	3	1	1	1				
3	VAP-HPT19(9-11)-113015	11/30/15	10:20		X	W	3	1	1	1				
4	VAP-HPT19(12-14)-113015	11/30/15	10:55		X	W	3	1	1	1				
5	VAP-HPT18(12-14)-113015	11/30/15	11:45		X	W	3	1	1	1				
6	VAP-HPT18(16-18)-113015	11/30/15	12:30		X	W	3	1	1	1				
7	VAP-HPT18(19-22)-113015	11/30/15	13:15		X	W	3	1	1	1				
8	VAP-HPT18(25-27)-113015	11/30/15	14:10		X	W	3	1	1	1				
9	VAP-HPT21(8-10)-120115	12/1/15	09:15		X	W	3	1	1	1				
10	VAP-HPT21(12-14)-120115	12/1/15	09:55		X	W	3	1	1	1				
11	VAP-HPT21(16-18)-120115	12/1/15	10:40		X	W	3	1	1	1				
12	VAP-HPT22(14-16)-120115	12/1/15	11:40		X	W	3	1	1	1				
13	VAP-HPT22(18-21)-120115	12/1/15	12:15		X	W	3	1	1	1				
14	VAP-HPT22(24-27)-120115	12/1/15	13:00		X	W	3	1	1	1				

See page 2

500-104630 COC

Special Instructions/Comments: 2 Coolers / Sample on ice / Questions call Ellyn Gates @ 312-573-3772

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Test America	Cooler Custody Seal (✓)	Printed Name: Bruce Evans	Printed Name: David Beckner	Printed Name: David Beckner	Printed Name: S. Kelsey
☒ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements: Standard ?	Sample Receipt:	Firm: ARCADIS	Firm/Courier: TA	Firm/Courier: TA	Firm: TAL Chicago
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time: 12/1/15 - 14:30	Date/Time: 12/1/15 14:30	Date/Time: 12/1/15 15:15	Date/Time: 12/1/15 1515

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 2

Lab Work Order # 500- 104630

Send Results to:

Contact & Company Name: Ellyn Gates ARCADIS

Telephone:

Address:

Fax:

City State Zip

E-mail Address:

see page 1

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Preservative	B	C	C	A									
Filtered (✓)			X										
# of Containers	2/3	1	1	1									
Container Information	1	3	3	4									

PARAMETER ANALYSIS & METHOD

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	VOCs	Total Metals	Dissolved Metals (Filtered)	Ammonia				
15	VAP-HPT23(8-11)-R0115	12/1/15	14:05		X	W	3	1	1	1				

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

REMARKS

see page 1

Special Instructions/Comments: see page 1

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name:	Printed Name:	Printed Name:	Printed Name: S. Kelsey
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm:	Firm/Courier:	Firm/Courier:	Firm: TAL / Chicago
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time:	Date/Time:	Date/Time:	Date/Time: 12/1/15 1515

SEE PAGE 1

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-104630-1

Login Number: 104630
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	(3.6)(4.3)c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-104695-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
12/14/2015 1:23:28 PM

Bonnie Stadelmann, Senior Project Manager
(708)534-5200
bonnie.stadelmann@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-104695-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-104695-1

Comments
No additional comments.

Receipt
The samples were received on 12/2/2015 3:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1º C.

GC/MS VOA
Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: VAP-HPT1(14-16)-120215 (500-104695-3). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: VAP-HPT23(15-18)-120115 (500-104695-2), VAP-HPT1(14-16)-120215 (500-104695-3), VAP-HPT1(18-20)-120215 (500-104695-4), VAP-HPT24(15-18)-120215 (500-104695-6) and VAP-HPT24(20-23)-120215 (500-104695-7).

Method(s) 8260B: Surrogate recovery for the following sample was outside control limits: VAP-HPT1(14-16)-120215 (500-104695-3). Evidence of matrix interference is present; therefore, re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The low-level CCV at line 8 in 6010C batch 500-315145 was above the method acceptance limits of 70-130% recovery for Lead. The samples VAP-HPT23(15-18)-120115 (500-104695-2), VAP-HPT1(14-16)-120215 (500-104695-3), VAP-HPT1(18-20) -120215 (500-104695-4), VAP-HPT24(6-8)-120215 (500-104695-5), VAP-HPT24(15-18)-120215 (500-104695-6), VAP-HPT24(20-23) -120215 (500-104695-7), VAP-HPT3(8-10)-120215 (500-104695-8) and VAP-HPT3(13-16)-120215 (500-104695-9) were bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits

Method(s) 6010C: The continuing calibration verifications (CCV) associated with batch 500-315145 recovered above the upper control limit for Zinc. The samples associated with these continuing calibration verifications were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: VAP-HPT23(15-18)-120115 (500-104695-2), VAP-HPT1(14-16)-120215 (500-104695-3), VAP-HPT1(18-20)-120215 (500-104695-4), VAP-HPT24(6-8)-120215 (500-104695-5), VAP-HPT24(15-18)-120215 (500-104695-6), VAP-HPT24(20-23)-120215 (500-104695-7), VAP-HPT3(8-10)-120215 (500-104695-8) and VAP-HPT3(13-16)-120215 (500-104695-9).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: TB-1(120215) — Lab Sample ID: 500-104695-1

No Detections.

Client Sample ID: VAP-HPT23(15-18)-120115 — Lab Sample ID: 500-104695-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.4		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	30		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	1.0		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	81		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	50		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	63		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	660		10	2.2	ug/L	10		8260B	Total/NA
Aluminum	18		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.011	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.063		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.3		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0024	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.013		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	240		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.33		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.025		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.41		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	120		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.2	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	6.5		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.12		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	170		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.011		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0029	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	540		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.11		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.5		0.020	0.0090	mg/L	1		6010C	Total/NA
Arsenic	0.0037	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	65		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0072	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0038	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0022	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	10		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	97		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.39		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.011		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	180		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	560		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0075		0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00061		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	140	B	10	2.2	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT1(14-16)-120215 — Lab Sample ID: 500-104695-3

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(14-16)-120215 (Continued) — Lab Sample ID: 500-104695-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	980		25	8.7	ug/L	5		8260B	Total/NA
Benzene	77		2.5	0.73	ug/L	5		8260B	Total/NA
1,4-Dichlorobenzene	5.2		5.0	1.8	ug/L	5		8260B	Total/NA
1,1-Dichloroethane	4.7	J	5.0	2.1	ug/L	5		8260B	Total/NA
Ethylbenzene	140		2.5	0.92	ug/L	5		8260B	Total/NA
Isopropylbenzene	19		5.0	1.9	ug/L	5		8260B	Total/NA
Toluene	120		2.5	0.76	ug/L	5		8260B	Total/NA
Xylenes, Total	180		5.0	1.1	ug/L	5		8260B	Total/NA
Methyl Ethyl Ketone - DL	1900		250	110	ug/L	50		8260B	Total/NA
methyl isobutyl ketone - DL	4500		250	110	ug/L	50		8260B	Total/NA
Aluminum	0.10	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.011		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.30		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	2000		2.0	0.59	mg/L	10		6010C	Total/NA
Copper	0.0029	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	0.30		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.014	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	0.74		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.023		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0090	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	24	F1	0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	78		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.30		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	160		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0022	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Nickel	0.011		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	23		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	77		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	73	B	5.0	1.1	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT1(18-20)-120215 — Lab Sample ID: 500-104695-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.3		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	33		0.50	0.15	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.53	J	1.0	0.33	ug/L	1		8260B	Total/NA
Ethylbenzene	2.8		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	8.8		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	2.4		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	14		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	0.33		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.52		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	81		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0068	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.019		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	18		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.063	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	67		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.014		0.010	0.0031	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(18-20)-120215 (Continued) — Lab Sample ID: 500-104695-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	99		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	340		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0043	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.11		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.47		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	72		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0045	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0012	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	13		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0034	J ^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	65		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.085		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.012		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	97		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	330		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0021	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Ammonia	98	B	5.0	1.1	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT24(6-8)-120215 — Lab Sample ID: 500-104695-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.54		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	1.4		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	4.5		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.13		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0017	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Calcium	160		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0062	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0025	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	5.8		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0086	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	71		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.5		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	8.7		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	60		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0041	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.035		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.086		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	0.27		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	66		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.31		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	8.2		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	61		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	1.6	B	0.20	0.043	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT24(15-18)-120215 — Lab Sample ID: 500-104695-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.6		5.0	1.7	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(15-18)-120215 (Continued) — Lab Sample ID: 500-104695-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.56		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.99	J	1.0	0.39	ug/L	1		8260B	Total/NA
Isopropylbenzene	7.3		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.64		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	1.1		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	0.37		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.50		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.027		0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0066	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	12		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.010	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	100		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.53		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0039	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	120		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	520		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0030	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.047		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.48		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0065	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	11		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	100		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.50		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	120		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	530		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0020	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.000068	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	73	B	5.0	1.1	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT24(20-23)-120215 — Lab Sample ID: 500-104695-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.3		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	0.44	J	0.50	0.15	ug/L	1		8260B	Total/NA
Isopropylbenzene	9.4		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	2.1		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	0.44	J	0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	1.1		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	2.6		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0048	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.75		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	180		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.031		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0034	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.017		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	47		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.056	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	120		0.10	0.034	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(20-23)-120215 (Continued) — Lab Sample ID: 500-104695-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	1.2		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.027		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	130		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	610		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0089		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.20		0.020	0.0090	mg/L	1		6010C	Total/NA
Arsenic	0.0052	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.46		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0054	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	21		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.45		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0055	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	130		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0056	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	590		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00058		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	97	B	4.0	0.86	mg/L	2		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT3(8-10)-120215 — Lab Sample ID: 500-104695-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.1		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	1.5		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.1		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.2		1.0	0.39	ug/L	1		8260B	Total/NA
Xylenes, Total	1.3		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	2.6		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.61		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.013		0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0075	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	27		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.046	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	35		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.71		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0083	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	23		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	87		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0064		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.81		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.48		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	100		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	15		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0042	J ^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	36		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.59		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	24		0.50	0.16	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(8-10)-120215 (Continued) — Lab Sample ID: 500-104695-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	89		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.013	J ^	0.020	0.0090	mg/L	1		6010C	Dissolved
Ammonia	14	B	1.0	0.22	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT3(13-16)-120215 — Lab Sample ID: 500-104695-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.0		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	10		0.50	0.15	ug/L	1		8260B	Total/NA
Chloroethane	8.1		1.0	0.51	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	8.3		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	1.5		1.0	0.40	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	7.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	0.61		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.8		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	1.0		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	2.4		1.0	0.22	ug/L	1		8260B	Total/NA
Chlorobenzene - DL	340		10	3.9	ug/L	10		8260B	Total/NA
Aluminum	3.3		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.022		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.1		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0024	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	170		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.056		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0023	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.015		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	73		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.055	^	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	65		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.88		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.042		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	46		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.0044	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	170		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.038		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.81		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.48		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0043	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	30		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	58		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.25		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0037	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	44		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	160		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00089		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	65	B	4.0	0.86	mg/L	2		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-104695-1	TB-1(120215)	Water	12/01/15 00:00	12/02/15 15:05
500-104695-2	VAP-HPT23(15-18)-120115	Water	12/01/15 15:00	12/02/15 15:05
500-104695-3	VAP-HPT1(14-16)-120215	Water	12/02/15 08:40	12/02/15 15:05
500-104695-4	VAP-HPT1(18-20)-120215	Water	12/02/15 09:20	12/02/15 15:05
500-104695-5	VAP-HPT24(6-8)-120215	Water	12/02/15 10:20	12/02/15 15:05
500-104695-6	VAP-HPT24(15-18)-120215	Water	12/02/15 11:00	12/02/15 15:05
500-104695-7	VAP-HPT24(20-23)-120215	Water	12/02/15 12:00	12/02/15 15:05
500-104695-8	VAP-HPT3(8-10)-120215	Water	12/02/15 13:00	12/02/15 15:05
500-104695-9	VAP-HPT3(13-16)-120215	Water	12/02/15 13:40	12/02/15 15:05

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: TB-1(120215)

Date Collected: 12/01/15 00:00
Date Received: 12/02/15 15:05

Lab Sample ID: 500-104695-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/08/15 22:09	1
Benzene	<0.50		0.50	0.15	ug/L			12/08/15 22:09	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/08/15 22:09	1
Bromoform	<1.0		1.0	0.48	ug/L			12/08/15 22:09	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/08/15 22:09	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/08/15 22:09	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/08/15 22:09	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/08/15 22:09	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/08/15 22:09	1
Chloroform	<1.0		1.0	0.37	ug/L			12/08/15 22:09	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/08/15 22:09	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/08/15 22:09	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/08/15 22:09	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/08/15 22:09	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/08/15 22:09	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/08/15 22:09	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/08/15 22:09	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/08/15 22:09	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/08/15 22:09	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/08/15 22:09	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/08/15 22:09	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/08/15 22:09	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/08/15 22:09	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/08/15 22:09	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/08/15 22:09	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/08/15 22:09	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/08/15 22:09	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/08/15 22:09	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/08/15 22:09	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/08/15 22:09	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/08/15 22:09	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/08/15 22:09	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/08/15 22:09	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/08/15 22:09	1
Styrene	<1.0		1.0	0.39	ug/L			12/08/15 22:09	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/08/15 22:09	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/08/15 22:09	1
Toluene	<0.50		0.50	0.15	ug/L			12/08/15 22:09	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/08/15 22:09	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/08/15 22:09	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/08/15 22:09	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/08/15 22:09	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/08/15 22:09	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/08/15 22:09	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/08/15 22:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/08/15 22:09	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/08/15 22:09	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/08/15 22:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: TB-1(120215)

Date Collected: 12/01/15 00:00
Date Received: 12/02/15 15:05

Lab Sample ID: 500-104695-1

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		75 - 120		12/08/15 22:09	1
Dibromofluoromethane	81		75 - 120		12/08/15 22:09	1
1,2-Dichloroethane-d4 (Surr)	92		75 - 125		12/08/15 22:09	1
Toluene-d8 (Surr)	97		75 - 120		12/08/15 22:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT23(15-18)-120115

Lab Sample ID: 500-104695-2

Date Collected: 12/01/15 15:00
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.4**		5.0	1.7	ug/L			12/08/15 23:26	1
Benzene	**30**		0.50	0.15	ug/L			12/08/15 23:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/08/15 23:26	1
Bromoform	<1.0	F1	1.0	0.48	ug/L			12/08/15 23:26	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/08/15 23:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/08/15 23:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/08/15 23:26	1
Chlorobenzene	**1.0**		1.0	0.39	ug/L			12/08/15 23:26	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/08/15 23:26	1
Chloroform	<1.0		1.0	0.37	ug/L			12/08/15 23:26	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/08/15 23:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/08/15 23:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/08/15 23:26	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/08/15 23:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/08/15 23:26	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/08/15 23:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/08/15 23:26	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/08/15 23:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/08/15 23:26	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/08/15 23:26	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/08/15 23:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/08/15 23:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/08/15 23:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/08/15 23:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/08/15 23:26	1
Ethylbenzene	**81**		0.50	0.18	ug/L			12/08/15 23:26	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/08/15 23:26	1
Isopropylbenzene	**50**		1.0	0.39	ug/L			12/08/15 23:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/08/15 23:26	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/08/15 23:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/08/15 23:26	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/08/15 23:26	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/08/15 23:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/08/15 23:26	1
Styrene	<1.0		1.0	0.39	ug/L			12/08/15 23:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/08/15 23:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/08/15 23:26	1
Toluene	**63**		0.50	0.15	ug/L			12/08/15 23:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/08/15 23:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/08/15 23:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/08/15 23:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/08/15 23:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/08/15 23:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/08/15 23:26	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/08/15 23:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/08/15 23:26	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/08/15 23:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT23(15-18)-120115

Lab Sample ID: 500-104695-2

Date Collected: 12/01/15 15:00
Matrix: Water
Date Received: 12/02/15 15:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*12/08/15 23:26*	*1*
Dibromofluoromethane	*82*		*75 - 120*		*12/08/15 23:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 125*		*12/08/15 23:26*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*12/08/15 23:26*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**660**		10	2.2	ug/L			12/09/15 14:24	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*12/09/15 14:24*	*10*
Dibromofluoromethane	*89*		*75 - 120*		*12/09/15 14:24*	*10*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*		*12/09/15 14:24*	*10*
Toluene-d8 (Surr)	*92*		*75 - 120*		*12/09/15 14:24*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**18**		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 22:10	1
Antimony	**0.011**	**J**	0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 22:10	1
Arsenic	**0.063**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:10	1
Barium	**1.3**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:10	1
Beryllium	**0.0024**	**J**	0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 22:10	1
Cadmium	**0.013**		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 22:10	1
Calcium	**240**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 22:10	1
Chromium	**0.33**		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 22:10	1
Cobalt	**0.025**		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 22:10	1
Copper	**0.41**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:10	1
Iron	**120**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 22:10	1
Lead	**1.2**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 22:10	1
Magnesium	**110**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 22:10	1
Manganese	**6.5**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 22:10	1
Nickel	**0.12**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:10	1
Potassium	**170**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 22:10	1
Selenium	**0.011**		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 22:10	1
Silver	**0.0029**	**J**	0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 22:10	1
Sodium	**540**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 22:10	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 22:10	1
Vanadium	**0.11**		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 22:10	1
Zinc	**1.5**		0.020	0.0090	mg/L		12/03/15 09:01	12/04/15 16:39	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 22:15	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 22:15	1
Arsenic	**0.0037**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:15	1
Barium	**0.45**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:15	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 22:15	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 22:15	1
Calcium	**65**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 22:15	1
Chromium	**0.0072**	**J**	0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 22:15	1
Cobalt	**0.0038**	**J**	0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 22:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT23(15-18)-120115

Lab Sample ID: 500-104695-2
Date Collected: 12/01/15 15:00
Matrix: Water
Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0022	J	0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:15	1
Iron	10		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 22:15	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 22:15	1
Magnesium	97		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 22:15	1
Manganese	0.39		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 22:15	1
Nickel	0.011		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:15	1
Potassium	180		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 22:15	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 22:15	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 22:15	1
Sodium	560		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 22:15	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 22:15	1
Vanadium	0.0075		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 22:15	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 22:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00061		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 09:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 09:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	140	B	10	2.2	mg/L		12/11/15 17:50	12/11/15 22:35	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(14-16)-120215

Lab Sample ID: 500-104695-3

Date Collected: 12/02/15 08:40
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**980**		25	8.7	ug/L			12/09/15 04:13	5
Benzene	**77**		2.5	0.73	ug/L			12/09/15 04:13	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
Bromoform	<5.0		5.0	2.4	ug/L			12/09/15 04:13	5
Bromomethane	<10		10	4.0	ug/L			12/09/15 04:13	5
Carbon disulfide	<10		10	2.2	ug/L			12/09/15 04:13	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
Chlorobenzene	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
Chloroethane	<5.0		5.0	2.5	ug/L			12/09/15 04:13	5
Chloroform	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
Chloromethane	<5.0		5.0	1.6	ug/L			12/09/15 04:13	5
cis-1,2-Dichloroethene	<5.0		5.0	2.0	ug/L			12/09/15 04:13	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			12/09/15 04:13	5
Cyclohexane	<5.0		5.0	2.4	ug/L			12/09/15 04:13	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			12/09/15 04:13	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			12/09/15 04:13	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
1,2-Dichlorobenzene	<5.0		5.0	1.7	ug/L			12/09/15 04:13	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			12/09/15 04:13	5
1,4-Dichlorobenzene	**5.2**		5.0	1.8	ug/L			12/09/15 04:13	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			12/09/15 04:13	5
1,1-Dichloroethane	**4.7**	**J**	5.0	2.1	ug/L			12/09/15 04:13	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			12/09/15 04:13	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			12/09/15 04:13	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			12/09/15 04:13	5
Ethylbenzene	**140**		2.5	0.92	ug/L			12/09/15 04:13	5
2-Hexanone	<25		25	7.8	ug/L			12/09/15 04:13	5
Isopropylbenzene	**19**		5.0	1.9	ug/L			12/09/15 04:13	5
Methyl acetate	<25		25	10	ug/L			12/09/15 04:13	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			12/09/15 04:13	5
Methylene Chloride	<25		25	8.2	ug/L			12/09/15 04:13	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			12/09/15 04:13	5
Styrene	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			12/09/15 04:13	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
Toluene	**120**		2.5	0.76	ug/L			12/09/15 04:13	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			12/09/15 04:13	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			12/09/15 04:13	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			12/09/15 04:13	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			12/09/15 04:13	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			12/09/15 04:13	5
Trichloroethene	<2.5		2.5	0.82	ug/L			12/09/15 04:13	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			12/09/15 04:13	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			12/09/15 04:13	5
Vinyl chloride	<2.5		2.5	1.0	ug/L			12/09/15 04:13	5
Xylenes, Total	**180**		5.0	1.1	ug/L			12/09/15 04:13	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*12/09/15 04:13*	*5*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(14-16)-120215

Lab Sample ID: 500-104695-3

Date Collected: 12/02/15 08:40
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	0.7	X	75 - 120		12/09/15 04:13	5
1,2-Dichloroethane-d4 (Surr)	93		75 - 125		12/09/15 04:13	5
Toluene-d8 (Surr)	98		75 - 120		12/09/15 04:13	5

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	**1900**		250	110	ug/L			12/09/15 04:39	50
methyl isobutyl ketone	**4500**		250	110	ug/L			12/09/15 04:39	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		75 - 120		12/09/15 04:39	50
Dibromofluoromethane	48	X	75 - 120		12/09/15 04:39	50
1,2-Dichloroethane-d4 (Surr)	94		75 - 125		12/09/15 04:39	50
Toluene-d8 (Surr)	97		75 - 120		12/09/15 04:39	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.10**	**J**	0.20	0.062	mg/L		12/03/15 09:01	12/03/15 22:20	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 22:20	1
Arsenic	**0.011**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:20	1
Barium	**0.30**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 22:20	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 22:20	1
Calcium	**2000**		2.0	0.59	mg/L		12/03/15 09:01	12/04/15 16:44	10
Chromium	<0.010		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 22:20	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 22:20	1
Copper	**0.0029**	**J**	0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:20	1
Iron	**0.30**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 22:20	1
Lead	**0.014**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 22:20	1
Magnesium	**0.74**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 22:20	1
Manganese	**0.023**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 22:20	1
Nickel	**0.0090**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:20	1
Potassium	**24**	**F1**	0.50	0.16	mg/L		12/03/15 09:01	12/03/15 22:20	1
Selenium	<0.010	F1	0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 22:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 22:20	1
Sodium	**78**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 22:20	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 22:20	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 22:20	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 22:20	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 22:54	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 22:54	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:54	1
Barium	**0.30**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:54	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 22:54	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 22:54	1
Calcium	**160**		0.20	0.059	mg/L		12/03/15 09:01	12/04/15 17:05	1
Chromium	<0.010		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 22:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(14-16)-120215

Lab Sample ID: 500-104695-3

Date Collected: 12/02/15 08:40

Matrix: Water

Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 22:54	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:54	1
Iron	<0.20		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 22:54	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 22:54	1
Magnesium	<0.10		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 22:54	1
Manganese	<0.010		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 22:54	1
Nickel	**0.011**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:54	1
Potassium	**23**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 22:54	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 22:54	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 22:54	1
Sodium	**77**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 22:54	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 22:54	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 22:54	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 22:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 09:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 09:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**73**	**B**	5.0	1.1	mg/L		12/11/15 17:50	12/11/15 22:38	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(18-20)-120215

Lab Sample ID: 500-104695-4

Date Collected: 12/02/15 09:20
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**5.3**		5.0	1.7	ug/L			12/08/15 23:52	1
Benzene	**33**		0.50	0.15	ug/L			12/08/15 23:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/08/15 23:52	1
Bromoform	<1.0		1.0	0.48	ug/L			12/08/15 23:52	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/08/15 23:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/08/15 23:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/08/15 23:52	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/08/15 23:52	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/08/15 23:52	1
Chloroform	<1.0		1.0	0.37	ug/L			12/08/15 23:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/08/15 23:52	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/08/15 23:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/08/15 23:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/08/15 23:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/08/15 23:52	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/08/15 23:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/08/15 23:52	1
1,2-Dichlorobenzene	**0.53**	**J**	1.0	0.33	ug/L			12/08/15 23:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/08/15 23:52	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/08/15 23:52	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/08/15 23:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/08/15 23:52	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/08/15 23:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/08/15 23:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/08/15 23:52	1
Ethylbenzene	**2.8**		0.50	0.18	ug/L			12/08/15 23:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/08/15 23:52	1
Isopropylbenzene	**8.8**		1.0	0.39	ug/L			12/08/15 23:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/08/15 23:52	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/08/15 23:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/08/15 23:52	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/08/15 23:52	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/08/15 23:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/08/15 23:52	1
Styrene	<1.0		1.0	0.39	ug/L			12/08/15 23:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/08/15 23:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/08/15 23:52	1
Toluene	**2.4**		0.50	0.15	ug/L			12/08/15 23:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/08/15 23:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/08/15 23:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/08/15 23:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/08/15 23:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/08/15 23:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/08/15 23:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/08/15 23:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/08/15 23:52	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/08/15 23:52	1
Xylenes, Total	**14**		1.0	0.22	ug/L			12/08/15 23:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(18-20)-120215

Date Collected: 12/02/15 09:20
Date Received: 12/02/15 15:05

Lab Sample ID: 500-104695-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*12/08/15 23:52*	*1*
Dibromofluoromethane	*81*		*75 - 120*		*12/08/15 23:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*		*12/08/15 23:52*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*12/08/15 23:52*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.33**		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 22:59	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 22:59	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:59	1
Barium	**0.52**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 22:59	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 22:59	1
Calcium	**81**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 22:59	1
Chromium	**0.0068**	**J**	0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 22:59	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 22:59	1
Copper	**0.019**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:59	1
Iron	**18**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 22:59	1
Lead	**0.063**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 22:59	1
Magnesium	**67**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 22:59	1
Manganese	**0.18**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 22:59	1
Nickel	**0.014**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:59	1
Potassium	**99**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 22:59	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 22:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 22:59	1
Sodium	**340**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 22:59	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 22:59	1
Vanadium	**0.0043**	**J**	0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 22:59	1
Zinc	**0.11**		0.020	0.0090	mg/L		12/03/15 09:01	12/04/15 17:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:04	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:04	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:04	1
Barium	**0.47**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:04	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:04	1
Calcium	**72**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:04	1
Chromium	**0.0045**	**J**	0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:04	1
Cobalt	**0.0012**	**J**	0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:04	1
Copper	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:04	1
Iron	**13**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:04	1
Lead	**0.0034**	**J ^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:04	1
Magnesium	**65**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:04	1
Manganese	**0.085**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:04	1
Nickel	**0.012**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:04	1
Potassium	**97**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:04	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(18-20)-120215

Lab Sample ID: 500-104695-4

Date Collected: 12/02/15 09:20

Matrix: Water

Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**330**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:04	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:04	1
Vanadium	**0.0021**	**J**	0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:04	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 23:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 09:57	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 09:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**98**	**B**	5.0	1.1	mg/L		12/11/15 17:50	12/11/15 22:41	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(6-8)-120215

Lab Sample ID: 500-104695-5

Date Collected: 12/02/15 10:20
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 00:18	1
Benzene	**0.54**		0.50	0.15	ug/L			12/09/15 00:18	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 00:18	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 00:18	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 00:18	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 00:18	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 00:18	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/09/15 00:18	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 00:18	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 00:18	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 00:18	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 00:18	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 00:18	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 00:18	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 00:18	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 00:18	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 00:18	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 00:18	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 00:18	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 00:18	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 00:18	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 00:18	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 00:18	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 00:18	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 00:18	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 00:18	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 00:18	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/09/15 00:18	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 00:18	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 00:18	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 00:18	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 00:18	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 00:18	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 00:18	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 00:18	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 00:18	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 00:18	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 00:18	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 00:18	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 00:18	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 00:18	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 00:18	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 00:18	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 00:18	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 00:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 00:18	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 00:18	1
Xylenes, Total	**1.4**		1.0	0.22	ug/L			12/09/15 00:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(6-8)-120215

Date Collected: 12/02/15 10:20
Date Received: 12/02/15 15:05

Lab Sample ID: 500-104695-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*75 - 120*		*12/09/15 00:18*	*1*
Dibromofluoromethane	*83*		*75 - 120*		*12/09/15 00:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*12/09/15 00:18*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*12/09/15 00:18*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.5**		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:10	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:10	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:10	1
Barium	**0.13**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:10	1
Beryllium	**0.0017**	**J**	0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:10	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:10	1
Calcium	**160**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:10	1
Chromium	**0.0062**	**J**	0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:10	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:10	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:10	1
Iron	**5.8**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:10	1
Lead	**0.0086**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:10	1
Magnesium	**71**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:10	1
Manganese	**1.5**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:10	1
Nickel	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:10	1
Potassium	**8.7**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:10	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:10	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:10	1
Sodium	**60**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:10	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:10	1
Vanadium	**0.0041**	**J**	0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:10	1
Zinc	**0.035**		0.020	0.0090	mg/L		12/03/15 09:01	12/04/15 17:22	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:14	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:14	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:14	1
Barium	**0.086**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:14	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:14	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:14	1
Calcium	**120**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:14	1
Chromium	<0.010		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:14	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:14	1
Copper	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:14	1
Iron	**0.27**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:14	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:14	1
Magnesium	**66**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:14	1
Manganese	**0.31**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:14	1
Nickel	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:14	1
Potassium	**8.2**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:14	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:14	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(6-8)-120215

Lab Sample ID: 500-104695-5

Date Collected: 12/02/15 10:20

Matrix: Water

Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**61**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:14	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:14	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:14	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 23:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:04	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**1.6**	**B**	0.20	0.043	mg/L		12/11/15 17:50	12/11/15 21:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(15-18)-120215

Lab Sample ID: 500-104695-6

Date Collected: 12/02/15 11:00
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**7.6**		5.0	1.7	ug/L			12/09/15 13:57	1
Benzene	**0.56**		0.50	0.15	ug/L			12/09/15 13:57	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 13:57	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 13:57	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 13:57	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 13:57	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 13:57	1
Chlorobenzene	**0.99**	**J**	1.0	0.39	ug/L			12/09/15 13:57	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 13:57	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 13:57	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 13:57	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 13:57	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 13:57	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 13:57	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 13:57	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 13:57	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 13:57	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 13:57	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 13:57	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 13:57	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 13:57	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 13:57	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 13:57	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 13:57	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 13:57	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 13:57	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 13:57	1
Isopropylbenzene	**7.3**		1.0	0.39	ug/L			12/09/15 13:57	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 13:57	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 13:57	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 13:57	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 13:57	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 13:57	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 13:57	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 13:57	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 13:57	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 13:57	1
Toluene	**0.64**		0.50	0.15	ug/L			12/09/15 13:57	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 13:57	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 13:57	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 13:57	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 13:57	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 13:57	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 13:57	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 13:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 13:57	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 13:57	1
Xylenes, Total	**1.1**		1.0	0.22	ug/L			12/09/15 13:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(15-18)-120215

Date Collected: 12/02/15 11:00
Date Received: 12/02/15 15:05

Lab Sample ID: 500-104695-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*12/09/15 13:57*	*1*
Dibromofluoromethane	*88*		*75 - 120*		*12/09/15 13:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*12/09/15 13:57*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*12/09/15 13:57*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.37**		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:18	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:18	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:18	1
Barium	**0.50**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:18	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:18	1
Calcium	**110**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:18	1
Chromium	**0.027**		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:18	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:18	1
Copper	**0.0066**	**J**	0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:18	1
Iron	**12**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:18	1
Lead	**0.010**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:18	1
Magnesium	**100**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:18	1
Manganese	**0.53**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:18	1
Nickel	**0.0039**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:18	1
Potassium	**120**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:18	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:18	1
Sodium	**520**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:18	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:18	1
Vanadium	**0.0030**	**J**	0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:18	1
Zinc	**0.047**		0.020	0.0090	mg/L		12/03/15 09:01	12/04/15 17:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:23	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:23	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:23	1
Barium	**0.48**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:23	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:23	1
Calcium	**110**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:23	1
Chromium	**0.0065**	**J**	0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:23	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:23	1
Copper	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:23	1
Iron	**11**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:23	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:23	1
Magnesium	**100**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:23	1
Manganese	**0.50**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:23	1
Nickel	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:23	1
Potassium	**120**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:23	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(15-18)-120215

Lab Sample ID: 500-104695-6

Date Collected: 12/02/15 11:00

Matrix: Water

Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**530**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:23	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:23	1
Vanadium	**0.0020**	**J**	0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:23	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 23:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000068**	**J**	0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:08	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**73**	**B**	5.0	1.1	mg/L		12/11/15 17:50	12/11/15 21:21	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(20-23)-120215

Lab Sample ID: 500-104695-7

Date Collected: 12/02/15 12:00
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.3**		5.0	1.7	ug/L			12/09/15 00:44	1
Benzene	**0.44**	**J**	0.50	0.15	ug/L			12/09/15 00:44	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 00:44	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 00:44	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 00:44	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 00:44	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 00:44	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/09/15 00:44	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 00:44	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 00:44	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 00:44	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 00:44	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 00:44	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 00:44	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 00:44	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 00:44	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 00:44	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 00:44	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 00:44	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 00:44	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 00:44	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 00:44	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 00:44	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 00:44	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 00:44	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 00:44	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 00:44	1
Isopropylbenzene	**9.4**		1.0	0.39	ug/L			12/09/15 00:44	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 00:44	1
Methylcyclohexane	**2.1**		1.0	0.32	ug/L			12/09/15 00:44	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 00:44	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 00:44	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 00:44	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 00:44	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 00:44	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 00:44	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 00:44	1
Toluene	**0.44**	**J**	0.50	0.15	ug/L			12/09/15 00:44	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 00:44	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 00:44	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 00:44	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 00:44	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 00:44	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 00:44	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 00:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 00:44	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 00:44	1
Xylenes, Total	**1.1**		1.0	0.22	ug/L			12/09/15 00:44	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(20-23)-120215

Date Collected: 12/02/15 12:00
Date Received: 12/02/15 15:05

Lab Sample ID: 500-104695-7

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*75 - 120*		*12/09/15 00:44*	*1*
Dibromofluoromethane	*82*		*75 - 120*		*12/09/15 00:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 125*		*12/09/15 00:44*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*12/09/15 00:44*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.6**		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:28	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:28	1
Arsenic	**0.0048**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:28	1
Barium	**0.75**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:28	1
Calcium	**180**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:28	1
Chromium	**0.031**		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:28	1
Cobalt	**0.0034**	**J**	0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:28	1
Copper	**0.017**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:28	1
Iron	**47**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:28	1
Lead	**0.056**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:28	1
Magnesium	**120**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:28	1
Manganese	**1.2**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:28	1
Nickel	**0.027**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:28	1
Potassium	**130**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:28	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:28	1
Sodium	**610**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:28	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:28	1
Vanadium	**0.0089**		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:28	1
Zinc	**0.20**		0.020	0.0090	mg/L		12/03/15 09:01	12/04/15 17:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:41	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:41	1
Arsenic	**0.0052**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:41	1
Barium	**0.46**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:41	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:41	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:41	1
Calcium	**120**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:41	1
Chromium	**0.0054**	**J**	0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:41	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:41	1
Copper	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:41	1
Iron	**21**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:41	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:41	1
Magnesium	**120**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:41	1
Manganese	**0.45**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:41	1
Nickel	**0.0055**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:41	1
Potassium	**130**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:41	1
Selenium	**0.0056**	**J**	0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:41	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(20-23)-120215

Lab Sample ID: 500-104695-7

Date Collected: 12/02/15 12:00
Matrix: Water
Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**590**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:41	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:41	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:41	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 23:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00058**		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:12	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**97**	**B**	4.0	0.86	mg/L		12/11/15 17:50	12/11/15 22:44	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(8-10)-120215

Lab Sample ID: 500-104695-8

Date Collected: 12/02/15 13:00
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 01:10	1
Benzene	**3.1**		0.50	0.15	ug/L			12/09/15 01:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 01:10	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 01:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 01:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 01:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 01:10	1
Chlorobenzene	**1.5**		1.0	0.39	ug/L			12/09/15 01:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 01:10	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 01:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 01:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 01:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 01:10	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 01:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 01:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 01:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 01:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 01:10	1
1,4-Dichlorobenzene	**1.1**		1.0	0.36	ug/L			12/09/15 01:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 01:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 01:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 01:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 01:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 01:10	1
Isopropylbenzene	**3.2**		1.0	0.39	ug/L			12/09/15 01:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 01:10	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 01:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 01:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 01:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 01:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 01:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 01:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 01:10	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 01:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 01:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 01:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 01:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 01:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 01:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 01:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 01:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 01:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 01:10	1
Xylenes, Total	**1.3**		1.0	0.22	ug/L			12/09/15 01:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(8-10)-120215

Date Collected: 12/02/15 13:00
Date Received: 12/02/15 15:05

Lab Sample ID: 500-104695-8

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*75 - 120*		*12/09/15 01:10*	*1*
Dibromofluoromethane	*81*		*75 - 120*		*12/09/15 01:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 125*		*12/09/15 01:10*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*12/09/15 01:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.6**		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:47	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:47	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:47	1
Barium	**0.61**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:47	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:47	1
Calcium	**110**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:47	1
Chromium	**0.013**		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:47	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:47	1
Copper	**0.0075**	**J**	0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:47	1
Iron	**27**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:47	1
Lead	**0.046**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:47	1
Magnesium	**35**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:47	1
Manganese	**0.71**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:47	1
Nickel	**0.0083**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:47	1
Potassium	**23**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:47	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:47	1
Sodium	**87**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:47	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:47	1
Vanadium	**0.0064**		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:47	1
Zinc	**0.81**		0.020	0.0090	mg/L		12/03/15 09:01	12/04/15 17:36	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:51	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:51	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:51	1
Barium	**0.48**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:51	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:51	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:51	1
Calcium	**100**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:51	1
Chromium	<0.010		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:51	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:51	1
Copper	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:51	1
Iron	**15**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:51	1
Lead	**0.0042**	**J ^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:51	1
Magnesium	**36**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:51	1
Manganese	**0.59**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:51	1
Nickel	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:51	1
Potassium	**24**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:51	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:51	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(8-10)-120215

Lab Sample ID: 500-104695-8

Date Collected: 12/02/15 13:00
Matrix: Water
Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**89**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:51	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:51	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:51	1
Zinc	**0.013**	**J ^**	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 23:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:16	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**14**	**B**	1.0	0.22	mg/L		12/11/15 17:50	12/11/15 21:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(13-16)-120215

Lab Sample ID: 500-104695-9

Date Collected: 12/02/15 13:40
Matrix: Water
Date Received: 12/02/15 15:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.0**		5.0	1.7	ug/L			12/09/15 01:36	1
Benzene	**10**		0.50	0.15	ug/L			12/09/15 01:36	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 01:36	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 01:36	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 01:36	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 01:36	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 01:36	1
Chloroethane	**8.1**		1.0	0.51	ug/L			12/09/15 01:36	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 01:36	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 01:36	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 01:36	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 01:36	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 01:36	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 01:36	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 01:36	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 01:36	1
1,2-Dichlorobenzene	**8.3**		1.0	0.33	ug/L			12/09/15 01:36	1
1,3-Dichlorobenzene	**1.5**		1.0	0.40	ug/L			12/09/15 01:36	1
1,4-Dichlorobenzene	**7.6**		1.0	0.36	ug/L			12/09/15 01:36	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 01:36	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 01:36	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 01:36	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 01:36	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 01:36	1
Ethylbenzene	**0.61**		0.50	0.18	ug/L			12/09/15 01:36	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 01:36	1
Isopropylbenzene	**4.8**		1.0	0.39	ug/L			12/09/15 01:36	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 01:36	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 01:36	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 01:36	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 01:36	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 01:36	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 01:36	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 01:36	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 01:36	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 01:36	1
Toluene	**1.0**		0.50	0.15	ug/L			12/09/15 01:36	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 01:36	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 01:36	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 01:36	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 01:36	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 01:36	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 01:36	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 01:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 01:36	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 01:36	1
Xylenes, Total	**2.4**		1.0	0.22	ug/L			12/09/15 01:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(13-16)-120215

Lab Sample ID: 500-104695-9

Date Collected: 12/02/15 13:40
Matrix: Water
Date Received: 12/02/15 15:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*12/09/15 01:36*	*1*
Dibromofluoromethane	*82*		*75 - 120*		*12/09/15 01:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*12/09/15 01:36*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*12/09/15 01:36*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**340**		10	3.9	ug/L			12/09/15 02:02	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*75 - 120*		*12/09/15 02:02*	*10*
Dibromofluoromethane	*81*		*75 - 120*		*12/09/15 02:02*	*10*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*		*12/09/15 02:02*	*10*
Toluene-d8 (Surr)	*98*		*75 - 120*		*12/09/15 02:02*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3.3**		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:55	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:55	1
Arsenic	**0.022**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:55	1
Barium	**1.1**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:55	1
Beryllium	**0.0024**	**J**	0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:55	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:55	1
Calcium	**170**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:55	1
Chromium	**0.056**		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:55	1
Cobalt	**0.0023**	**J**	0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:55	1
Copper	**0.015**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:55	1
Iron	**73**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:55	1
Lead	**0.055**	**^**	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:55	1
Magnesium	**65**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:55	1
Manganese	**0.88**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:55	1
Nickel	**0.042**		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:55	1
Potassium	**46**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:55	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:55	1
Silver	**0.0044**	**J**	0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:55	1
Sodium	**170**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:55	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:55	1
Vanadium	**0.038**		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:55	1
Zinc	**0.81**		0.020	0.0090	mg/L		12/03/15 09:01	12/04/15 17:40	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 23:59	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 23:59	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:59	1
Barium	**0.48**		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 23:59	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 23:59	1
Calcium	**130**		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 23:59	1
Chromium	**0.0043**	**J**	0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 23:59	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 23:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(13-16)-120215

Lab Sample ID: 500-104695-9

Date Collected: 12/02/15 13:40
Matrix: Water
Date Received: 12/02/15 15:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 23:59	1
Iron	**30**		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 23:59	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 23:59	1
Magnesium	**58**		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 23:59	1
Manganese	**0.25**		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 23:59	1
Nickel	**0.0037**	**J**	0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 23:59	1
Potassium	**44**		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 23:59	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 23:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 23:59	1
Sodium	**160**		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 23:59	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 23:59	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 23:59	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 23:59	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00089**		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:20	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 10:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**65**	**B**	4.0	0.86	mg/L		12/11/15 17:50	12/11/15 21:30	2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

GC/MS VOA

Analysis Batch: 315544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-1	TB-1(120215)	Total/NA	Water	8260B	
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	8260B	
500-104695-2 MS	VAP-HPT23(15-18)-120115	Total/NA	Water	8260B	
500-104695-2 MSD	VAP-HPT23(15-18)-120115	Total/NA	Water	8260B	
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	8260B	
500-104695-3 - DL	VAP-HPT1(14-16)-120215	Total/NA	Water	8260B	
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	8260B	
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	8260B	
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	8260B	
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	8260B	
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	8260B	
500-104695-9 - DL	VAP-HPT3(13-16)-120215	Total/NA	Water	8260B	
LCS 500-315544/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-315544/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 315636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2 - DL	VAP-HPT23(15-18)-120115	Total/NA	Water	8260B	
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	8260B	
LCS 500-315636/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-315636/6	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 314969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2	VAP-HPT23(15-18)-120115	Dissolved	Water	3010A	
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	3010A	
500-104695-3	VAP-HPT1(14-16)-120215	Dissolved	Water	3010A	
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	3010A	
500-104695-3 DU	VAP-HPT1(14-16)-120215	Total/NA	Water	3010A	
500-104695-3 MS	VAP-HPT1(14-16)-120215	Total/NA	Water	3010A	
500-104695-3 MSD	VAP-HPT1(14-16)-120215	Total/NA	Water	3010A	
500-104695-4	VAP-HPT1(18-20)-120215	Dissolved	Water	3010A	
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	3010A	
500-104695-5	VAP-HPT24(6-8)-120215	Dissolved	Water	3010A	
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	3010A	
500-104695-6	VAP-HPT24(15-18)-120215	Dissolved	Water	3010A	
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	3010A	
500-104695-7	VAP-HPT24(20-23)-120215	Dissolved	Water	3010A	
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	3010A	
500-104695-8	VAP-HPT3(8-10)-120215	Dissolved	Water	3010A	
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	3010A	
500-104695-9	VAP-HPT3(13-16)-120215	Dissolved	Water	3010A	
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	3010A	
LCS 500-314969/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-314969/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 314990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2	VAP-HPT23(15-18)-120115	Dissolved	Water	7470A	
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	7470A	
500-104695-3	VAP-HPT1(14-16)-120215	Dissolved	Water	7470A	
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	7470A	
500-104695-4	VAP-HPT1(18-20)-120215	Dissolved	Water	7470A	
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	7470A	
500-104695-5	VAP-HPT24(6-8)-120215	Dissolved	Water	7470A	
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	7470A	
500-104695-6	VAP-HPT24(15-18)-120215	Dissolved	Water	7470A	
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	7470A	
500-104695-7	VAP-HPT24(20-23)-120215	Dissolved	Water	7470A	
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	7470A	
500-104695-8	VAP-HPT3(8-10)-120215	Dissolved	Water	7470A	
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	7470A	
500-104695-9	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	7470A	
500-104695-9 DU	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	
500-104695-9 MS	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	
500-104695-9 MSD	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	
LCS 500-314990/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-314990/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 315145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2	VAP-HPT23(15-18)-120115	Dissolved	Water	6010C	314969
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	6010C	314969
500-104695-3	VAP-HPT1(14-16)-120215	Dissolved	Water	6010C	314969
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-3 DU	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-3 MS	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-3 MSD	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-4	VAP-HPT1(18-20)-120215	Dissolved	Water	6010C	314969
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	6010C	314969
500-104695-5	VAP-HPT24(6-8)-120215	Dissolved	Water	6010C	314969
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	6010C	314969
500-104695-6	VAP-HPT24(15-18)-120215	Dissolved	Water	6010C	314969
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	6010C	314969
500-104695-7	VAP-HPT24(20-23)-120215	Dissolved	Water	6010C	314969
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	6010C	314969
500-104695-8	VAP-HPT3(8-10)-120215	Dissolved	Water	6010C	314969
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	6010C	314969
500-104695-9	VAP-HPT3(13-16)-120215	Dissolved	Water	6010C	314969
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	6010C	314969
LCS 500-314969/2-A	Lab Control Sample	Total/NA	Water	6010C	314969
MB 500-314969/1-A	Method Blank	Total/NA	Water	6010C	314969

Analysis Batch: 315178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2	VAP-HPT23(15-18)-120115	Dissolved	Water	7470A	314990
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	7470A	314990
500-104695-3	VAP-HPT1(14-16)-120215	Dissolved	Water	7470A	314990

Metals (Continued)

Analysis Batch: 315178 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	7470A	314990
500-104695-4	VAP-HPT1(18-20)-120215	Dissolved	Water	7470A	314990
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	7470A	314990
500-104695-5	VAP-HPT24(6-8)-120215	Dissolved	Water	7470A	314990
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	7470A	314990
500-104695-6	VAP-HPT24(15-18)-120215	Dissolved	Water	7470A	314990
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	7470A	314990
500-104695-7	VAP-HPT24(20-23)-120215	Dissolved	Water	7470A	314990
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	7470A	314990
500-104695-8	VAP-HPT3(8-10)-120215	Dissolved	Water	7470A	314990
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	7470A	314990
500-104695-9	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	314990
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	7470A	314990
500-104695-9 DU	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	314990
500-104695-9 MS	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	314990
500-104695-9 MSD	VAP-HPT3(13-16)-120215	Dissolved	Water	7470A	314990
LCS 500-314990/13-A	Lab Control Sample	Total/NA	Water	7470A	314990
MB 500-314990/12-A	Method Blank	Total/NA	Water	7470A	314990

Analysis Batch: 315276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	6010C	314969
500-104695-3	VAP-HPT1(14-16)-120215	Dissolved	Water	6010C	314969
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-3 DU	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-3 MS	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-3 MSD	VAP-HPT1(14-16)-120215	Total/NA	Water	6010C	314969
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	6010C	314969
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	6010C	314969
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	6010C	314969
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	6010C	314969
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	6010C	314969
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	6010C	314969

General Chemistry

Prep Batch: 316134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	SM 4500 NH3 B	
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	SM 4500 NH3 B	
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	SM 4500 NH3 B	
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	SM 4500 NH3 B	
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	SM 4500 NH3 B	
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	SM 4500 NH3 B	
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	SM 4500 NH3 B	
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	SM 4500 NH3 B	
LCS 500-316134/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-316134/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

General Chemistry (Continued)

Analysis Batch: 316144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104695-2	VAP-HPT23(15-18)-120115	Total/NA	Water	SM 4500 NH3 G	316134
500-104695-3	VAP-HPT1(14-16)-120215	Total/NA	Water	SM 4500 NH3 G	316134
500-104695-4	VAP-HPT1(18-20)-120215	Total/NA	Water	SM 4500 NH3 G	316134
500-104695-5	VAP-HPT24(6-8)-120215	Total/NA	Water	SM 4500 NH3 G	316134
500-104695-6	VAP-HPT24(15-18)-120215	Total/NA	Water	SM 4500 NH3 G	316134
500-104695-7	VAP-HPT24(20-23)-120215	Total/NA	Water	SM 4500 NH3 G	316134
500-104695-8	VAP-HPT3(8-10)-120215	Total/NA	Water	SM 4500 NH3 G	316134
500-104695-9	VAP-HPT3(13-16)-120215	Total/NA	Water	SM 4500 NH3 G	316134
LCS 500-316134/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	316134
MB 500-316134/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	316134

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(75-120)	(75-120)	(75-125)	(75-120)
500-104695-1	TB-1(120215)	97	81	92	97
500-104695-2	VAP-HPT23(15-18)-120115	94	82	94	98
500-104695-2 - DL	VAP-HPT23(15-18)-120115	92	89	98	92
500-104695-2 MS	VAP-HPT23(15-18)-120115	93	85	90	98
500-104695-2 MSD	VAP-HPT23(15-18)-120115	95	84	93	98
500-104695-3	VAP-HPT1(14-16)-120215	96	0.7 X	93	98
500-104695-3 - DL	VAP-HPT1(14-16)-120215	96	48 X	94	97
500-104695-4	VAP-HPT1(18-20)-120215	94	81	92	96
500-104695-5	VAP-HPT24(6-8)-120215	98	83	91	98
500-104695-6	VAP-HPT24(15-18)-120215	92	88	100	92
500-104695-7	VAP-HPT24(20-23)-120215	109	82	95	97
500-104695-8	VAP-HPT3(8-10)-120215	98	81	94	96
500-104695-9	VAP-HPT3(13-16)-120215	96	82	91	97
500-104695-9 - DL	VAP-HPT3(13-16)-120215	98	81	93	98
LCS 500-315544/4	Lab Control Sample	94	84	93	98
LCS 500-315636/4	Lab Control Sample	95	89	92	94
MB 500-315544/6	Method Blank	96	82	93	97
MB 500-315636/6	Method Blank	95	89	100	92

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-315544/6
Matrix: Water
Analysis Batch: 315544

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/08/15 21:17	1
Benzene	<0.50		0.50	0.15	ug/L			12/08/15 21:17	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/08/15 21:17	1
Bromoform	<1.0		1.0	0.48	ug/L			12/08/15 21:17	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/08/15 21:17	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/08/15 21:17	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/08/15 21:17	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/08/15 21:17	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/08/15 21:17	1
Chloroform	<1.0		1.0	0.37	ug/L			12/08/15 21:17	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/08/15 21:17	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/08/15 21:17	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/08/15 21:17	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/08/15 21:17	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/08/15 21:17	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/08/15 21:17	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/08/15 21:17	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/08/15 21:17	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/08/15 21:17	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/08/15 21:17	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/08/15 21:17	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/08/15 21:17	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/08/15 21:17	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/08/15 21:17	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/08/15 21:17	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/08/15 21:17	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/08/15 21:17	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/08/15 21:17	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/08/15 21:17	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/08/15 21:17	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/08/15 21:17	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/08/15 21:17	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/08/15 21:17	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/08/15 21:17	1
Styrene	<1.0		1.0	0.39	ug/L			12/08/15 21:17	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/08/15 21:17	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/08/15 21:17	1
Toluene	<0.50		0.50	0.15	ug/L			12/08/15 21:17	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/08/15 21:17	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/08/15 21:17	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/08/15 21:17	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/08/15 21:17	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/08/15 21:17	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/08/15 21:17	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/08/15 21:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/08/15 21:17	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/08/15 21:17	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/08/15 21:17	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		75 - 120		12/08/15 21:17	1
Dibromofluoromethane	82		75 - 120		12/08/15 21:17	1
1,2-Dichloroethane-d4 (Surr)	93		75 - 125		12/08/15 21:17	1
Toluene-d8 (Surr)	97		75 - 120		12/08/15 21:17	1

Lab Sample ID: LCS 500-315544/4
Matrix: Water
Analysis Batch: 315544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	47.4		ug/L		95	47 - 131
Benzene	50.0	50.4		ug/L		101	70 - 120
Bromodichloromethane	50.0	46.7		ug/L		93	70 - 127
Bromoform	50.0	35.2		ug/L		70	70 - 135
Bromomethane	50.0	53.7		ug/L		107	30 - 170
Carbon disulfide	50.0	52.3		ug/L		105	61 - 120
Carbon tetrachloride	50.0	40.7		ug/L		81	70 - 136
Chlorobenzene	50.0	47.2		ug/L		94	70 - 120
Chloroethane	50.0	37.3		ug/L		75	40 - 150
Chloroform	50.0	48.3		ug/L		97	70 - 120
Chloromethane	50.0	56.0		ug/L		112	45 - 140
cis-1,2-Dichloroethene	50.0	47.0		ug/L		94	70 - 120
cis-1,3-Dichloropropene	50.0	49.8		ug/L		100	70 - 122
Cyclohexane	50.0	54.1		ug/L		108	60 - 133
Dibromochloromethane	50.0	40.3		ug/L		81	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	36.7		ug/L		73	59 - 139
1,2-Dibromoethane	50.0	45.2		ug/L		90	70 - 124
1,2-Dichlorobenzene	50.0	44.4		ug/L		89	70 - 123
1,3-Dichlorobenzene	50.0	44.9		ug/L		90	70 - 122
1,4-Dichlorobenzene	50.0	44.9		ug/L		90	70 - 120
Dichlorodifluoromethane	50.0	49.8		ug/L		100	30 - 150
1,1-Dichloroethane	50.0	49.6		ug/L		99	70 - 127
1,2-Dichloroethane	50.0	47.3		ug/L		95	66 - 132
1,1-Dichloroethene	50.0	48.6		ug/L		97	68 - 121
1,2-Dichloropropane	50.0	50.5		ug/L		101	70 - 127
Ethylbenzene	50.0	46.7		ug/L		93	70 - 125
2-Hexanone	50.0	52.4		ug/L		105	53 - 140
Isopropylbenzene	50.0	49.1		ug/L		98	70 - 132
Methyl acetate	250	262		ug/L		105	56 - 131
Methylcyclohexane	50.0	50.9		ug/L		102	60 - 140
Methylene Chloride	50.0	45.8		ug/L		92	70 - 120
Methyl Ethyl Ketone	50.0	51.9		ug/L		104	51 - 134
methyl isobutyl ketone	50.0	51.4		ug/L		103	53 - 135
Methyl tert-butyl ether	50.0	49.7		ug/L		99	65 - 120
Styrene	50.0	50.0		ug/L		100	70 - 120
1,1,2,2-Tetrachloroethane	50.0	49.2		ug/L		98	68 - 133
Tetrachloroethene	50.0	46.7		ug/L		93	70 - 129
Toluene	50.0	50.5		ug/L		101	70 - 120
trans-1,2-Dichloroethene	50.0	49.2		ug/L		98	70 - 120
trans-1,3-Dichloropropene	50.0	48.0		ug/L		96	70 - 123
1,2,4-Trichlorobenzene	50.0	39.3		ug/L		79	70 - 125
1,1,1-Trichloroethane	50.0	45.9		ug/L		92	70 - 125
1,1,2-Trichloroethane	50.0	50.6		ug/L		101	70 - 125
Trichloroethene	50.0	44.7		ug/L		89	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-315544/4
Matrix: Water
Analysis Batch: 315544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	43.1		ug/L		86	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.6		ug/L		95	64 - 120
Vinyl chloride	50.0	54.1		ug/L		108	63 - 127
Xylenes, Total	100	96.4		ug/L		96	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*
Dibromofluoromethane	*84*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*
Toluene-d8 (Surr)	*98*		*75 - 120*

Lab Sample ID: 500-104695-2 MS
Matrix: Water
Analysis Batch: 315544

Client Sample ID: VAP-HPT23(15-18)-120115
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	9.4		50.0	53.4		ug/L		88	47 - 131
Benzene	30		50.0	77.9		ug/L		97	70 - 120
Bromodichloromethane	<1.0		50.0	46.2		ug/L		92	70 - 127
Bromoform	<1.0	F1	50.0	33.4	F1	ug/L		67	70 - 135
Bromomethane	<2.0		50.0	52.1		ug/L		104	30 - 170
Carbon disulfide	<2.0		50.0	51.0		ug/L		102	61 - 120
Carbon tetrachloride	<1.0		50.0	39.6		ug/L		79	70 - 136
Chlorobenzene	1.0		50.0	48.6		ug/L		95	70 - 120
Chloroethane	<1.0		50.0	43.5		ug/L		87	40 - 150
Chloroform	<1.0		50.0	48.1		ug/L		96	70 - 120
Chloromethane	<1.0		50.0	52.8		ug/L		106	45 - 140
cis-1,2-Dichloroethene	<1.0		50.0	48.0		ug/L		96	70 - 120
cis-1,3-Dichloropropene	<1.0		50.0	48.0		ug/L		96	70 - 122
Cyclohexane	<1.0		50.0	54.0		ug/L		108	60 - 133
Dibromochloromethane	<1.0		50.0	38.5		ug/L		77	70 - 120
1,2-Dibromo-3-Chloropropane	<5.0		50.0	39.1		ug/L		78	59 - 139
1,2-Dibromoethane	<1.0		50.0	44.2		ug/L		88	70 - 124
1,2-Dichlorobenzene	<1.0		50.0	45.9		ug/L		92	70 - 123
1,3-Dichlorobenzene	<1.0		50.0	45.2		ug/L		90	70 - 122
1,4-Dichlorobenzene	<1.0		50.0	44.7		ug/L		89	70 - 120
Dichlorodifluoromethane	<2.0		50.0	46.8		ug/L		94	30 - 150
1,1-Dichloroethane	<1.0		50.0	49.4		ug/L		99	70 - 127
1,2-Dichloroethane	<1.0		50.0	47.9		ug/L		96	66 - 132
1,1-Dichloroethene	<1.0		50.0	46.4		ug/L		93	68 - 121
1,2-Dichloropropane	<1.0		50.0	49.8		ug/L		100	70 - 127
Ethylbenzene	81		50.0	125		ug/L		87	70 - 125
2-Hexanone	<5.0		50.0	52.0		ug/L		104	53 - 140
Isopropylbenzene	50		50.0	95.1		ug/L		91	70 - 132
Methyl acetate	<5.0		250	251		ug/L		101	56 - 131
Methylcyclohexane	<1.0		50.0	50.7		ug/L		101	60 - 140
Methylene Chloride	<5.0		50.0	45.4		ug/L		91	70 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-104695-2 MS — **Client Sample ID: VAP-HPT23(15-18)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315544

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	53.0		ug/L		106	51 - 134
methyl isobutyl ketone	<5.0		50.0	49.1		ug/L		98	53 - 135
Methyl tert-butyl ether	<1.0		50.0	49.6		ug/L		99	65 - 120
Styrene	<1.0		50.0	54.7		ug/L		109	70 - 120
1,1,2,2-Tetrachloroethane	<1.0		50.0	47.6		ug/L		95	68 - 133
Tetrachloroethene	<1.0		50.0	45.9		ug/L		92	70 - 129
Toluene	63		50.0	111		ug/L		97	70 - 120
trans-1,2-Dichloroethene	<1.0		50.0	48.3		ug/L		97	70 - 120
trans-1,3-Dichloropropene	<1.0		50.0	45.9		ug/L		92	70 - 123
1,2,4-Trichlorobenzene	<1.0		50.0	40.8		ug/L		82	70 - 125
1,1,1-Trichloroethane	<1.0		50.0	44.6		ug/L		89	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	50.0		ug/L		100	70 - 125
Trichloroethene	<0.50		50.0	43.2		ug/L		86	70 - 122
Trichlorofluoromethane	<1.0		50.0	41.3		ug/L		83	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	46.3		ug/L		93	64 - 120
Vinyl chloride	<0.50		50.0	50.1		ug/L		100	63 - 127
Xylenes, Total	620		100	684	4	ug/L		68	70 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*
Dibromofluoromethane	*85*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 125*
Toluene-d8 (Surr)	*98*		*75 - 120*

Lab Sample ID: 500-104695-2 MSD — **Client Sample ID: VAP-HPT23(15-18)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315544

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	9.4		50.0	58.8		ug/L		99	47 - 131	10	20
Benzene	30		50.0	77.8		ug/L		97	70 - 120	0	20
Bromodichloromethane	<1.0		50.0	44.9		ug/L		90	70 - 127	3	20
Bromoform	<1.0	F1	50.0	33.2	F1	ug/L		66	70 - 135	1	20
Bromomethane	<2.0		50.0	51.2		ug/L		102	30 - 170	2	20
Carbon disulfide	<2.0		50.0	48.0		ug/L		96	61 - 120	6	20
Carbon tetrachloride	<1.0		50.0	37.6		ug/L		75	70 - 136	5	20
Chlorobenzene	1.0		50.0	46.9		ug/L		92	70 - 120	4	20
Chloroethane	<1.0		50.0	43.9		ug/L		88	40 - 150	1	20
Chloroform	<1.0		50.0	46.6		ug/L		93	70 - 120	3	20
Chloromethane	<1.0		50.0	51.5		ug/L		103	45 - 140	2	20
cis-1,2-Dichloroethene	<1.0		50.0	45.6		ug/L		91	70 - 120	5	20
cis-1,3-Dichloropropene	<1.0		50.0	47.0		ug/L		94	70 - 122	2	20
Cyclohexane	<1.0		50.0	49.8		ug/L		100	60 - 133	8	20
Dibromochloromethane	<1.0		50.0	38.1		ug/L		76	70 - 120	1	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	39.3		ug/L		79	59 - 139	1	20
1,2-Dibromoethane	<1.0		50.0	42.9		ug/L		86	70 - 124	3	20
1,2-Dichlorobenzene	<1.0		50.0	44.5		ug/L		89	70 - 123	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-104695-2 MSD — **Client Sample ID: VAP-HPT23(15-18)-120115**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315544

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	43.6		ug/L		87	70 - 122	4	20
1,4-Dichlorobenzene	<1.0		50.0	43.4		ug/L		87	70 - 120	3	20
Dichlorodifluoromethane	<2.0		50.0	45.1		ug/L		90	30 - 150	4	20
1,1-Dichloroethane	<1.0		50.0	47.6		ug/L		95	70 - 127	4	20
1,2-Dichloroethane	<1.0		50.0	46.7		ug/L		93	66 - 132	3	20
1,1-Dichloroethene	<1.0		50.0	43.6		ug/L		87	68 - 121	6	20
1,2-Dichloropropane	<1.0		50.0	49.0		ug/L		98	70 - 127	2	20
Ethylbenzene	81		50.0	128		ug/L		94	70 - 125	3	20
2-Hexanone	<5.0		50.0	55.6		ug/L		111	53 - 140	7	20
Isopropylbenzene	50		50.0	96.4		ug/L		94	70 - 132	1	20
Methyl acetate	<5.0		250	252		ug/L		101	56 - 131	0	20
Methylcyclohexane	<1.0		50.0	46.9		ug/L		94	60 - 140	8	20
Methylene Chloride	<5.0		50.0	43.7		ug/L		87	70 - 120	4	20
Methyl Ethyl Ketone	<5.0		50.0	56.1		ug/L		112	51 - 134	6	20
methyl isobutyl ketone	<5.0		50.0	51.8		ug/L		104	53 - 135	5	20
Methyl tert-butyl ether	<1.0		50.0	49.1		ug/L		98	65 - 120	1	20
Styrene	<1.0		50.0	53.0		ug/L		106	70 - 120	3	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	48.1		ug/L		96	68 - 133	1	20
Tetrachloroethene	<1.0		50.0	43.0		ug/L		86	70 - 129	6	20
Toluene	63		50.0	114		ug/L		103	70 - 120	2	20
trans-1,2-Dichloroethene	<1.0		50.0	45.6		ug/L		91	70 - 120	6	20
trans-1,3-Dichloropropene	<1.0		50.0	45.3		ug/L		91	70 - 123	1	20
1,2,4-Trichlorobenzene	<1.0		50.0	39.2		ug/L		78	70 - 125	4	20
1,1,1-Trichloroethane	<1.0		50.0	42.3		ug/L		85	70 - 125	5	20
1,1,2-Trichloroethane	<1.0		50.0	48.6		ug/L		97	70 - 125	3	20
Trichloroethene	<0.50		50.0	41.2		ug/L		82	70 - 122	5	20
Trichlorofluoromethane	<1.0		50.0	40.5		ug/L		81	65 - 134	2	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	43.5		ug/L		87	64 - 120	6	20
Vinyl chloride	<0.50		50.0	49.7		ug/L		99	63 - 127	1	20
Xylenes, Total	620		100	728	4	ug/L		112	70 - 120	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*
Dibromofluoromethane	*84*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*
Toluene-d8 (Surr)	*98*		*75 - 120*

Lab Sample ID: MB 500-315636/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315636

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 10:22	1
Benzene	<0.50		0.50	0.15	ug/L			12/09/15 10:22	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 10:22	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 10:22	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 10:22	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-315636/6
Matrix: Water
Analysis Batch: 315636

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 10:22	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 10:22	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/09/15 10:22	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 10:22	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 10:22	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 10:22	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 10:22	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 10:22	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 10:22	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 10:22	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 10:22	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 10:22	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 10:22	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 10:22	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 10:22	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 10:22	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 10:22	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 10:22	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 10:22	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 10:22	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 10:22	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 10:22	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/09/15 10:22	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 10:22	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 10:22	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 10:22	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 10:22	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 10:22	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 10:22	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 10:22	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 10:22	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 10:22	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 10:22	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 10:22	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 10:22	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 10:22	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 10:22	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 10:22	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 10:22	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 10:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 10:22	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 10:22	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/09/15 10:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*12/09/15 10:22*	*1*
Dibromofluoromethane	*89*		*75 - 120*		*12/09/15 10:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*12/09/15 10:22*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-315636/6
Matrix: Water
Analysis Batch: 315636

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	92		75 - 120		12/09/15 10:22	1

Lab Sample ID: LCS 500-315636/4
Matrix: Water
Analysis Batch: 315636

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	34.6		ug/L		69	47 - 131
Benzene	50.0	45.7		ug/L		91	70 - 120
Bromodichloromethane	50.0	45.9		ug/L		92	70 - 127
Bromoform	50.0	46.2		ug/L		92	70 - 135
Bromomethane	50.0	52.0		ug/L		104	30 - 170
Carbon disulfide	50.0	46.1		ug/L		92	61 - 120
Carbon tetrachloride	50.0	47.7		ug/L		95	70 - 136
Chlorobenzene	50.0	48.4		ug/L		97	70 - 120
Chloroethane	50.0	49.7		ug/L		99	40 - 150
Chloroform	50.0	46.5		ug/L		93	70 - 120
Chloromethane	50.0	46.7		ug/L		93	45 - 140
cis-1,2-Dichloroethene	50.0	46.9		ug/L		94	70 - 120
cis-1,3-Dichloropropene	50.0	47.4		ug/L		95	70 - 122
Cyclohexane	50.0	48.7		ug/L		97	60 - 133
Dibromochloromethane	50.0	47.7		ug/L		95	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	42.9		ug/L		86	59 - 139
1,2-Dibromoethane	50.0	48.9		ug/L		98	70 - 124
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	70 - 123
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	70 - 122
1,4-Dichlorobenzene	50.0	49.1		ug/L		98	70 - 120
Dichlorodifluoromethane	50.0	47.4		ug/L		95	30 - 150
1,1-Dichloroethane	50.0	48.1		ug/L		96	70 - 127
1,2-Dichloroethane	50.0	48.1		ug/L		96	66 - 132
1,1-Dichloroethene	50.0	46.8		ug/L		94	68 - 121
1,2-Dichloropropane	50.0	46.7		ug/L		93	70 - 127
Ethylbenzene	50.0	48.9		ug/L		98	70 - 125
2-Hexanone	50.0	42.8		ug/L		86	53 - 140
Isopropylbenzene	50.0	51.1		ug/L		102	70 - 132
Methyl acetate	250	240		ug/L		96	56 - 131
Methylcyclohexane	50.0	48.2		ug/L		96	60 - 140
Methylene Chloride	50.0	45.9		ug/L		92	70 - 120
Methyl Ethyl Ketone	50.0	36.4		ug/L		73	51 - 134
methyl isobutyl ketone	50.0	45.2		ug/L		90	53 - 135
Methyl tert-butyl ether	50.0	46.7		ug/L		93	65 - 120
Styrene	50.0	49.1		ug/L		98	70 - 120
1,1,2,2-Tetrachloroethane	50.0	47.0		ug/L		94	68 - 133
Tetrachloroethene	50.0	49.7		ug/L		99	70 - 129
Toluene	50.0	47.9		ug/L		96	70 - 120
trans-1,2-Dichloroethene	50.0	47.6		ug/L		95	70 - 120
trans-1,3-Dichloropropene	50.0	48.2		ug/L		96	70 - 123
1,2,4-Trichlorobenzene	50.0	50.1		ug/L		100	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-315636/4
Matrix: Water
Analysis Batch: 315636

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	49.0		ug/L		98	70 - 125
1,1,2-Trichloroethane	50.0	48.1		ug/L		96	70 - 125
Trichloroethene	50.0	46.4		ug/L		93	70 - 122
Trichlorofluoromethane	50.0	48.2		ug/L		96	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.3		ug/L		99	64 - 120
Vinyl chloride	50.0	49.1		ug/L		98	63 - 127
Xylenes, Total	100	97.9		ug/L		98	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*
Dibromofluoromethane	*89*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*
Toluene-d8 (Surr)	*94*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-314969/1-A
Matrix: Water
Analysis Batch: 315145

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314969

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/03/15 09:01	12/03/15 22:02	1
Antimony	<0.020		0.020	0.0064	mg/L		12/03/15 09:01	12/03/15 22:02	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:02	1
Barium	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/03/15 09:01	12/03/15 22:02	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/03/15 09:01	12/03/15 22:02	1
Calcium	<0.20		0.20	0.059	mg/L		12/03/15 09:01	12/03/15 22:02	1
Chromium	<0.010		0.010	0.0024	mg/L		12/03/15 09:01	12/03/15 22:02	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/03/15 09:01	12/03/15 22:02	1
Copper	<0.010		0.010	0.0022	mg/L		12/03/15 09:01	12/03/15 22:02	1
Iron	<0.20		0.20	0.10	mg/L		12/03/15 09:01	12/03/15 22:02	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		12/03/15 09:01	12/03/15 22:02	1
Magnesium	<0.10		0.10	0.034	mg/L		12/03/15 09:01	12/03/15 22:02	1
Manganese	<0.010		0.010	0.0034	mg/L		12/03/15 09:01	12/03/15 22:02	1
Nickel	<0.010		0.010	0.0031	mg/L		12/03/15 09:01	12/03/15 22:02	1
Potassium	<0.50		0.50	0.16	mg/L		12/03/15 09:01	12/03/15 22:02	1
Selenium	<0.010		0.010	0.0046	mg/L		12/03/15 09:01	12/03/15 22:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/03/15 09:01	12/03/15 22:02	1
Sodium	<1.0		1.0	0.43	mg/L		12/03/15 09:01	12/03/15 22:02	1
Thallium	<0.010		0.010	0.0028	mg/L		12/03/15 09:01	12/03/15 22:02	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/03/15 09:01	12/03/15 22:02	1
Zinc	<0.020	^	0.020	0.0090	mg/L		12/03/15 09:01	12/03/15 22:02	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-314969/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315145 — **Prep Batch: 314969**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.83		mg/L		92	80 - 120
Antimony	0.500	0.474		mg/L		95	80 - 120
Arsenic	0.100	0.0973		mg/L		97	80 - 120
Barium	2.00	1.96		mg/L		98	80 - 120
Beryllium	0.0500	0.0506		mg/L		101	80 - 120
Cadmium	0.0500	0.0468		mg/L		94	80 - 120
Calcium	10.0	9.97		mg/L		100	80 - 120
Chromium	0.200	0.191		mg/L		96	80 - 120
Cobalt	0.500	0.492		mg/L		98	80 - 120
Copper	0.250	0.246		mg/L		98	80 - 120
Iron	1.00	1.11		mg/L		111	80 - 120
Lead	0.100	0.0973	^	mg/L		97	80 - 120
Magnesium	10.0	9.69		mg/L		97	80 - 120
Manganese	0.500	0.493		mg/L		99	80 - 120
Nickel	0.500	0.493		mg/L		99	80 - 120
Potassium	10.0	10.4		mg/L		104	80 - 120
Selenium	0.100	0.0856		mg/L		86	80 - 120
Silver	0.0500	0.0469		mg/L		94	80 - 120
Sodium	10.0	10.3		mg/L		103	80 - 120
Thallium	0.100	0.0902		mg/L		90	80 - 120
Vanadium	0.500	0.518		mg/L		104	80 - 120
Zinc	0.500	0.507	^	mg/L		101	80 - 120

Lab Sample ID: 500-104695-3 MS — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315145 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.10	J	2.00	2.12		mg/L		101	75 - 125
Antimony	<0.020		0.500	0.541		mg/L		108	75 - 125
Arsenic	0.011		0.100	0.129		mg/L		118	75 - 125
Barium	0.30		2.00	2.31		mg/L		101	75 - 125
Beryllium	<0.0040		0.0500	0.0514		mg/L		103	75 - 125
Cadmium	<0.0020		0.0500	0.0535		mg/L		107	75 - 125
Chromium	<0.010		0.200	0.196		mg/L		98	75 - 125
Cobalt	<0.0050		0.500	0.525		mg/L		105	75 - 125
Copper	0.0029	J	0.250	0.295		mg/L		117	75 - 125
Iron	0.30		1.00	1.44		mg/L		115	75 - 125
Lead	0.014	^	0.100	0.130	^	mg/L		116	75 - 125
Magnesium	0.74		10.0	10.8		mg/L		101	75 - 125
Manganese	0.023		0.500	0.514		mg/L		98	75 - 125
Nickel	0.0090	J	0.500	0.528		mg/L		104	75 - 125
Potassium	24	F1	10.0	35.5		mg/L		119	75 - 125
Selenium	<0.010	F1	0.100	0.0715	F1	mg/L		71	75 - 125
Silver	<0.0050		0.0500	0.0565		mg/L		113	75 - 125
Sodium	78		10.0	89.1	4	mg/L		115	75 - 125
Thallium	<0.010		0.100	0.0863		mg/L		86	75 - 125
Vanadium	<0.0050		0.500	0.538		mg/L		108	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-104695-3 MS — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315145 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Zinc	<0.020	^	0.500	0.558	^	mg/L		112	75 - 125		

Lab Sample ID: 500-104695-3 MS — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315276 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Calcium	2000		10.0	2000	4	mg/L		-48	75 - 125		

Lab Sample ID: 500-104695-3 MSD — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315145 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	0.10	J	2.00	2.26		mg/L		108	75 - 125	7	20
Antimony	<0.020		0.500	0.548		mg/L		110	75 - 125	1	20
Arsenic	0.011		0.100	0.126		mg/L		115	75 - 125	2	20
Barium	0.30		2.00	2.40		mg/L		105	75 - 125	4	20
Beryllium	<0.0040		0.0500	0.0535		mg/L		107	75 - 125	4	20
Cadmium	<0.0020		0.0500	0.0552		mg/L		110	75 - 125	3	20
Chromium	<0.010		0.200	0.191		mg/L		95	75 - 125	3	20
Cobalt	<0.0050		0.500	0.540		mg/L		108	75 - 125	3	20
Copper	0.0029	J	0.250	0.285		mg/L		113	75 - 125	3	20
Iron	0.30		1.00	1.46		mg/L		116	75 - 125	1	20
Lead	0.014	^	0.100	0.133	^	mg/L		119	75 - 125	3	20
Magnesium	0.74		10.0	11.2		mg/L		105	75 - 125	4	20
Manganese	0.023		0.500	0.535		mg/L		102	75 - 125	4	20
Nickel	0.0090	J	0.500	0.544		mg/L		107	75 - 125	3	20
Potassium	24	F1	10.0	37.2	F1	mg/L		136	75 - 125	5	20
Selenium	<0.010	F1	0.100	0.0724	F1	mg/L		72	75 - 125	1	20
Silver	<0.0050		0.0500	0.0556		mg/L		111	75 - 125	1	20
Sodium	78		10.0	93.5	4	mg/L		159	75 - 125	5	20
Thallium	<0.010		0.100	0.0861		mg/L		86	75 - 125	0	20
Vanadium	<0.0050		0.500	0.523		mg/L		105	75 - 125	3	20
Zinc	<0.020	^	0.500	0.571	^	mg/L		114	75 - 125	2	20

Lab Sample ID: 500-104695-3 MSD — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315276 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	2000		10.0	2100	4	mg/L		957	75 - 125	5	20

Lab Sample ID: 500-104695-3 DU — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315145 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Aluminum	0.10	J		0.168	J F5	mg/L				51	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-104695-3 DU — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315145 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Antimony	<0.020			<0.020		mg/L				NC	20
Arsenic	0.011			<0.010		mg/L				NC	20
Barium	0.30			0.297		mg/L				0.6	20
Beryllium	<0.0040			<0.0040		mg/L				NC	20
Cadmium	<0.0020			<0.0020		mg/L				NC	20
Chromium	<0.010			<0.010		mg/L				NC	20
Cobalt	<0.0050			<0.0050		mg/L				NC	20
Copper	0.0029	J		0.00333	J	mg/L				14	20
Iron	0.30			0.298		mg/L				0.6	20
Lead	0.014	^		0.0176	F5 ^	mg/L				21	20
Magnesium	0.74			0.797		mg/L				7	20
Manganese	0.023			0.0256		mg/L				10	20
Nickel	0.0090	J		0.0110		mg/L				20	20
Potassium	24	F1		23.4		mg/L				0.9	20
Selenium	<0.010	F1		0.00802	J	mg/L				NC	20
Silver	<0.0050			<0.0050		mg/L				NC	20
Sodium	78			77.2		mg/L				0.6	20
Thallium	<0.010			<0.010		mg/L				NC	20
Vanadium	<0.0050			<0.0050		mg/L				NC	20
Zinc	<0.020	^		<0.020	^	mg/L				NC	20

Lab Sample ID: 500-104695-3 DU — **Client Sample ID: VAP-HPT1(14-16)-120215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315276 — **Prep Batch: 314969**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Calcium	2000			1990		mg/L				0.5	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-314990/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315178 — **Prep Batch: 314990**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/03/15 13:30	12/04/15 09:40	1

Lab Sample ID: LCS 500-314990/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315178 — **Prep Batch: 314990**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00200	0.00225		mg/L		112	80 - 120		

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 500-104695-9 MS — **Client Sample ID: VAP-HPT3(13-16)-120215**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315178 — **Prep Batch: 314990**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	<0.00020		0.00100	0.00114		mg/L		114	75 - 125		

Lab Sample ID: 500-104695-9 MSD — **Client Sample ID: VAP-HPT3(13-16)-120215**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315178 — **Prep Batch: 314990**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.00107		mg/L		107	75 - 125	6	20

Lab Sample ID: 500-104695-9 DU — **Client Sample ID: VAP-HPT3(13-16)-120215**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315178 — **Prep Batch: 314990**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	<0.00020			<0.00020		mg/L				NC	20

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-316134/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316144 — **Prep Batch: 316134**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0710	J	0.20	0.043	mg/L		12/11/15 17:50	12/11/15 20:41	1

Lab Sample ID: LCS 500-316134/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316144 — **Prep Batch: 316134**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia			2.50	2.46		mg/L		98	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: TB-1(120215)

Lab Sample ID: 500-104695-1
Date Collected: 12/01/15 00:00
Matrix: Water
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315544	12/08/15 22:09	PMF	TAL CHI

Client Sample ID: VAP-HPT23(15-18)-120115

Lab Sample ID: 500-104695-2
Date Collected: 12/01/15 15:00
Matrix: Water
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	10	315636	12/09/15 14:24	TCT	TAL CHI
Total/NA	Analysis	8260B		1	315544	12/08/15 23:26	PMF	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 22:15	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 16:39	KML	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 22:10	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 09:51	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315178	12/04/15 09:49	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	316144	12/11/15 22:35	HMW	TAL CHI

Client Sample ID: VAP-HPT1(14-16)-120215

Lab Sample ID: 500-104695-3
Date Collected: 12/02/15 08:40
Matrix: Water
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	315544	12/09/15 04:13	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	50	315544	12/09/15 04:39	PMF	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315276	12/04/15 17:05	KML	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 22:54	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		10	315276	12/04/15 16:44	KML	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 22:20	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 09:55	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315178	12/04/15 09:53	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	316144	12/11/15 22:38	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT1(18-20)-120215 — Lab Sample ID: 500-104695-4

Date Collected: 12/02/15 09:20 — **Matrix: Water**
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315544	12/08/15 23:52	PMF	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 23:04	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 17:16	KML	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 22:59	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 09:59	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315178	12/04/15 09:57	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	316144	12/11/15 22:41	HMW	TAL CHI

Client Sample ID: VAP-HPT24(6-8)-120215 — Lab Sample ID: 500-104695-5

Date Collected: 12/02/15 10:20 — **Matrix: Water**
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315544	12/09/15 00:18	PMF	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 23:14	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 17:22	KML	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 23:10	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 10:06	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315178	12/04/15 10:04	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316144	12/11/15 21:18	HMW	TAL CHI

Client Sample ID: VAP-HPT24(15-18)-120215 — Lab Sample ID: 500-104695-6

Date Collected: 12/02/15 11:00 — **Matrix: Water**
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315636	12/09/15 13:57	TCT	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 23:23	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 17:26	KML	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT24(15-18)-120215 — Lab Sample ID: 500-104695-6

Date Collected: 12/02/15 11:00 — **Matrix: Water**
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 23:18	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 10:10	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315178	12/04/15 10:08	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	316144	12/11/15 21:21	HMW	TAL CHI

Client Sample ID: VAP-HPT24(20-23)-120215 — Lab Sample ID: 500-104695-7

Date Collected: 12/02/15 12:00 — **Matrix: Water**
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315544	12/09/15 00:44	PMF	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 23:41	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 17:31	KML	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 23:28	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 10:14	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315178	12/04/15 10:12	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	316144	12/11/15 22:44	HMW	TAL CHI

Client Sample ID: VAP-HPT3(8-10)-120215 — Lab Sample ID: 500-104695-8

Date Collected: 12/02/15 13:00 — **Matrix: Water**
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315544	12/09/15 01:10	PMF	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 23:51	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 17:36	KML	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 23:47	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 10:18	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Client Sample ID: VAP-HPT3(8-10)-120215

Lab Sample ID: 500-104695-8
Date Collected: 12/02/15 13:00
Matrix: Water
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	315178	12/04/15 10:16	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316144	12/11/15 21:27	HMW	TAL CHI

Client Sample ID: VAP-HPT3(13-16)-120215

Lab Sample ID: 500-104695-9
Date Collected: 12/02/15 13:40
Matrix: Water
Date Received: 12/02/15 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315544	12/09/15 01:36	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	315544	12/09/15 02:02	PMF	TAL CHI
Dissolved	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315145	12/03/15 23:59	PJ1	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315276	12/04/15 17:40	KML	TAL CHI
Total/NA	Prep	3010A			314969	12/03/15 09:01	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315145	12/03/15 23:55	PJ1	TAL CHI
Dissolved	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315178	12/04/15 10:22	MJD	TAL CHI
Total/NA	Prep	7470A			314990	12/03/15 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315178	12/04/15 10:20	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316134	12/11/15 17:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	316144	12/11/15 21:30	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104695-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-104695 COC

Chain of Custody Record

Lab Job #: 500-104695

Chain of Custody Number:

Page 1 of 1

Temperature °C of Cooler: 3.1

(optional)

Report To
Contact: Ellyn Gates
Company: Arcadis
Address: 1205 S. LaSalle
Address: Ste 1350
Phone: 312-575-3772
Fax: 312-917-1572
E-Mail: Ellyn.Gates@Arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0002
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago/IL
Lab Project #:
Sampler: Bruce Evans
Lab PM: Bonnie Stadelmann

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs (Preservative 1)	Total Metals (Preservative 3)	Dissolved Metals (Filtered) (Preservative 3)	Ammonia (Preservative 2)						Comments
1		TB-1 (120215)	—	—	2	W	2									Trip Blank
2		VAP-HPT23(15-18)-120115	12/1/15	15:00	6	W	3	1	1	1						
3		VAP-HPT1(14-16)-120215	12/2/15	08:40	6	W	3	1	1	1						
4		VAP-HPT1(18-20)-120215	12/2/15	09:20	6	W	3	1	1	1						
5		VAP-HPT24(6-8)-120215	12/2/15	10:20	6	W	3	1	1	1						
6		VAP-HPT24(15-18)-120215	12/2/15	11:00	6	W	3	1	1	1						
7		VAP-HPT24(20-23)-120215	12/2/15	12:00	6	W	3	1	1	1						
8		VAP-HPT3(8-10)-120215	12/2/15	13:00	6	W	3	1	1	1						
9		VAP-HPT3(13-16)-120215	12/2/15	13:40	6	W	3	1	1	1						

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Bruce Evans	Arcadis	12/2/15	14:10	David Baker	TA	12/2/15	14:10
David Baker	TA	12/2/15	15:05	[illegible]	TA-CHI	12/2/15	1505
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Cooler / Samples on Ice
Questions Call Ellyn Gates @ 312-575-3772

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-104695-1

Login Number: 104695
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-104781-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
12/17/2015 10:07:51 AM
Therese Hargraves, Project Manager I
therese.hargraves@testamericainc.com

Designee for

Bonnie Stadelmann, Senior Project Manager
(708)534-5200
bonnie.stadelmann@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-104781-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-104781-1

Comments
No additional comments.

Receipt
The samples were received on 12/4/2015 7:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4º C.

GC/MS VOA
Method(s) 8260B: The following sample was diluted due to the abundance of non-target analytes: VAP-HPT4(17-19)-120315 (500-104781-8). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: VAP-HPT3(18-21)-120215 (500-104781-2), VAP-HPT26(10-13)-120315 (500-104781-4), VAP-HPT26(15-18)-120315 (500-104781-5) and VAP-HPT25(13-16)-120315 (500-104781-10).

Method(s) 8260B: The method blank for batches 315731 and 315850 were non-detect for all target analytes. Samples associated with the method blanks detected Acetone just above the reporting limit. Acetone is a known lab contaminant; therefore all low level detects for this compound should be considered lab contamination. The results have been flagged with a "CN" to denote the probable contamination.

VAP-HPT26(10-13)-120315 (500-104781-4) and VAP-HPT25(13-16)-120315 (500-104781-10)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: TB-1(120315) — Lab Sample ID: 500-104781-1

No Detections.

Client Sample ID: VAP-HPT3(18-21)-120215 — Lab Sample ID: 500-104781-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9.2		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	110		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	2.7		1.0	0.51	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	60		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	2.7		1.0	0.40	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	19		1.0	0.36	ug/L	1		8260B	Total/NA
Dichlorodifluoromethane	7.6		2.0	0.67	ug/L	1		8260B	Total/NA
Ethylbenzene	0.89		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	11		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	1.1		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	4.8		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	33		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.042		0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.10		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	2.3		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0059		0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.036		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	180		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.32		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.035		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	1.1		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	240		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.6		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	84		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.5		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.96		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	63		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0076	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.032		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	220		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.089		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	4.7		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.33		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	99		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0043	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0028	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	69		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.15		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0084	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	60		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	220		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.041		0.020	0.0090	mg/L	1		6010C	Dissolved
Ammonia	94	B	8.0	1.7	mg/L	4		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(6-9)-120315 — Lab Sample ID: 500-104781-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.55		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.66		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0018	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	32		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0061	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0029	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.027		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	28		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.086		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	52		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.10		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.036		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	37		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	180		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0036	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.33		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	29		0.20	0.059	mg/L	1		6010C	Dissolved
Cobalt	0.0028	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0041	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	25		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0061		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	51		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.062		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.035		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	37		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	180		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.11		0.020	0.0090	mg/L	1		6010C	Dissolved
Ammonia	58	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT26(10-13)-120315 — Lab Sample ID: 500-104781-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.6	cn	5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	1.3		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	9.5		1.0	0.39	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.60	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.3		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.0		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.26	J	0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	0.87	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	4.9		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0098	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0089	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.56		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0032		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.039		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0048	J	0.0050	0.00096	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(10-13)-120315 (Continued) — Lab Sample ID: 500-104781-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	0.089		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	53		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.29		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	86		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.45		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.034		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	60		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	220		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0086		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.39		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.44		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0017	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Copper	0.0026	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	21		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	85		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.28		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0036	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	62		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.000074	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	93	B	4.0	0.86	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT26(15-18)-120315 — Lab Sample ID: 500-104781-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.9		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	6.6		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.9		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.85	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.7		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	4.1		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	0.39	J	0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	0.76	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	25		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.022		0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.061		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.8		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0039	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.015		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	160		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.19		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.029		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.62		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	180		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	3.2		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	95		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.1		0.010	0.0034	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(15-18)-120315 (Continued) — Lab Sample ID: 500-104781-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.14		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	70		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0076	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0086		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	220		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.057		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	5.2		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.72		0.20	0.062	mg/L	1		6010C	Dissolved
Barium	0.49		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0020		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0089	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.022		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	26		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.085		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	91		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.010		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	69		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	220		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0027	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.20		0.020	0.0090	mg/L	1		6010C	Dissolved
Ammonia	83	B	4.0	0.86	mg/L	2		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT4(9-12)-120315 — Lab Sample ID: 500-104781-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	10		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	2.0		1.0	0.39	ug/L	1		8260B	Total/NA
Isopropylbenzene	0.80	J	1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.48	J	0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	1.1		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	13		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0090	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.013		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.2		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0015	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0055		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	86		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.25		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0095		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.25		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	35		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.4		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	87		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.71		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.053		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	65		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.0035	J	0.0050	0.0013	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(9-12)-120315 (Continued) — Lab Sample ID: 500-104781-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	260		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.035		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.7		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.17	J	0.20	0.062	mg/L	1		6010C	Dissolved
Barium	0.60		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	37		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0052	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Copper	0.0039	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	1.3		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.017		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	69		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.077		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0060	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	60		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	250		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0019	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.030		0.020	0.0090	mg/L	1		6010C	Dissolved
Ammonia	35	B	2.0	0.43	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT4(13-15)-120315 — Lab Sample ID: 500-104781-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	10		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	1.9		1.0	0.39	ug/L	1		8260B	Total/NA
Isopropylbenzene	0.70	J	1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.56		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	1.5		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	10		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0099	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0061	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.3		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0016	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0033		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.098		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0064		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.073		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	47		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.40		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	93		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.2		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.035		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	63		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.0017	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	260		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.025		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.65		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.95		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0018	J	0.0020	0.00094	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: VAP-HPT4(13-15)-120315 (Continued) — Lab Sample ID: 500-104781-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	51		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0022	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	2.3		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	76		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.097		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0048	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	63		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	260		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	38	B	2.0	0.43	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT4(17-19)-120315 — Lab Sample ID: 500-104781-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	140		1.0	0.29	ug/L	2		8260B	Total/NA
Chlorobenzene	3.1		2.0	0.77	ug/L	2		8260B	Total/NA
Ethylbenzene	12		1.0	0.37	ug/L	2		8260B	Total/NA
Isopropylbenzene	2.2		2.0	0.77	ug/L	2		8260B	Total/NA
Toluene	21		1.0	0.30	ug/L	2		8260B	Total/NA
Xylenes, Total	41		2.0	0.44	ug/L	2		8260B	Total/NA
Aluminum	14		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.012	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0056	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.1		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0026	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0034		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	170		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.11		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0077		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.097		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	53		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.25		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	98		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.7		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.050		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	66		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0046	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	260		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.026		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.65		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.062	J	0.20	0.062	mg/L	1		6010C	Dissolved
Barium	0.71		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0017	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	72		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0024	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	2.4		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	79		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0066	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	62		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	260		1.0	0.43	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(17-19)-120315 (Continued) — Lab Sample ID: 500-104781-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.0030	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Ammonia	45	B	2.0	0.43	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT25(8-11)-120315 — Lab Sample ID: 500-104781-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.3		1.0	0.41	ug/L	1		8260B	Total/NA
Aluminum	38		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.039		0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.046		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.5		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0061		0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.020		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	200		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.22		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.021		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.88		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	120		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.2		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	120		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.2		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.20		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	65		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.015		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	300		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.13		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.9		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	1.3		0.20	0.062	mg/L	1		6010C	Dissolved
Barium	0.065		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0021		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.010		0.010	0.0024	mg/L	1		6010C	Dissolved
Copper	0.011		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	7.5		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.032		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	110		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.11		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.013		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	66		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	320		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0066		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.055		0.020	0.0090	mg/L	1		6010C	Dissolved
Ammonia	31	B	2.0	0.43	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT25(13-16)-120315 — Lab Sample ID: 500-104781-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	7.9	cn	5.0	1.7	ug/L	1		8260B	Total/NA
Chlorobenzene	0.46	J	1.0	0.39	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.5		1.0	0.41	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: VAP-HPT25(13-16)-120315 (Continued) — Lab Sample ID: 500-104781-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.49	J	0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	0.74	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	19		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.012	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.024		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.68		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0032	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0057		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	390		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.12		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.016		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.29		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	110		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.36		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	120		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.7		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.089		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	70		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0069	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0023	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	320		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.049		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.89		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.12		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	140		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0026	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	1.8		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	100		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.088		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0072	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	65		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	300		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0027	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Ammonia	37	B	2.0	0.43	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT25(18-21)-120315 — Lab Sample ID: 500-104781-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	8.2		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.012	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0064	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.33		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0035		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	270		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.068		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0064		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.12		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	27		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.16		0.0050	0.0024	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(18-21)-120315 (Continued) — Lab Sample ID: 500-104781-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	100		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.49		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.049		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	75		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.0058		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	360		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.032		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.43		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.11		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0017	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	200		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0027	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	0.34		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	86		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.054		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0088	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	70		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	340		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0057		0.0050	0.0019	mg/L	1		6010C	Dissolved
Ammonia	32	B	3.2	0.69	mg/L	4		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-104781-1	TB-1(120315)	Water	12/02/15 00:00	12/04/15 07:15
500-104781-2	VAP-HPT3(18-21)-120215	Water	12/02/15 14:55	12/04/15 07:15
500-104781-3	VAP-HPT26(6-9)-120315	Water	12/03/15 08:50	12/04/15 07:15
500-104781-4	VAP-HPT26(10-13)-120315	Water	12/03/15 09:20	12/04/15 07:15
500-104781-5	VAP-HPT26(15-18)-120315	Water	12/03/15 10:00	12/04/15 07:15
500-104781-6	VAP-HPT4(9-12)-120315	Water	12/03/15 11:10	12/04/15 07:15
500-104781-7	VAP-HPT4(13-15)-120315	Water	12/03/15 11:45	12/04/15 07:15
500-104781-8	VAP-HPT4(17-19)-120315	Water	12/03/15 12:30	12/04/15 07:15
500-104781-9	VAP-HPT25(8-11)-120315	Water	12/03/15 13:45	12/04/15 07:15
500-104781-10	VAP-HPT25(13-16)-120315	Water	12/03/15 14:15	12/04/15 07:15
500-104781-11	VAP-HPT25(18-21)-120315	Water	12/03/15 15:05	12/04/15 07:15

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: TB-1(120315)

Date Collected: 12/02/15 00:00
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 23:51	1
Benzene	<0.50		0.50	0.15	ug/L			12/09/15 23:51	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 23:51	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 23:51	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 23:51	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 23:51	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 23:51	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/09/15 23:51	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 23:51	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 23:51	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 23:51	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 23:51	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 23:51	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 23:51	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 23:51	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 23:51	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 23:51	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 23:51	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 23:51	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 23:51	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 23:51	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 23:51	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 23:51	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 23:51	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 23:51	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 23:51	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 23:51	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/09/15 23:51	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 23:51	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 23:51	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 23:51	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 23:51	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 23:51	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 23:51	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 23:51	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 23:51	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 23:51	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 23:51	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 23:51	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 23:51	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 23:51	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 23:51	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 23:51	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 23:51	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 23:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 23:51	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 23:51	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/09/15 23:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: TB-1(120315)

Date Collected: 12/02/15 00:00
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-1

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		75 - 120		12/09/15 23:51	1
Dibromofluoromethane	91		75 - 120		12/09/15 23:51	1
1,2-Dichloroethane-d4 (Surr)	99		75 - 125		12/09/15 23:51	1
Toluene-d8 (Surr)	90		75 - 120		12/09/15 23:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT3(18-21)-120215

Lab Sample ID: 500-104781-2

Date Collected: 12/02/15 14:55
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 01:11	1
Benzene	**9.2**		0.50	0.15	ug/L			12/10/15 01:11	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 01:11	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 01:11	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 01:11	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 01:11	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 01:11	1
Chlorobenzene	**110**		1.0	0.39	ug/L			12/10/15 01:11	1
Chloroethane	**2.7**		1.0	0.51	ug/L			12/10/15 01:11	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 01:11	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 01:11	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 01:11	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 01:11	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 01:11	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 01:11	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 01:11	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 01:11	1
1,2-Dichlorobenzene	**60**		1.0	0.33	ug/L			12/10/15 01:11	1
1,3-Dichlorobenzene	**2.7**		1.0	0.40	ug/L			12/10/15 01:11	1
1,4-Dichlorobenzene	**19**		1.0	0.36	ug/L			12/10/15 01:11	1
Dichlorodifluoromethane	**7.6**		2.0	0.67	ug/L			12/10/15 01:11	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 01:11	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 01:11	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 01:11	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 01:11	1
Ethylbenzene	**0.89**		0.50	0.18	ug/L			12/10/15 01:11	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 01:11	1
Isopropylbenzene	**11**		1.0	0.39	ug/L			12/10/15 01:11	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 01:11	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 01:11	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 01:11	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 01:11	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 01:11	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 01:11	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 01:11	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 01:11	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 01:11	1
Toluene	**1.1**		0.50	0.15	ug/L			12/10/15 01:11	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 01:11	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 01:11	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 01:11	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 01:11	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 01:11	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 01:11	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 01:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 01:11	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 01:11	1
Xylenes, Total	**4.8**		1.0	0.22	ug/L			12/10/15 01:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT3(18-21)-120215

Date Collected: 12/02/15 14:55
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*12/10/15 01:11*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*12/10/15 01:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*12/10/15 01:11*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*12/10/15 01:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**33**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 20:25	1
Antimony	**0.042**		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 20:25	1
Arsenic	**0.10**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:25	1
Barium	**2.3**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:25	1
Beryllium	**0.0059**		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 20:25	1
Cadmium	**0.036**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 20:25	1
Calcium	**180**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 20:25	1
Chromium	**0.32**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 20:25	1
Cobalt	**0.035**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 20:25	1
Copper	**1.1**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:25	1
Iron	**240**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 20:25	1
Lead	**1.6**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 20:25	1
Magnesium	**84**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 20:25	1
Manganese	**1.5**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 20:25	1
Nickel	**0.96**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:25	1
Potassium	**63**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 20:25	1
Selenium	**0.0076**	**J**	0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 20:25	1
Silver	**0.032**		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 20:25	1
Sodium	**220**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 20:25	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 20:25	1
Vanadium	**0.089**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 20:25	1
Zinc	**4.7**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 20:25	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 20:30	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 20:30	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:30	1
Barium	**0.33**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:30	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 20:30	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 20:30	1
Calcium	**99**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 20:30	1
Chromium	**0.0043**	**J**	0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 20:30	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 20:30	1
Copper	**0.0028**	**J**	0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:30	1
Iron	**28**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 20:30	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 20:30	1
Magnesium	**69**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 20:30	1
Manganese	**0.15**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 20:30	1
Nickel	**0.0084**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:30	1
Potassium	**60**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 20:30	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 20:30	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 20:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT3(18-21)-120215

Lab Sample ID: 500-104781-2

Date Collected: 12/02/15 14:55

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**220**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 20:30	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 20:30	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 20:30	1
Zinc	**0.041**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 20:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 09:54	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 09:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**94**	**B**	8.0	1.7	mg/L		12/15/15 17:40	12/15/15 20:26	4

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(6-9)-120315

Lab Sample ID: 500-104781-3

Date Collected: 12/03/15 08:50
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 01:38	1
Benzene	<0.50		0.50	0.15	ug/L			12/10/15 01:38	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 01:38	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 01:38	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 01:38	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 01:38	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 01:38	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/10/15 01:38	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 01:38	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 01:38	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 01:38	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 01:38	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 01:38	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 01:38	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 01:38	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 01:38	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 01:38	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/10/15 01:38	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 01:38	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/10/15 01:38	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 01:38	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 01:38	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 01:38	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 01:38	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 01:38	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 01:38	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 01:38	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/10/15 01:38	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 01:38	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 01:38	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 01:38	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 01:38	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 01:38	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 01:38	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 01:38	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 01:38	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 01:38	1
Toluene	<0.50		0.50	0.15	ug/L			12/10/15 01:38	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 01:38	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 01:38	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 01:38	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 01:38	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 01:38	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 01:38	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 01:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 01:38	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 01:38	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/10/15 01:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(6-9)-120315

Date Collected: 12/03/15 08:50
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*12/10/15 01:38*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*12/10/15 01:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*12/10/15 01:38*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*12/10/15 01:38*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.55**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 20:55	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 20:55	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:55	1
Barium	**0.66**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:55	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 20:55	1
Cadmium	**0.0018**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 20:55	1
Calcium	**32**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 20:55	1
Chromium	**0.0061**	**J**	0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 20:55	1
Cobalt	**0.0029**	**J**	0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 20:55	1
Copper	**0.027**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:55	1
Iron	**28**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 20:55	1
Lead	**0.086**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 20:55	1
Magnesium	**52**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 20:55	1
Manganese	**0.10**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 20:55	1
Nickel	**0.036**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:55	1
Potassium	**37**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 20:55	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 20:55	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 20:55	1
Sodium	**180**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 20:55	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 20:55	1
Vanadium	**0.0036**	**J**	0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 20:55	1
Zinc	**0.33**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 20:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 20:59	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 20:59	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:59	1
Barium	**0.65**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 20:59	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 20:59	1
Calcium	**29**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 20:59	1
Chromium	<0.010		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 20:59	1
Cobalt	**0.0028**	**J**	0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 20:59	1
Copper	**0.0041**	**J**	0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:59	1
Iron	**25**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 20:59	1
Lead	**0.0061**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 20:59	1
Magnesium	**51**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 20:59	1
Manganese	**0.062**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 20:59	1
Nickel	**0.035**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:59	1
Potassium	**37**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 20:59	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 20:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 20:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(6-9)-120315

Lab Sample ID: 500-104781-3

Date Collected: 12/03/15 08:50

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**180**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 20:59	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 20:59	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 20:59	1
Zinc	**0.11**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 20:59	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 09:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**58**	**B**	4.0	0.86	mg/L		12/15/15 17:40	12/15/15 22:06	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(10-13)-120315

Lab Sample ID: 500-104781-4

Date Collected: 12/03/15 09:20
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**5.6**	**cn**	5.0	1.7	ug/L			12/10/15 02:04	1
Benzene	**1.3**		0.50	0.15	ug/L			12/10/15 02:04	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 02:04	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 02:04	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 02:04	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 02:04	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 02:04	1
Chlorobenzene	**9.5**		1.0	0.39	ug/L			12/10/15 02:04	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 02:04	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 02:04	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 02:04	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 02:04	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 02:04	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 02:04	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 02:04	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 02:04	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 02:04	1
1,2-Dichlorobenzene	**0.60**	**J**	1.0	0.33	ug/L			12/10/15 02:04	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 02:04	1
1,4-Dichlorobenzene	**2.3**		1.0	0.36	ug/L			12/10/15 02:04	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 02:04	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 02:04	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 02:04	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 02:04	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 02:04	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 02:04	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 02:04	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			12/10/15 02:04	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 02:04	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 02:04	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 02:04	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 02:04	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 02:04	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 02:04	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 02:04	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 02:04	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 02:04	1
Toluene	**0.26**	**J**	0.50	0.15	ug/L			12/10/15 02:04	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 02:04	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 02:04	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 02:04	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 02:04	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 02:04	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 02:04	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 02:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 02:04	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 02:04	1
Xylenes, Total	**0.87**	**J**	1.0	0.22	ug/L			12/10/15 02:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(10-13)-120315

Date Collected: 12/03/15 09:20
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*12/10/15 02:04*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*12/10/15 02:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*12/10/15 02:04*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*12/10/15 02:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.9**		0.20	0.062	mg/L		12/07/15 08:55	12/08/15 12:14	1
Antimony	**0.0098**	**J**	0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:11	1
Arsenic	**0.0089**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:11	1
Barium	**0.56**		0.010	0.0022	mg/L		12/07/15 08:55	12/08/15 12:14	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/08/15 12:14	1
Cadmium	**0.0032**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:11	1
Calcium	**130**		0.20	0.059	mg/L		12/07/15 08:55	12/08/15 12:14	1
Chromium	**0.039**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:11	1
Cobalt	**0.0048**	**J**	0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:11	1
Copper	**0.089**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:11	1
Iron	**53**		0.20	0.10	mg/L		12/07/15 08:55	12/08/15 12:14	1
Lead	**0.29**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:11	1
Magnesium	**86**		0.10	0.034	mg/L		12/07/15 08:55	12/08/15 12:14	1
Manganese	**0.45**		0.010	0.0034	mg/L		12/07/15 08:55	12/08/15 12:14	1
Nickel	**0.034**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:11	1
Potassium	**60**		0.50	0.16	mg/L		12/07/15 08:55	12/08/15 12:14	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:11	1
Sodium	**220**		1.0	0.43	mg/L		12/07/15 08:55	12/08/15 12:14	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:11	1
Vanadium	**0.0086**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:11	1
Zinc	**0.39**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:16	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:16	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:16	1
Barium	**0.44**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:16	1
Cadmium	**0.0017**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:16	1
Calcium	**120**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:16	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:16	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:16	1
Copper	**0.0026**	**J**	0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:16	1
Iron	**21**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:16	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:16	1
Magnesium	**85**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:16	1
Manganese	**0.28**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:16	1
Nickel	**0.0036**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:16	1
Potassium	**62**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:16	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:16	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(10-13)-120315

Lab Sample ID: 500-104781-4

Date Collected: 12/03/15 09:20

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**240**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:16	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:16	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:16	1
Zinc	<0.020		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000074**	**J**	0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:02	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**93**	**B**	4.0	0.86	mg/L		12/15/15 17:40	12/15/15 20:32	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(15-18)-120315

Lab Sample ID: 500-104781-5

Date Collected: 12/03/15 10:00
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 02:31	1
Benzene	**1.9**		0.50	0.15	ug/L			12/10/15 02:31	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 02:31	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 02:31	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 02:31	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 02:31	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 02:31	1
Chlorobenzene	**6.6**		1.0	0.39	ug/L			12/10/15 02:31	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 02:31	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 02:31	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 02:31	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 02:31	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 02:31	1
Cyclohexane	**1.9**		1.0	0.49	ug/L			12/10/15 02:31	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 02:31	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 02:31	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 02:31	1
1,2-Dichlorobenzene	**0.85**	**J**	1.0	0.33	ug/L			12/10/15 02:31	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 02:31	1
1,4-Dichlorobenzene	**2.7**		1.0	0.36	ug/L			12/10/15 02:31	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 02:31	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 02:31	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 02:31	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 02:31	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 02:31	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 02:31	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 02:31	1
Isopropylbenzene	**3.0**		1.0	0.39	ug/L			12/10/15 02:31	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 02:31	1
Methylcyclohexane	**4.1**		1.0	0.32	ug/L			12/10/15 02:31	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 02:31	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 02:31	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 02:31	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 02:31	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 02:31	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 02:31	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 02:31	1
Toluene	**0.39**	**J**	0.50	0.15	ug/L			12/10/15 02:31	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 02:31	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 02:31	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 02:31	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 02:31	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 02:31	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 02:31	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 02:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 02:31	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 02:31	1
Xylenes, Total	**0.76**	**J**	1.0	0.22	ug/L			12/10/15 02:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(15-18)-120315

Date Collected: 12/03/15 10:00
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*		*12/10/15 02:31*	*1*
Dibromofluoromethane	*94*		*75 - 120*		*12/10/15 02:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*		*12/10/15 02:31*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*12/10/15 02:31*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**25**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:21	1
Antimony	**0.022**		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:21	1
Arsenic	**0.061**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:21	1
Barium	**1.8**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:21	1
Beryllium	**0.0039**	**J**	0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:21	1
Cadmium	**0.015**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:21	1
Calcium	**160**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:21	1
Chromium	**0.19**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:21	1
Cobalt	**0.029**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:21	1
Copper	**0.62**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:21	1
Iron	**180**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:21	1
Lead	**3.2**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:21	1
Magnesium	**95**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:21	1
Manganese	**1.1**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:21	1
Nickel	**0.14**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:21	1
Potassium	**70**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:21	1
Selenium	**0.0076**	**J**	0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:21	1
Silver	**0.0086**		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:21	1
Sodium	**220**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:21	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:21	1
Vanadium	**0.057**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:21	1
Zinc	**5.2**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:21	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.72**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:26	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:26	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:26	1
Barium	**0.49**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:26	1
Cadmium	**0.0020**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:26	1
Calcium	**120**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:26	1
Chromium	**0.0089**	**J**	0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:26	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:26	1
Copper	**0.022**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:26	1
Iron	**26**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:26	1
Lead	**0.085**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:26	1
Magnesium	**91**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:26	1
Manganese	**0.18**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:26	1
Nickel	**0.010**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:26	1
Potassium	**69**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:26	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(15-18)-120315

Lab Sample ID: 500-104781-5

Date Collected: 12/03/15 10:00

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	220		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:26	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:26	1
Vanadium	0.0027	J	0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:26	1
Zinc	0.20		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:10	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	83	B	4.0	0.86	mg/L		12/15/15 17:40	12/15/15 20:34	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(9-12)-120315

Lab Sample ID: 500-104781-6

Date Collected: 12/03/15 11:10
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 07:34	1
Benzene	**10**		0.50	0.15	ug/L			12/10/15 07:34	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 07:34	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 07:34	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 07:34	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 07:34	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 07:34	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			12/10/15 07:34	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 07:34	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 07:34	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 07:34	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 07:34	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 07:34	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 07:34	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 07:34	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 07:34	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 07:34	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/10/15 07:34	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 07:34	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/10/15 07:34	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 07:34	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 07:34	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 07:34	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 07:34	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 07:34	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 07:34	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 07:34	1
Isopropylbenzene	**0.80**	**J**	1.0	0.39	ug/L			12/10/15 07:34	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 07:34	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 07:34	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 07:34	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 07:34	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 07:34	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 07:34	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 07:34	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 07:34	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 07:34	1
Toluene	**0.48**	**J**	0.50	0.15	ug/L			12/10/15 07:34	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 07:34	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 07:34	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 07:34	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 07:34	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 07:34	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 07:34	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 07:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 07:34	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 07:34	1
Xylenes, Total	**1.1**		1.0	0.22	ug/L			12/10/15 07:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(9-12)-120315

Date Collected: 12/03/15 11:10
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*75 - 120*		*12/10/15 07:34*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*12/10/15 07:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*12/10/15 07:34*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*12/10/15 07:34*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**13**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:31	1
Antimony	**0.0090**	**J**	0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:31	1
Arsenic	**0.013**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:31	1
Barium	**1.2**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:31	1
Beryllium	**0.0015**	**J**	0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:31	1
Cadmium	**0.0055**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:31	1
Calcium	**86**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:31	1
Chromium	**0.25**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:31	1
Cobalt	**0.0095**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:31	1
Copper	**0.25**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:31	1
Iron	**35**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:31	1
Lead	**1.4**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:31	1
Magnesium	**87**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:31	1
Manganese	**0.71**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:31	1
Nickel	**0.053**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:31	1
Potassium	**65**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:31	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:31	1
Silver	**0.0035**	**J**	0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:31	1
Sodium	**260**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:31	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:31	1
Vanadium	**0.035**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:31	1
Zinc	**1.7**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.17**	**J**	0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:37	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:37	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:37	1
Barium	**0.60**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:37	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:37	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:37	1
Calcium	**37**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:37	1
Chromium	**0.0052**	**J**	0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:37	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:37	1
Copper	**0.0039**	**J**	0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:37	1
Iron	**1.3**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:37	1
Lead	**0.017**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:37	1
Magnesium	**69**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:37	1
Manganese	**0.077**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:37	1
Nickel	**0.0060**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:37	1
Potassium	**60**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:37	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:37	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(9-12)-120315

Lab Sample ID: 500-104781-6

Date Collected: 12/03/15 11:10

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**250**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:37	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:37	1
Vanadium	**0.0019**	**J**	0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:37	1
Zinc	**0.030**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:14	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**35**	**B**	2.0	0.43	mg/L		12/15/15 17:40	12/15/15 20:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(13-15)-120315

Lab Sample ID: 500-104781-7

Date Collected: 12/03/15 11:45
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 08:01	1
Benzene	**10**		0.50	0.15	ug/L			12/10/15 08:01	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 08:01	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 08:01	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 08:01	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 08:01	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 08:01	1
Chlorobenzene	**1.9**		1.0	0.39	ug/L			12/10/15 08:01	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 08:01	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 08:01	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 08:01	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 08:01	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 08:01	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 08:01	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 08:01	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 08:01	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 08:01	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/10/15 08:01	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 08:01	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/10/15 08:01	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 08:01	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 08:01	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 08:01	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 08:01	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 08:01	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 08:01	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 08:01	1
Isopropylbenzene	**0.70**	**J**	1.0	0.39	ug/L			12/10/15 08:01	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 08:01	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 08:01	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 08:01	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 08:01	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 08:01	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 08:01	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 08:01	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 08:01	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 08:01	1
Toluene	**0.56**		0.50	0.15	ug/L			12/10/15 08:01	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 08:01	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 08:01	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 08:01	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 08:01	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 08:01	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 08:01	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 08:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 08:01	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 08:01	1
Xylenes, Total	**1.5**		1.0	0.22	ug/L			12/10/15 08:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(13-15)-120315

Date Collected: 12/03/15 11:45
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-7

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*12/10/15 08:01*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*12/10/15 08:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*12/10/15 08:01*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*12/10/15 08:01*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**10**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:42	1
Antimony	**0.0099**	**J**	0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:42	1
Arsenic	**0.0061**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:42	1
Barium	**1.3**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:42	1
Beryllium	**0.0016**	**J**	0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:42	1
Cadmium	**0.0033**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:42	1
Calcium	**130**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:42	1
Chromium	**0.098**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:42	1
Cobalt	**0.0064**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:42	1
Copper	**0.073**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:42	1
Iron	**47**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:42	1
Lead	**0.40**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:42	1
Magnesium	**93**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:42	1
Manganese	**1.2**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:42	1
Nickel	**0.035**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:42	1
Potassium	**63**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:42	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:42	1
Silver	**0.0017**	**J**	0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:42	1
Sodium	**260**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:42	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:42	1
Vanadium	**0.025**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:42	1
Zinc	**0.65**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:42	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:47	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:47	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:47	1
Barium	**0.95**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:47	1
Cadmium	**0.0018**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:47	1
Calcium	**51**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:47	1
Chromium	<0.010		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:47	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:47	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:47	1
Iron	**2.3**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:47	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:47	1
Magnesium	**76**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:47	1
Manganese	**0.097**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:47	1
Nickel	**0.0048**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:47	1
Potassium	**63**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:47	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(13-15)-120315

Lab Sample ID: 500-104781-7

Date Collected: 12/03/15 11:45
Matrix: Water
Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**260**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:47	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:47	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:47	1
Zinc	<0.020		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:18	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**38**	**B**	2.0	0.43	mg/L		12/15/15 17:40	12/15/15 20:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(17-19)-120315

Lab Sample ID: 500-104781-8

Date Collected: 12/03/15 12:30
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10		10	3.5	ug/L			12/10/15 12:31	2
Benzene	**140**		1.0	0.29	ug/L			12/10/15 12:31	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			12/10/15 12:31	2
Bromoform	<2.0		2.0	0.97	ug/L			12/10/15 12:31	2
Bromomethane	<4.0		4.0	1.6	ug/L			12/10/15 12:31	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			12/10/15 12:31	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			12/10/15 12:31	2
Chlorobenzene	**3.1**		2.0	0.77	ug/L			12/10/15 12:31	2
Chloroethane	<2.0		2.0	1.0	ug/L			12/10/15 12:31	2
Chloroform	<2.0		2.0	0.74	ug/L			12/10/15 12:31	2
Chloromethane	<2.0		2.0	0.64	ug/L			12/10/15 12:31	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			12/10/15 12:31	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			12/10/15 12:31	2
Cyclohexane	<2.0		2.0	0.97	ug/L			12/10/15 12:31	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			12/10/15 12:31	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			12/10/15 12:31	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			12/10/15 12:31	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			12/10/15 12:31	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			12/10/15 12:31	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			12/10/15 12:31	2
Dichlorodifluoromethane	<4.0		4.0	1.3	ug/L			12/10/15 12:31	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			12/10/15 12:31	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			12/10/15 12:31	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			12/10/15 12:31	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			12/10/15 12:31	2
Ethylbenzene	**12**		1.0	0.37	ug/L			12/10/15 12:31	2
2-Hexanone	<10		10	3.1	ug/L			12/10/15 12:31	2
Isopropylbenzene	**2.2**		2.0	0.77	ug/L			12/10/15 12:31	2
Methyl acetate	<10		10	4.0	ug/L			12/10/15 12:31	2
Methylcyclohexane	<2.0		2.0	0.63	ug/L			12/10/15 12:31	2
Methylene Chloride	<10		10	3.3	ug/L			12/10/15 12:31	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			12/10/15 12:31	2
methyl isobutyl ketone	<10		10	4.3	ug/L			12/10/15 12:31	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			12/10/15 12:31	2
Styrene	<2.0		2.0	0.77	ug/L			12/10/15 12:31	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			12/10/15 12:31	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			12/10/15 12:31	2
Toluene	**21**		1.0	0.30	ug/L			12/10/15 12:31	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			12/10/15 12:31	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			12/10/15 12:31	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			12/10/15 12:31	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			12/10/15 12:31	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			12/10/15 12:31	2
Trichloroethene	<1.0		1.0	0.33	ug/L			12/10/15 12:31	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			12/10/15 12:31	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			12/10/15 12:31	2
Vinyl chloride	<1.0		1.0	0.41	ug/L			12/10/15 12:31	2
Xylenes, Total	**41**		2.0	0.44	ug/L			12/10/15 12:31	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(17-19)-120315

Date Collected: 12/03/15 12:30
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-8

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*75 - 120*		*12/10/15 12:31*	*2*
Dibromofluoromethane	*91*		*75 - 120*		*12/10/15 12:31*	*2*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*		*12/10/15 12:31*	*2*
Toluene-d8 (Surr)	*91*		*75 - 120*		*12/10/15 12:31*	*2*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**14**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:53	1
Antimony	**0.012**	**J**	0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:53	1
Arsenic	**0.0056**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:53	1
Barium	**1.1**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:53	1
Beryllium	**0.0026**	**J**	0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:53	1
Cadmium	**0.0034**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:53	1
Calcium	**170**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:53	1
Chromium	**0.11**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:53	1
Cobalt	**0.0077**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:53	1
Copper	**0.097**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:53	1
Iron	**53**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:53	1
Lead	**0.25**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:53	1
Magnesium	**98**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:53	1
Manganese	**1.7**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:53	1
Nickel	**0.050**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:53	1
Potassium	**66**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:53	1
Selenium	**0.0046**	**J**	0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:53	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:53	1
Sodium	**260**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:53	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:53	1
Vanadium	**0.026**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:53	1
Zinc	**0.65**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.062**	**J**	0.20	0.062	mg/L		12/07/15 08:55	12/07/15 21:58	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 21:58	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:58	1
Barium	**0.71**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 21:58	1
Cadmium	**0.0017**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 21:58	1
Calcium	**72**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 21:58	1
Chromium	<0.010		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 21:58	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 21:58	1
Copper	**0.0024**	**J**	0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 21:58	1
Iron	**2.4**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 21:58	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 21:58	1
Magnesium	**79**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 21:58	1
Manganese	**0.17**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 21:58	1
Nickel	**0.0066**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 21:58	1
Potassium	**62**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 21:58	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 21:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 21:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(17-19)-120315

Lab Sample ID: 500-104781-8

Date Collected: 12/03/15 12:30

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**260**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 21:58	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 21:58	1
Vanadium	**0.0030**	**J**	0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 21:58	1
Zinc	<0.020		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 21:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:21	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**45**	**B**	2.0	0.43	mg/L		12/15/15 17:40	12/15/15 20:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(8-11)-120315

Lab Sample ID: 500-104781-9

Date Collected: 12/03/15 13:45

Matrix: Water

Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 11:10	1
Benzene	<0.50		0.50	0.15	ug/L			12/10/15 11:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 11:10	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 11:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 11:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 11:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 11:10	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/10/15 11:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 11:10	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 11:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 11:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 11:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 11:10	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 11:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 11:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 11:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 11:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/10/15 11:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 11:10	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/10/15 11:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 11:10	1
1,1-Dichloroethane	**2.3**		1.0	0.41	ug/L			12/10/15 11:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 11:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 11:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 11:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 11:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 11:10	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/10/15 11:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 11:10	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 11:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 11:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 11:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 11:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 11:10	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 11:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 11:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 11:10	1
Toluene	<0.50		0.50	0.15	ug/L			12/10/15 11:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 11:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 11:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 11:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 11:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 11:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 11:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 11:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 11:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 11:10	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/10/15 11:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(8-11)-120315

Date Collected: 12/03/15 13:45
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-9

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*12/10/15 11:10*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*12/10/15 11:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*12/10/15 11:10*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*12/10/15 11:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**38**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 22:15	1
Antimony	**0.039**		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 22:15	1
Arsenic	**0.046**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:15	1
Barium	**1.5**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:15	1
Beryllium	**0.0061**		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 22:15	1
Cadmium	**0.020**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 22:15	1
Calcium	**200**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 22:15	1
Chromium	**0.22**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 22:15	1
Cobalt	**0.021**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 22:15	1
Copper	**0.88**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:15	1
Iron	**120**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 22:15	1
Lead	**1.2**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 22:15	1
Magnesium	**120**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 22:15	1
Manganese	**1.2**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 22:15	1
Nickel	**0.20**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:15	1
Potassium	**65**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 22:15	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 22:15	1
Silver	**0.015**		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 22:15	1
Sodium	**300**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 22:15	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 22:15	1
Vanadium	**0.13**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 22:15	1
Zinc	**1.9**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 22:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.3**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 22:21	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 22:21	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:21	1
Barium	**0.065**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:21	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 22:21	1
Cadmium	**0.0021**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 22:21	1
Calcium	**130**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 22:21	1
Chromium	**0.010**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 22:21	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 22:21	1
Copper	**0.011**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:21	1
Iron	**7.5**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 22:21	1
Lead	**0.032**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 22:21	1
Magnesium	**110**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 22:21	1
Manganese	**0.11**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 22:21	1
Nickel	**0.013**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:21	1
Potassium	**66**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 22:21	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 22:21	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 22:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(8-11)-120315

Lab Sample ID: 500-104781-9

Date Collected: 12/03/15 13:45

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**320**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 22:21	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 22:21	1
Vanadium	**0.0066**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 22:21	1
Zinc	**0.055**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 22:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:25	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**31**	**B**	2.0	0.43	mg/L		12/15/15 17:40	12/15/15 20:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(13-16)-120315

Lab Sample ID: 500-104781-10

Date Collected: 12/03/15 14:15
Matrix: Water
Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**7.9**	**cn**	5.0	1.7	ug/L			12/10/15 11:37	1
Benzene	<0.50		0.50	0.15	ug/L			12/10/15 11:37	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 11:37	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 11:37	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 11:37	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 11:37	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 11:37	1
Chlorobenzene	**0.46**	**J**	1.0	0.39	ug/L			12/10/15 11:37	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 11:37	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 11:37	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 11:37	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 11:37	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 11:37	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 11:37	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 11:37	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 11:37	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 11:37	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/10/15 11:37	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 11:37	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/10/15 11:37	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 11:37	1
1,1-Dichloroethane	**1.5**		1.0	0.41	ug/L			12/10/15 11:37	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 11:37	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 11:37	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 11:37	1
Ethylbenzene	**0.49**	**J**	0.50	0.18	ug/L			12/10/15 11:37	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 11:37	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/10/15 11:37	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 11:37	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 11:37	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 11:37	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 11:37	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 11:37	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 11:37	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 11:37	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 11:37	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 11:37	1
Toluene	<0.50		0.50	0.15	ug/L			12/10/15 11:37	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 11:37	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 11:37	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 11:37	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 11:37	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 11:37	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 11:37	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 11:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 11:37	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 11:37	1
Xylenes, Total	**0.74**	**J**	1.0	0.22	ug/L			12/10/15 11:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(13-16)-120315

Date Collected: 12/03/15 14:15
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-10

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*12/10/15 11:37*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*12/10/15 11:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 125*		*12/10/15 11:37*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*12/10/15 11:37*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**19**		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 22:26	1
Antimony	**0.012**	**J**	0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 22:26	1
Arsenic	**0.024**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:26	1
Barium	**0.68**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:26	1
Beryllium	**0.0032**	**J**	0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 22:26	1
Cadmium	**0.0057**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 22:26	1
Calcium	**390**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 22:26	1
Chromium	**0.12**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 22:26	1
Cobalt	**0.016**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 22:26	1
Copper	**0.29**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:26	1
Iron	**110**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 22:26	1
Lead	**0.36**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 22:26	1
Magnesium	**120**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 22:26	1
Manganese	**1.7**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 22:26	1
Nickel	**0.089**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:26	1
Potassium	**70**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 22:26	1
Selenium	**0.0069**	**J**	0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 22:26	1
Silver	**0.0023**	**J**	0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 22:26	1
Sodium	**320**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 22:26	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 22:26	1
Vanadium	**0.049**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 22:26	1
Zinc	**0.89**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 22:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 22:31	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 22:31	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:31	1
Barium	**0.12**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 22:31	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 22:31	1
Calcium	**140**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 22:31	1
Chromium	<0.010		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 22:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 22:31	1
Copper	**0.0026**	**J**	0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:31	1
Iron	**1.8**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 22:31	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 22:31	1
Magnesium	**100**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 22:31	1
Manganese	**0.088**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 22:31	1
Nickel	**0.0072**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:31	1
Potassium	**65**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 22:31	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 22:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 22:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(13-16)-120315

Lab Sample ID: 500-104781-10

Date Collected: 12/03/15 14:15

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**300**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 22:31	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 22:31	1
Vanadium	**0.0027**	**J**	0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 22:31	1
Zinc	<0.020		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 22:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**37**	**B**	2.0	0.43	mg/L		12/15/15 17:40	12/15/15 20:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(18-21)-120315

Lab Sample ID: 500-104781-11

Date Collected: 12/03/15 15:05

Matrix: Water

Date Received: 12/04/15 07:15

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 12:04	1
Benzene	<0.50		0.50	0.15	ug/L			12/10/15 12:04	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 12:04	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 12:04	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 12:04	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 12:04	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 12:04	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/10/15 12:04	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 12:04	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 12:04	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 12:04	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 12:04	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 12:04	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 12:04	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 12:04	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 12:04	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 12:04	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/10/15 12:04	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 12:04	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/10/15 12:04	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 12:04	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 12:04	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 12:04	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 12:04	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 12:04	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 12:04	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 12:04	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/10/15 12:04	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 12:04	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 12:04	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 12:04	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 12:04	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 12:04	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 12:04	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 12:04	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 12:04	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 12:04	1
Toluene	<0.50		0.50	0.15	ug/L			12/10/15 12:04	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 12:04	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 12:04	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 12:04	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 12:04	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 12:04	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 12:04	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 12:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 12:04	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 12:04	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/10/15 12:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(18-21)-120315

Date Collected: 12/03/15 15:05
Date Received: 12/04/15 07:15

Lab Sample ID: 500-104781-11

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*12/10/15 12:04*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*12/10/15 12:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*12/10/15 12:04*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*12/10/15 12:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8.2**		0.20	0.062	mg/L		12/07/15 08:55	12/08/15 12:24	1
Antimony	**0.012**	**J**	0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 22:37	1
Arsenic	**0.0064**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:37	1
Barium	**0.33**		0.010	0.0022	mg/L		12/07/15 08:55	12/08/15 12:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/08/15 12:24	1
Cadmium	**0.0035**		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 22:37	1
Calcium	**270**		0.20	0.059	mg/L		12/07/15 08:55	12/08/15 12:24	1
Chromium	**0.068**		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 22:37	1
Cobalt	**0.0064**		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 22:37	1
Copper	**0.12**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:37	1
Iron	**27**		0.20	0.10	mg/L		12/07/15 08:55	12/08/15 12:24	1
Lead	**0.16**		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 22:37	1
Magnesium	**100**		0.10	0.034	mg/L		12/07/15 08:55	12/08/15 12:24	1
Manganese	**0.49**		0.010	0.0034	mg/L		12/07/15 08:55	12/08/15 12:24	1
Nickel	**0.049**		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:37	1
Potassium	**75**		0.50	0.16	mg/L		12/07/15 08:55	12/08/15 12:24	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 22:37	1
Silver	**0.0058**		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 22:37	1
Sodium	**360**		1.0	0.43	mg/L		12/07/15 08:55	12/08/15 12:24	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 22:37	1
Vanadium	**0.032**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 22:37	1
Zinc	**0.43**		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 22:37	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 22:42	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 22:42	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:42	1
Barium	**0.11**		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:42	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 22:42	1
Cadmium	**0.0017**	**J**	0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 22:42	1
Calcium	**200**		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 22:42	1
Chromium	**0.0027**	**J**	0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 22:42	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 22:42	1
Copper	<0.010		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 22:42	1
Iron	**0.34**		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 22:42	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 22:42	1
Magnesium	**86**		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 22:42	1
Manganese	**0.054**		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 22:42	1
Nickel	**0.0088**	**J**	0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 22:42	1
Potassium	**70**		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 22:42	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 22:42	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 22:42	1

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(18-21)-120315

Lab Sample ID: 500-104781-11

Date Collected: 12/03/15 15:05

Matrix: Water

Date Received: 12/04/15 07:15

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**340**		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 22:42	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 22:42	1
Vanadium	**0.0057**		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 22:42	1
Zinc	<0.020		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 22:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:37	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 10:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**32**	**B**	3.2	0.69	mg/L		12/15/15 17:40	12/15/15 20:57	4

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

GC/MS VOA

Analysis Batch: 315731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-1	TB-1(120315)	Total/NA	Water	8260B	
500-104781-2	VAP-HPT3(18-21)-120215	Total/NA	Water	8260B	
500-104781-3	VAP-HPT26(6-9)-120315	Total/NA	Water	8260B	
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	8260B	
500-104781-5	VAP-HPT26(15-18)-120315	Total/NA	Water	8260B	
500-104781-6	VAP-HPT4(9-12)-120315	Total/NA	Water	8260B	
500-104781-7	VAP-HPT4(13-15)-120315	Total/NA	Water	8260B	
LCS 500-315731/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-315731/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 315850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-8	VAP-HPT4(17-19)-120315	Total/NA	Water	8260B	
500-104781-9	VAP-HPT25(8-11)-120315	Total/NA	Water	8260B	
500-104781-10	VAP-HPT25(13-16)-120315	Total/NA	Water	8260B	
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	8260B	
LCS 500-315850/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-315850/6	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 315181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-2	VAP-HPT3(18-21)-120215	Dissolved	Water	7470A	
500-104781-2	VAP-HPT3(18-21)-120215	Total/NA	Water	7470A	
500-104781-3	VAP-HPT26(6-9)-120315	Dissolved	Water	7470A	
500-104781-3	VAP-HPT26(6-9)-120315	Total/NA	Water	7470A	
500-104781-4	VAP-HPT26(10-13)-120315	Dissolved	Water	7470A	
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	7470A	
500-104781-5	VAP-HPT26(15-18)-120315	Dissolved	Water	7470A	
500-104781-5	VAP-HPT26(15-18)-120315	Total/NA	Water	7470A	
500-104781-6	VAP-HPT4(9-12)-120315	Dissolved	Water	7470A	
500-104781-6	VAP-HPT4(9-12)-120315	Total/NA	Water	7470A	
500-104781-7	VAP-HPT4(13-15)-120315	Dissolved	Water	7470A	
500-104781-7	VAP-HPT4(13-15)-120315	Total/NA	Water	7470A	
500-104781-8	VAP-HPT4(17-19)-120315	Dissolved	Water	7470A	
500-104781-8	VAP-HPT4(17-19)-120315	Total/NA	Water	7470A	
500-104781-9	VAP-HPT25(8-11)-120315	Dissolved	Water	7470A	
500-104781-9	VAP-HPT25(8-11)-120315	Total/NA	Water	7470A	
500-104781-10	VAP-HPT25(13-16)-120315	Dissolved	Water	7470A	
500-104781-10	VAP-HPT25(13-16)-120315	Total/NA	Water	7470A	
500-104781-11	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	7470A	
500-104781-11 DU	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	
500-104781-11 MS	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	
500-104781-11 MSD	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	
LCS 500-315181/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-315181/12-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 315356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-2	VAP-HPT3(18-21)-120215	Dissolved	Water	3010A	
500-104781-2	VAP-HPT3(18-21)-120215	Total/NA	Water	3010A	
500-104781-2 DU	VAP-HPT3(18-21)-120215	Dissolved	Water	3010A	
500-104781-2 MS	VAP-HPT3(18-21)-120215	Dissolved	Water	3010A	
500-104781-2 MSD	VAP-HPT3(18-21)-120215	Dissolved	Water	3010A	
500-104781-3	VAP-HPT26(6-9)-120315	Dissolved	Water	3010A	
500-104781-3	VAP-HPT26(6-9)-120315	Total/NA	Water	3010A	
500-104781-4	VAP-HPT26(10-13)-120315	Dissolved	Water	3010A	
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	3010A	
500-104781-5	VAP-HPT26(15-18)-120315	Dissolved	Water	3010A	
500-104781-5	VAP-HPT26(15-18)-120315	Total/NA	Water	3010A	
500-104781-6	VAP-HPT4(9-12)-120315	Dissolved	Water	3010A	
500-104781-6	VAP-HPT4(9-12)-120315	Total/NA	Water	3010A	
500-104781-7	VAP-HPT4(13-15)-120315	Dissolved	Water	3010A	
500-104781-7	VAP-HPT4(13-15)-120315	Total/NA	Water	3010A	
500-104781-8	VAP-HPT4(17-19)-120315	Dissolved	Water	3010A	
500-104781-8	VAP-HPT4(17-19)-120315	Total/NA	Water	3010A	
500-104781-9	VAP-HPT25(8-11)-120315	Dissolved	Water	3010A	
500-104781-9	VAP-HPT25(8-11)-120315	Total/NA	Water	3010A	
500-104781-10	VAP-HPT25(13-16)-120315	Dissolved	Water	3010A	
500-104781-10	VAP-HPT25(13-16)-120315	Total/NA	Water	3010A	
500-104781-11	VAP-HPT25(18-21)-120315	Dissolved	Water	3010A	
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	3010A	
LCS 500-315356/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-315356/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 315397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-2	VAP-HPT3(18-21)-120215	Dissolved	Water	7470A	315181
500-104781-2	VAP-HPT3(18-21)-120215	Total/NA	Water	7470A	315181
500-104781-3	VAP-HPT26(6-9)-120315	Dissolved	Water	7470A	315181
500-104781-3	VAP-HPT26(6-9)-120315	Total/NA	Water	7470A	315181
500-104781-4	VAP-HPT26(10-13)-120315	Dissolved	Water	7470A	315181
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	7470A	315181
500-104781-5	VAP-HPT26(15-18)-120315	Dissolved	Water	7470A	315181
500-104781-5	VAP-HPT26(15-18)-120315	Total/NA	Water	7470A	315181
500-104781-6	VAP-HPT4(9-12)-120315	Dissolved	Water	7470A	315181
500-104781-6	VAP-HPT4(9-12)-120315	Total/NA	Water	7470A	315181
500-104781-7	VAP-HPT4(13-15)-120315	Dissolved	Water	7470A	315181
500-104781-7	VAP-HPT4(13-15)-120315	Total/NA	Water	7470A	315181
500-104781-8	VAP-HPT4(17-19)-120315	Dissolved	Water	7470A	315181
500-104781-8	VAP-HPT4(17-19)-120315	Total/NA	Water	7470A	315181
500-104781-9	VAP-HPT25(8-11)-120315	Dissolved	Water	7470A	315181
500-104781-9	VAP-HPT25(8-11)-120315	Total/NA	Water	7470A	315181
500-104781-10	VAP-HPT25(13-16)-120315	Dissolved	Water	7470A	315181
500-104781-10	VAP-HPT25(13-16)-120315	Total/NA	Water	7470A	315181
500-104781-11	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	315181
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	7470A	315181
500-104781-11 DU	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	315181
500-104781-11 MS	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	315181
500-104781-11 MSD	VAP-HPT25(18-21)-120315	Dissolved	Water	7470A	315181

Metals (Continued)

Analysis Batch: 315397 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-315181/13-A	Lab Control Sample	Total/NA	Water	7470A	315181
MB 500-315181/12-A	Method Blank	Total/NA	Water	7470A	315181

Analysis Batch: 315507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-2	VAP-HPT3(18-21)-120215	Dissolved	Water	6010C	315356
500-104781-2	VAP-HPT3(18-21)-120215	Total/NA	Water	6010C	315356
500-104781-2 DU	VAP-HPT3(18-21)-120215	Dissolved	Water	6010C	315356
500-104781-2 MS	VAP-HPT3(18-21)-120215	Dissolved	Water	6010C	315356
500-104781-2 MSD	VAP-HPT3(18-21)-120215	Dissolved	Water	6010C	315356
500-104781-3	VAP-HPT26(6-9)-120315	Dissolved	Water	6010C	315356
500-104781-3	VAP-HPT26(6-9)-120315	Total/NA	Water	6010C	315356
500-104781-4	VAP-HPT26(10-13)-120315	Dissolved	Water	6010C	315356
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	6010C	315356
500-104781-5	VAP-HPT26(15-18)-120315	Dissolved	Water	6010C	315356
500-104781-5	VAP-HPT26(15-18)-120315	Total/NA	Water	6010C	315356
500-104781-6	VAP-HPT4(9-12)-120315	Dissolved	Water	6010C	315356
500-104781-6	VAP-HPT4(9-12)-120315	Total/NA	Water	6010C	315356
500-104781-7	VAP-HPT4(13-15)-120315	Dissolved	Water	6010C	315356
500-104781-7	VAP-HPT4(13-15)-120315	Total/NA	Water	6010C	315356
500-104781-8	VAP-HPT4(17-19)-120315	Dissolved	Water	6010C	315356
500-104781-8	VAP-HPT4(17-19)-120315	Total/NA	Water	6010C	315356
500-104781-9	VAP-HPT25(8-11)-120315	Dissolved	Water	6010C	315356
500-104781-9	VAP-HPT25(8-11)-120315	Total/NA	Water	6010C	315356
500-104781-10	VAP-HPT25(13-16)-120315	Dissolved	Water	6010C	315356
500-104781-10	VAP-HPT25(13-16)-120315	Total/NA	Water	6010C	315356
500-104781-11	VAP-HPT25(18-21)-120315	Dissolved	Water	6010C	315356
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	6010C	315356
LCS 500-315356/2-A	Lab Control Sample	Total/NA	Water	6010C	315356
MB 500-315356/1-A	Method Blank	Total/NA	Water	6010C	315356

Analysis Batch: 315593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	6010C	315356
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	6010C	315356

General Chemistry

Prep Batch: 316398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-2	VAP-HPT3(18-21)-120215	Total/NA	Water	SM 4500 NH3 B	
500-104781-3	VAP-HPT26(6-9)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-5	VAP-HPT26(15-18)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-6	VAP-HPT4(9-12)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-7	VAP-HPT4(13-15)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-8	VAP-HPT4(17-19)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-9	VAP-HPT25(8-11)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-10	VAP-HPT25(13-16)-120315	Total/NA	Water	SM 4500 NH3 B	
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	SM 4500 NH3 B	

General Chemistry (Continued)

Prep Batch: 316398 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-316398/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-316398/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 316591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-104781-2	VAP-HPT3(18-21)-120215	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-3	VAP-HPT26(6-9)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-4	VAP-HPT26(10-13)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-5	VAP-HPT26(15-18)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-6	VAP-HPT4(9-12)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-7	VAP-HPT4(13-15)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-8	VAP-HPT4(17-19)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-9	VAP-HPT25(8-11)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-10	VAP-HPT25(13-16)-120315	Total/NA	Water	SM 4500 NH3 G	316398
500-104781-11	VAP-HPT25(18-21)-120315	Total/NA	Water	SM 4500 NH3 G	316398
LCS 500-316398/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	316398
MB 500-316398/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	316398

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(75-120)	(75-120)	(75-125)	(75-120)
500-104781-1	TB-1(120315)	93	91	99	90
500-104781-2	VAP-HPT3(18-21)-120215	94	90	99	91
500-104781-3	VAP-HPT26(6-9)-120315	95	90	99	93
500-104781-4	VAP-HPT26(10-13)-120315	93	91	100	92
500-104781-5	VAP-HPT26(15-18)-120315	91	94	103	90
500-104781-6	VAP-HPT4(9-12)-120315	101	93	101	93
500-104781-7	VAP-HPT4(13-15)-120315	95	91	100	92
500-104781-8	VAP-HPT4(17-19)-120315	97	91	103	91
500-104781-9	VAP-HPT25(8-11)-120315	94	92	102	91
500-104781-10	VAP-HPT25(13-16)-120315	94	91	97	92
500-104781-11	VAP-HPT25(18-21)-120315	96	91	101	90
LCS 500-315731/4	Lab Control Sample	94	94	101	90
LCS 500-315850/4	Lab Control Sample	93	91	97	93
MB 500-315731/6	Method Blank	96	92	104	91
MB 500-315850/6	Method Blank	92	92	99	90

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-315731/6
Matrix: Water
Analysis Batch: 315731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/09/15 22:30	1
Benzene	<0.50		0.50	0.15	ug/L			12/09/15 22:30	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/09/15 22:30	1
Bromoform	<1.0		1.0	0.48	ug/L			12/09/15 22:30	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/09/15 22:30	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/09/15 22:30	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/09/15 22:30	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/09/15 22:30	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/09/15 22:30	1
Chloroform	<1.0		1.0	0.37	ug/L			12/09/15 22:30	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/09/15 22:30	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/09/15 22:30	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/09/15 22:30	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/09/15 22:30	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/09/15 22:30	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/09/15 22:30	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/09/15 22:30	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/09/15 22:30	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/09/15 22:30	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/09/15 22:30	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/09/15 22:30	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/09/15 22:30	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/09/15 22:30	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/09/15 22:30	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/09/15 22:30	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/09/15 22:30	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/09/15 22:30	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/09/15 22:30	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/09/15 22:30	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/09/15 22:30	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/09/15 22:30	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/09/15 22:30	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/09/15 22:30	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/09/15 22:30	1
Styrene	<1.0		1.0	0.39	ug/L			12/09/15 22:30	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/09/15 22:30	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/09/15 22:30	1
Toluene	<0.50		0.50	0.15	ug/L			12/09/15 22:30	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/09/15 22:30	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/09/15 22:30	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/09/15 22:30	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/09/15 22:30	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/09/15 22:30	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/09/15 22:30	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/09/15 22:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/09/15 22:30	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/09/15 22:30	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/09/15 22:30	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		75 - 120		12/09/15 22:30	1
Dibromofluoromethane	92		75 - 120		12/09/15 22:30	1
1,2-Dichloroethane-d4 (Surr)	104		75 - 125		12/09/15 22:30	1
Toluene-d8 (Surr)	91		75 - 120		12/09/15 22:30	1

Lab Sample ID: LCS 500-315731/4
Matrix: Water
Analysis Batch: 315731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	42.1		ug/L		84	47 - 131
Benzene	50.0	45.8		ug/L		92	70 - 120
Bromodichloromethane	50.0	47.7		ug/L		95	70 - 127
Bromoform	50.0	46.3		ug/L		93	70 - 135
Bromomethane	50.0	51.5		ug/L		103	30 - 170
Carbon disulfide	50.0	44.3		ug/L		89	61 - 120
Carbon tetrachloride	50.0	45.9		ug/L		92	70 - 136
Chlorobenzene	50.0	46.8		ug/L		94	70 - 120
Chloroethane	50.0	51.5		ug/L		103	40 - 150
Chloroform	50.0	47.9		ug/L		96	70 - 120
Chloromethane	50.0	47.9		ug/L		96	45 - 140
cis-1,2-Dichloroethene	50.0	47.8		ug/L		96	70 - 120
cis-1,3-Dichloropropene	50.0	46.6		ug/L		93	70 - 122
Cyclohexane	50.0	46.3		ug/L		93	60 - 133
Dibromochloromethane	50.0	48.2		ug/L		96	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	45.0		ug/L		90	59 - 139
1,2-Dibromoethane	50.0	49.9		ug/L		100	70 - 124
1,2-Dichlorobenzene	50.0	47.7		ug/L		95	70 - 123
1,3-Dichlorobenzene	50.0	45.6		ug/L		91	70 - 122
1,4-Dichlorobenzene	50.0	45.9		ug/L		92	70 - 120
Dichlorodifluoromethane	50.0	45.2		ug/L		90	30 - 150
1,1-Dichloroethane	50.0	47.9		ug/L		96	70 - 127
1,2-Dichloroethane	50.0	51.6		ug/L		103	66 - 132
1,1-Dichloroethene	50.0	45.6		ug/L		91	68 - 121
1,2-Dichloropropane	50.0	47.9		ug/L		96	70 - 127
Ethylbenzene	50.0	45.8		ug/L		92	70 - 125
2-Hexanone	50.0	47.2		ug/L		94	53 - 140
Isopropylbenzene	50.0	45.2		ug/L		90	70 - 132
Methyl acetate	250	257		ug/L		103	56 - 131
Methylcyclohexane	50.0	45.4		ug/L		91	60 - 140
Methylene Chloride	50.0	47.5		ug/L		95	70 - 120
Methyl Ethyl Ketone	50.0	42.0		ug/L		84	51 - 134
methyl isobutyl ketone	50.0	48.4		ug/L		97	53 - 135
Methyl tert-butyl ether	50.0	50.4		ug/L		101	65 - 120
Styrene	50.0	47.7		ug/L		95	70 - 120
1,1,2,2-Tetrachloroethane	50.0	47.4		ug/L		95	68 - 133
Tetrachloroethene	50.0	46.1		ug/L		92	70 - 129
Toluene	50.0	44.8		ug/L		90	70 - 120
trans-1,2-Dichloroethene	50.0	46.3		ug/L		93	70 - 120
trans-1,3-Dichloropropene	50.0	48.2		ug/L		96	70 - 123
1,2,4-Trichlorobenzene	50.0	48.0		ug/L		96	70 - 125
1,1,1-Trichloroethane	50.0	47.2		ug/L		94	70 - 125
1,1,2-Trichloroethane	50.0	48.5		ug/L		97	70 - 125
Trichloroethene	50.0	46.1		ug/L		92	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-315731/4
Matrix: Water
Analysis Batch: 315731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	46.9		ug/L		94	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.3		ug/L		95	64 - 120
Vinyl chloride	50.0	48.1		ug/L		96	63 - 127
Xylenes, Total	100	93.2		ug/L		93	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*
Dibromofluoromethane	*94*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*
Toluene-d8 (Surr)	*90*		*75 - 120*

Lab Sample ID: MB 500-315850/6
Matrix: Water
Analysis Batch: 315850

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			12/10/15 10:43	1
Benzene	<0.50		0.50	0.15	ug/L			12/10/15 10:43	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			12/10/15 10:43	1
Bromoform	<1.0		1.0	0.48	ug/L			12/10/15 10:43	1
Bromomethane	<2.0		2.0	0.80	ug/L			12/10/15 10:43	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			12/10/15 10:43	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			12/10/15 10:43	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			12/10/15 10:43	1
Chloroethane	<1.0		1.0	0.51	ug/L			12/10/15 10:43	1
Chloroform	<1.0		1.0	0.37	ug/L			12/10/15 10:43	1
Chloromethane	<1.0		1.0	0.32	ug/L			12/10/15 10:43	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			12/10/15 10:43	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			12/10/15 10:43	1
Cyclohexane	<1.0		1.0	0.49	ug/L			12/10/15 10:43	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			12/10/15 10:43	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			12/10/15 10:43	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			12/10/15 10:43	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			12/10/15 10:43	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			12/10/15 10:43	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			12/10/15 10:43	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			12/10/15 10:43	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			12/10/15 10:43	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			12/10/15 10:43	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			12/10/15 10:43	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			12/10/15 10:43	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			12/10/15 10:43	1
2-Hexanone	<5.0		5.0	1.6	ug/L			12/10/15 10:43	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			12/10/15 10:43	1
Methyl acetate	<5.0		5.0	2.0	ug/L			12/10/15 10:43	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			12/10/15 10:43	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			12/10/15 10:43	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-315850/6
Matrix: Water
Analysis Batch: 315850

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			12/10/15 10:43	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			12/10/15 10:43	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			12/10/15 10:43	1
Styrene	<1.0		1.0	0.39	ug/L			12/10/15 10:43	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			12/10/15 10:43	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			12/10/15 10:43	1
Toluene	<0.50		0.50	0.15	ug/L			12/10/15 10:43	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			12/10/15 10:43	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			12/10/15 10:43	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			12/10/15 10:43	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			12/10/15 10:43	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			12/10/15 10:43	1
Trichloroethene	<0.50		0.50	0.16	ug/L			12/10/15 10:43	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			12/10/15 10:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			12/10/15 10:43	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			12/10/15 10:43	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			12/10/15 10:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*12/10/15 10:43*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*12/10/15 10:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*12/10/15 10:43*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*12/10/15 10:43*	*1*

Lab Sample ID: LCS 500-315850/4
Matrix: Water
Analysis Batch: 315850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	33.7		ug/L		67	47 - 131
Benzene	50.0	42.4		ug/L		85	70 - 120
Bromodichloromethane	50.0	43.6		ug/L		87	70 - 127
Bromoform	50.0	44.7		ug/L		89	70 - 135
Bromomethane	50.0	49.3		ug/L		99	30 - 170
Carbon disulfide	50.0	41.9		ug/L		84	61 - 120
Carbon tetrachloride	50.0	44.1		ug/L		88	70 - 136
Chlorobenzene	50.0	45.5		ug/L		91	70 - 120
Chloroethane	50.0	50.8		ug/L		102	40 - 150
Chloroform	50.0	43.3		ug/L		87	70 - 120
Chloromethane	50.0	45.7		ug/L		91	45 - 140
cis-1,2-Dichloroethene	50.0	43.3		ug/L		87	70 - 120
cis-1,3-Dichloropropene	50.0	45.0		ug/L		90	70 - 122
Cyclohexane	50.0	44.3		ug/L		89	60 - 133
Dibromochloromethane	50.0	45.8		ug/L		92	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	44.0		ug/L		88	59 - 139
1,2-Dibromoethane	50.0	47.9		ug/L		96	70 - 124
1,2-Dichlorobenzene	50.0	46.5		ug/L		93	70 - 123
1,3-Dichlorobenzene	50.0	46.0		ug/L		92	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-315850/4
Matrix: Water
Analysis Batch: 315850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	45.7		ug/L		91	70 - 120
Dichlorodifluoromethane	50.0	47.9		ug/L		96	30 - 150
1,1-Dichloroethane	50.0	44.3		ug/L		89	70 - 127
1,2-Dichloroethane	50.0	46.7		ug/L		93	66 - 132
1,1-Dichloroethene	50.0	43.4		ug/L		87	68 - 121
1,2-Dichloropropane	50.0	44.2		ug/L		88	70 - 127
Ethylbenzene	50.0	45.0		ug/L		90	70 - 125
2-Hexanone	50.0	43.9		ug/L		88	53 - 140
Isopropylbenzene	50.0	45.5		ug/L		91	70 - 132
Methyl acetate	250	231		ug/L		92	56 - 131
Methylcyclohexane	50.0	43.9		ug/L		88	60 - 140
Methylene Chloride	50.0	42.2		ug/L		84	70 - 120
Methyl Ethyl Ketone	50.0	37.3		ug/L		75	51 - 134
methyl isobutyl ketone	50.0	45.3		ug/L		91	53 - 135
Methyl tert-butyl ether	50.0	45.4		ug/L		91	65 - 120
Styrene	50.0	46.1		ug/L		92	70 - 120
1,1,2,2-Tetrachloroethane	50.0	45.8		ug/L		92	68 - 133
Tetrachloroethene	50.0	45.4		ug/L		91	70 - 129
Toluene	50.0	43.7		ug/L		87	70 - 120
trans-1,2-Dichloroethene	50.0	42.3		ug/L		85	70 - 120
trans-1,3-Dichloropropene	50.0	45.7		ug/L		91	70 - 123
1,2,4-Trichlorobenzene	50.0	49.2		ug/L		98	70 - 125
1,1,1-Trichloroethane	50.0	44.7		ug/L		89	70 - 125
1,1,2-Trichloroethane	50.0	45.7		ug/L		91	70 - 125
Trichloroethene	50.0	43.4		ug/L		87	70 - 122
Trichlorofluoromethane	50.0	43.8		ug/L		88	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	46.0		ug/L		92	64 - 120
Vinyl chloride	50.0	47.7		ug/L		95	63 - 127
Xylenes, Total	100	90.9		ug/L		91	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*
Dibromofluoromethane	*91*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 125*
Toluene-d8 (Surr)	*93*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-315356/1-A
Matrix: Water
Analysis Batch: 315507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315356

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		12/07/15 08:55	12/07/15 20:17	1
Antimony	<0.020		0.020	0.0064	mg/L		12/07/15 08:55	12/07/15 20:17	1
Arsenic	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:17	1
Barium	<0.010		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:17	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-315356/1-A
Matrix: Water
Analysis Batch: 315507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315356

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0040		0.0040	0.00085	mg/L		12/07/15 08:55	12/07/15 20:17	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		12/07/15 08:55	12/07/15 20:17	1
Calcium	<0.20		0.20	0.059	mg/L		12/07/15 08:55	12/07/15 20:17	1
Chromium	<0.010		0.010	0.0024	mg/L		12/07/15 08:55	12/07/15 20:17	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		12/07/15 08:55	12/07/15 20:17	1
Copper	<0.010		0.010	0.0022	mg/L		12/07/15 08:55	12/07/15 20:17	1
Iron	<0.20		0.20	0.10	mg/L		12/07/15 08:55	12/07/15 20:17	1
Lead	<0.0050		0.0050	0.0024	mg/L		12/07/15 08:55	12/07/15 20:17	1
Magnesium	<0.10		0.10	0.034	mg/L		12/07/15 08:55	12/07/15 20:17	1
Manganese	<0.010		0.010	0.0034	mg/L		12/07/15 08:55	12/07/15 20:17	1
Nickel	<0.010		0.010	0.0031	mg/L		12/07/15 08:55	12/07/15 20:17	1
Potassium	<0.50		0.50	0.16	mg/L		12/07/15 08:55	12/07/15 20:17	1
Selenium	<0.010		0.010	0.0046	mg/L		12/07/15 08:55	12/07/15 20:17	1
Silver	<0.0050		0.0050	0.0013	mg/L		12/07/15 08:55	12/07/15 20:17	1
Sodium	<1.0		1.0	0.43	mg/L		12/07/15 08:55	12/07/15 20:17	1
Thallium	<0.010		0.010	0.0028	mg/L		12/07/15 08:55	12/07/15 20:17	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		12/07/15 08:55	12/07/15 20:17	1
Zinc	<0.020		0.020	0.0090	mg/L		12/07/15 08:55	12/07/15 20:17	1

Lab Sample ID: LCS 500-315356/2-A
Matrix: Water
Analysis Batch: 315507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315356

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.97		mg/L		99	80 - 120
Antimony	0.500	0.504		mg/L		101	80 - 120
Arsenic	0.100	0.0962		mg/L		96	80 - 120
Barium	2.00	1.99		mg/L		100	80 - 120
Beryllium	0.0500	0.0485		mg/L		97	80 - 120
Cadmium	0.0500	0.0509		mg/L		102	80 - 120
Calcium	10.0	9.82		mg/L		98	80 - 120
Chromium	0.200	0.202		mg/L		101	80 - 120
Cobalt	0.500	0.499		mg/L		100	80 - 120
Copper	0.250	0.261		mg/L		104	80 - 120
Iron	1.00	1.02		mg/L		102	80 - 120
Lead	0.100	0.0998		mg/L		100	80 - 120
Magnesium	10.0	9.67		mg/L		97	80 - 120
Manganese	0.500	0.486		mg/L		97	80 - 120
Nickel	0.500	0.502		mg/L		100	80 - 120
Potassium	10.0	9.71		mg/L		97	80 - 120
Selenium	0.100	0.0935		mg/L		94	80 - 120
Silver	0.0500	0.0491		mg/L		98	80 - 120
Sodium	10.0	9.95		mg/L		100	80 - 120
Thallium	0.100	0.0944		mg/L		94	80 - 120
Vanadium	0.500	0.516		mg/L		103	80 - 120
Zinc	0.500	0.479		mg/L		96	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-104781-2 MS — **Client Sample ID: VAP-HPT3(18-21)-120215**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315507 — **Prep Batch: 315356**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	<0.20		2.00	2.02		mg/L		101	75 - 125
Antimony	<0.020		0.500	0.536		mg/L		107	75 - 125
Arsenic	<0.010		0.100	0.106		mg/L		106	75 - 125
Barium	0.33		2.00	2.31		mg/L		99	75 - 125
Beryllium	<0.0040		0.0500	0.0501		mg/L		100	75 - 125
Cadmium	0.0013	J	0.0500	0.0544		mg/L		106	75 - 125
Calcium	99		10.0	108	4	mg/L		88	75 - 125
Chromium	0.0043	J	0.200	0.205		mg/L		100	75 - 125
Cobalt	0.0018	J	0.500	0.521		mg/L		104	75 - 125
Copper	0.0028	J	0.250	0.276		mg/L		109	75 - 125
Iron	28		1.00	28.7	4	mg/L		64	75 - 125
Lead	<0.0050		0.100	0.105		mg/L		105	75 - 125
Magnesium	69		10.0	78.8	4	mg/L		97	75 - 125
Manganese	0.15		0.500	0.619		mg/L		95	75 - 125
Nickel	0.0084	J	0.500	0.529		mg/L		104	75 - 125
Potassium	60		10.0	70.1	4	mg/L		100	75 - 125
Selenium	<0.010		0.100	0.101		mg/L		101	75 - 125
Silver	<0.0050		0.0500	0.0516		mg/L		103	75 - 125
Sodium	220		10.0	235	4	mg/L		113	75 - 125
Thallium	<0.010		0.100	0.0959		mg/L		96	75 - 125
Vanadium	<0.0050		0.500	0.524		mg/L		105	75 - 125
Zinc	0.041		0.500	0.535		mg/L		99	75 - 125

Lab Sample ID: 500-104781-2 MSD — **Client Sample ID: VAP-HPT3(18-21)-120215**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315507 — **Prep Batch: 315356**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	<0.20		2.00	2.07		mg/L		103	75 - 125	3	20
Antimony	<0.020		0.500	0.546		mg/L		109	75 - 125	2	20
Arsenic	<0.010		0.100	0.106		mg/L		106	75 - 125	0	20
Barium	0.33		2.00	2.38		mg/L		102	75 - 125	3	20
Beryllium	<0.0040		0.0500	0.0517		mg/L		103	75 - 125	3	20
Cadmium	0.0013	J	0.0500	0.0556		mg/L		108	75 - 125	2	20
Calcium	99		10.0	109	4	mg/L		103	75 - 125	1	20
Chromium	0.0043	J	0.200	0.211		mg/L		103	75 - 125	3	20
Cobalt	0.0018	J	0.500	0.534		mg/L		106	75 - 125	3	20
Copper	0.0028	J	0.250	0.284		mg/L		112	75 - 125	3	20
Iron	28		1.00	29.0	4	mg/L		88	75 - 125	1	20
Lead	<0.0050		0.100	0.107		mg/L		107	75 - 125	2	20
Magnesium	69		10.0	79.4	4	mg/L		103	75 - 125	1	20
Manganese	0.15		0.500	0.636		mg/L		98	75 - 125	3	20
Nickel	0.0084	J	0.500	0.543		mg/L		107	75 - 125	3	20
Potassium	60		10.0	70.3	4	mg/L		102	75 - 125	0	20
Selenium	<0.010		0.100	0.100		mg/L		100	75 - 125	1	20
Silver	<0.0050		0.0500	0.0527		mg/L		105	75 - 125	2	20
Sodium	220		10.0	232	4	mg/L		91	75 - 125	1	20
Thallium	<0.010		0.100	0.0968		mg/L		97	75 - 125	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-104781-2 MSD — **Client Sample ID: VAP-HPT3(18-21)-120215**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315507 — **Prep Batch: 315356**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vanadium	<0.0050		0.500	0.541		mg/L		108	75 - 125	3	20
Zinc	0.041		0.500	0.546		mg/L		101	75 - 125	2	20

Lab Sample ID: 500-104781-2 DU — **Client Sample ID: VAP-HPT3(18-21)-120215**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315507 — **Prep Batch: 315356**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	<0.20		<0.20		mg/L		NC	20
Antimony	<0.020		<0.020		mg/L		NC	20
Arsenic	<0.010		<0.010		mg/L		NC	20
Barium	0.33		0.333		mg/L		0.6	20
Beryllium	<0.0040		<0.0040		mg/L		NC	20
Cadmium	0.0013	J	0.00137	J	mg/L		4	20
Calcium	99		99.4		mg/L		0.6	20
Chromium	0.0043	J	0.00486	J	mg/L		11	20
Cobalt	0.0018	J	0.00199	J	mg/L		8	20
Copper	0.0028	J	0.00345	J	mg/L		20	20
Iron	28		28.3		mg/L		0.8	20
Lead	<0.0050		<0.0050		mg/L		NC	20
Magnesium	69		69.7		mg/L		0.8	20
Manganese	0.15		0.146		mg/L		1	20
Nickel	0.0084	J	0.00815	J	mg/L		3	20
Potassium	60		60.5		mg/L		0.6	20
Selenium	<0.010		<0.010		mg/L		NC	20
Silver	<0.0050		<0.0050		mg/L		NC	20
Sodium	220		226		mg/L		1	20
Thallium	<0.010		<0.010		mg/L		NC	20
Vanadium	<0.0050		<0.0050		mg/L		NC	20
Zinc	0.041		0.0409		mg/L		0.3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-315181/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315397 — **Prep Batch: 315181**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		12/04/15 13:15	12/07/15 09:50	1

Lab Sample ID: LCS 500-315181/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 315397 — **Prep Batch: 315181**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00226		mg/L		113	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 500-104781-11 MS — **Client Sample ID: VAP-HPT25(18-21)-120315**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315397 — **Prep Batch: 315181**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	<0.00020		0.00100	0.00113		mg/L		113	75 - 125		

Lab Sample ID: 500-104781-11 MSD — **Client Sample ID: VAP-HPT25(18-21)-120315**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315397 — **Prep Batch: 315181**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.00111		mg/L		111	75 - 125	1	20

Lab Sample ID: 500-104781-11 DU — **Client Sample ID: VAP-HPT25(18-21)-120315**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 315397 — **Prep Batch: 315181**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	<0.00020			<0.00020		mg/L				NC	20

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-316398/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316591 — **Prep Batch: 316398**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0610	J	0.20	0.043	mg/L		12/15/15 17:40	12/15/15 20:20	1

Lab Sample ID: LCS 500-316398/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 316591 — **Prep Batch: 316398**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia			2.50	2.47		mg/L		99	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: TB-1(120315)
Lab Sample ID: 500-104781-1
Date Collected: 12/02/15 00:00
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315731	12/09/15 23:51	PMF	TAL CHI

Client Sample ID: VAP-HPT3(18-21)-120215
Lab Sample ID: 500-104781-2
Date Collected: 12/02/15 14:55
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315731	12/10/15 01:11	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 20:30	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 20:25	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 09:56	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 09:54	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		4	316591	12/15/15 20:26	HMW	TAL CHI

Client Sample ID: VAP-HPT26(6-9)-120315
Lab Sample ID: 500-104781-3
Date Collected: 12/03/15 08:50
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315731	12/10/15 01:38	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 20:59	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 20:55	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:00	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 09:58	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	316591	12/15/15 22:06	HMW	TAL CHI

Client Sample ID: VAP-HPT26(10-13)-120315
Lab Sample ID: 500-104781-4
Date Collected: 12/03/15 09:20
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315731	12/10/15 02:04	PMF	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT26(10-13)-120315

Lab Sample ID: 500-104781-4
Date Collected: 12/03/15 09:20
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 21:16	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 21:11	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315593	12/08/15 12:14	KML	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:08	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 10:02	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	316591	12/15/15 20:32	HMW	TAL CHI

Client Sample ID: VAP-HPT26(15-18)-120315

Lab Sample ID: 500-104781-5
Date Collected: 12/03/15 10:00
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315731	12/10/15 02:31	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 21:26	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 21:21	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:12	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 10:10	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	316591	12/15/15 20:34	HMW	TAL CHI

Client Sample ID: VAP-HPT4(9-12)-120315

Lab Sample ID: 500-104781-6
Date Collected: 12/03/15 11:10
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315731	12/10/15 07:34	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 21:37	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 21:31	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:16	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT4(9-12)-120315

Lab Sample ID: 500-104781-6
Date Collected: 12/03/15 11:10
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	315397	12/07/15 10:14	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316591	12/15/15 20:37	HMW	TAL CHI

Client Sample ID: VAP-HPT4(13-15)-120315

Lab Sample ID: 500-104781-7
Date Collected: 12/03/15 11:45
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315731	12/10/15 08:01	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 21:47	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 21:42	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:19	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 10:18	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316591	12/15/15 20:40	HMW	TAL CHI

Client Sample ID: VAP-HPT4(17-19)-120315

Lab Sample ID: 500-104781-8
Date Collected: 12/03/15 12:30
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	315850	12/10/15 12:31	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 21:58	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 21:53	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:23	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 10:21	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316591	12/15/15 20:43	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(8-11)-120315

Lab Sample ID: 500-104781-9
Date Collected: 12/03/15 13:45
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315850	12/10/15 11:10	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 22:21	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 22:15	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:31	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 10:25	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316591	12/15/15 20:46	HMW	TAL CHI

Client Sample ID: VAP-HPT25(13-16)-120315

Lab Sample ID: 500-104781-10
Date Collected: 12/03/15 14:15
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315850	12/10/15 11:37	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 22:31	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 22:26	PJ1	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:35	MJD	TAL CHI
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 10:33	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	316591	12/15/15 20:54	HMW	TAL CHI

Client Sample ID: VAP-HPT25(18-21)-120315

Lab Sample ID: 500-104781-11
Date Collected: 12/03/15 15:05
Matrix: Water
Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	315850	12/10/15 12:04	PMF	TAL CHI
Dissolved	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Dissolved	Analysis	6010C		1	315507	12/07/15 22:42	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315507	12/07/15 22:37	PJ1	TAL CHI
Total/NA	Prep	3010A			315356	12/07/15 08:55	JEF	TAL CHI
Total/NA	Analysis	6010C		1	315593	12/08/15 12:24	KML	TAL CHI
Dissolved	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	315397	12/07/15 10:39	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Client Sample ID: VAP-HPT25(18-21)-120315

Lab Sample ID: 500-104781-11

Date Collected: 12/03/15 15:05

Matrix: Water

Date Received: 12/04/15 07:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			315181	12/04/15 13:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	315397	12/07/15 10:37	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			316398	12/15/15 17:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		4	316591	12/15/15 20:57	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-104781-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTA'

2417 Bond Street, University Park, IL 6
Phone: 708.534.5200 Fax: 708.53

500-104781 COC

(optional)
Report To
Contact: Ellyn Gates
Company: Arcadis
Address: 1205 S. LaSalle
Address: Ste 1350
Phone: 312-575-3772
Fax: 312-917-1572
E-Mail: Ellyn.Gates@Arcadis.Com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-104781
Chain of Custody Number:
Page 1 of 1
Temperature °C of Cooler: 3.4

Client: Arcadis
Client Project #: CI001805.0002
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Bruce Evans
Lab PM: Bonnie Stadelmann

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs (Preservative 1)	Total Metals (Preservative 3)	Dissolved Metals (Filtered) (Preservative 3)	Ammonia (Preservative 2)						Comments
1		TB-1 (120315)	—	—	2	W	2									Trip Blank
2		VAP-HPT3(18-21)-120215	12/2/15	14:55	6	W	3	1	1	1						
3		VAP-HPT26(6-9)-120315	12/3/15	08:50	6	W	3	1	1	1						
4		VAP-HPT26(10-13)-120315	12/3/15	09:20	6	W	3	1	1	1						
5		VAP-HPT26(15-18)-120315	12/3/15	10:00	6	W	3	1	1	1						
6		VAP-HPT4(9-12)-120315	12/3/15	11:10	6	W	3	1	1	1						
7		VAP-HPT4(13-15)-120315	12/3/15	11:45	6	W	3	1	1	1						
8		VAP-HPT4(17-19)-120315	12/3/15	12:30	6	W	3	1	1	1						
9		VAP-HPT25(8-11)-120315	12/3/15	13:45	6	W	3	1	1	1						
10		VAP-HPT25(13-16)-120315	12/3/15	14:15	6	W	3	1	1	1						
11		VAP-HPT25(18-21)-120315	12/3/15	15:05	6	W	3	1	1	1						

Turnaround Time Requested (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Bruce Evans	Arcadis	12/3/15	16:30	David Becker	TA	12/3/15	16:30
David Becker	TA	12/3/15	17:15	Ellyn Gates	TA-CHI	12/4/15	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
1 cooler / Samples on Ice
Questions CALL Ellyn Gates @ 312-575-3772

Lab Comments:

TAL-4124-509 (1209)
12/17/2015

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-104781-1

Login Number: 104781
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-103464-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
11/16/2015 2:11:58 PM

Bonnie Stadelmann, Senior Project Manager
(708)534-5200
bonnie.stadelmann@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-103464-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-103464-1

Comments
No additional comments.

Receipt
The samples were received on 11/3/2015 2:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1º C.

Receipt Exceptions

Received 1 VOA vial for samples 5, 6, & 8 with larger than pea size bubbles. Two good vials remain for each sample.

Received Trip Blank not on COC, added to COC as sample 11 and logged.

GC/MS VOA
Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: VAP-HPT-05(6-9)-110215 (500-103464-1). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The method blank for preparation batch 312425 contained Methylene Chloride above the reporting limit (RL). Samples associated with this method blank contained the target compound.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215 — Lab Sample ID: 500-103464-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	3.0	J	4.0	0.90	ug/L	2		8260B	Total/NA
cis-1,2-Dichloroethene	1.0	J	2.0	0.82	ug/L	2		8260B	Total/NA
Cyclohexane	3.4		2.0	0.97	ug/L	2		8260B	Total/NA
1,2-Dichlorobenzene	1.0	J	2.0	0.67	ug/L	2		8260B	Total/NA
1,1-Dichloroethane	8.9		2.0	0.82	ug/L	2		8260B	Total/NA
Ethylbenzene	3.1		1.0	0.37	ug/L	2		8260B	Total/NA
Methylene Chloride	18	B	10	3.3	ug/L	2		8260B	Total/NA
Toluene	18		1.0	0.30	ug/L	2		8260B	Total/NA
Vinyl chloride	1.8		1.0	0.41	ug/L	2		8260B	Total/NA
Xylenes, Total	3.5		2.0	0.44	ug/L	2		8260B	Total/NA
Benzene - DL	330		10	2.9	ug/L	20		8260B	Total/NA
Aluminum	0.90		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.013	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.018		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.054		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0030		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0048	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0065	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	1.8		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.022		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	49		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.46		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0056	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	12		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	410		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0044	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.017	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Antimony	0.0078	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.019		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.051		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	0.11	J	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	46		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.29		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	12		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	400		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	5.3	B	0.40	0.086	mg/L	2		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-05(10-13)-110215 — Lab Sample ID: 500-103464-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	16		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	160		0.50	0.15	ug/L	1		8260B	Total/NA
Carbon disulfide	7.7		2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	2.0		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	0.42	J	0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	1.7		1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	21	B	5.0	1.6	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(10-13)-110215 (Continued) — Lab Sample ID: 500-103464-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	7.5		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	15		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	2.4		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	0.31		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0035	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.42		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	150		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0055	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	4.2		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0067		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	120		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.58		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	49		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	290		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0033	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.010	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.47		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	170		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0031	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	2.8		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0028	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	140		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.60		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	56		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	320		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0022	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Ammonia	19	B	1.0	0.22	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-05(14-17)-110215 — Lab Sample ID: 500-103464-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	28		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.96	J	1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	2.0		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	0.54	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	5.4	F1	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.010		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.37		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0016	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	350		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.025		0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.026		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	20		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.064		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	76		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.64		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.014		0.010	0.0031	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215 (Continued) — Lab Sample ID: 500-103464-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	49		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0079	J F1	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	280		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0096		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.27		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.30		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	340		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0024	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	3.0		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	75		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.43		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	49		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	290		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00034		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	22	B	1.0	0.22	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-05(18-20)-110215 — Lab Sample ID: 500-103464-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	11		0.50	0.15	ug/L	1		8260B	Total/NA
Methylene Chloride	5.6	B	5.0	1.6	ug/L	1		8260B	Total/NA
Toluene	3.8		0.50	0.15	ug/L	1		8260B	Total/NA
Aluminum	1.0		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.12		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	280		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.011		0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0056	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	3.8		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.011		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	73		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.35		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0035	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	61		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0075		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.025		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.11		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	270		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	1.2		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0039	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	72		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	61		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	220		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0045	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Ammonia	30	B	2.0	0.43	mg/L	10		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(10-13)-110315 — Lab Sample ID: 500-103464-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.4		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	10		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	6.4		1.0	0.39	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	4.0		1.0	0.40	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.5		1.0	0.39	ug/L	1		8260B	Total/NA
Isopropylbenzene	2.7		1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	5.3	B	5.0	1.6	ug/L	1		8260B	Total/NA
Toluene	0.70		0.50	0.15	ug/L	1		8260B	Total/NA
Aluminum	4.6		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0081	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.017		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.36		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0014	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0036		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	210		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.035		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0042	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.13		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	51		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.19		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	160		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.89		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.029		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	78		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0050	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	530		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.015		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.39		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.22		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0016	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	210		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0024	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	18		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	170		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.63		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0058	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	83		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	540		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0025	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.000079	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	54	B	5.0	1.1	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-06(14-17)-110315 — Lab Sample ID: 500-103464-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.1		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	33		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	36		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.2		1.0	0.49	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	3.9		1.0	0.40	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315 (Continued) — Lab Sample ID: 500-103464-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	8.7		1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	5.0	B	5.0	1.6	ug/L	1		8260B	Total/NA
Xylenes, Total	1.2		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	15		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.012	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.031		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.62		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0029	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.013		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	230		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.16		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.020		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.36		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	170		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.43		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	140		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	2.4		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.61		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	93		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.0047	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	430		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.041		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.7		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.23		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	160		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0047	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	27		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.50		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0063	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	85		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	400		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0023	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00015	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	110	B	10	2.2	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-06(18-20)-110315 — Lab Sample ID: 500-103464-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.9		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	31		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	26		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.6		1.0	0.49	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	3.6		1.0	0.40	ug/L	1		8260B	Total/NA
Isopropylbenzene	7.5		1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	5.4	B	5.0	1.6	ug/L	1		8260B	Total/NA
Aluminum	0.78		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0041	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.33		0.010	0.0022	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(18-20)-110315 (Continued) — Lab Sample ID: 500-103464-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0033		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	170		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.014		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0019	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.023		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	38		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.036		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	130		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.52		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.018		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	86		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	420		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0030	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.89		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.31		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	170		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	31		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	140		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.48		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0042	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	88		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	430		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.0094	J	0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00011	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	110	B	10	2.2	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-07(6-9)-110315 — Lab Sample ID: 500-103464-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	46		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	64		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.2		1.0	0.49	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	4.6		1.0	0.40	ug/L	1		8260B	Total/NA
Ethylbenzene	0.46	J	0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	6.9		1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	5.4	B	5.0	1.6	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	10		5.0	2.1	ug/L	1		8260B	Total/NA
Xylenes, Total	1.8		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	1.5		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0077	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0041	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.26		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	200		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.018		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0015	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.010		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	22		0.20	0.10	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: VAP-HPT-07(6-9)-110315 (Continued) — Lab Sample ID: 500-103464-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.091		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.24		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.015		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	80		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	320		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0051		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.063		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	170		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0026	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	19		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	100		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0082	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	81		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	330		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.000061	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	86	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-07(10-12)-110315 — Lab Sample ID: 500-103464-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	28		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	36		0.50	0.15	ug/L	1		8260B	Total/NA
Carbon disulfide	1.4	J	2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	10		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	1.9		1.0	0.47	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	4.0		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	2.5		1.0	0.40	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	0.57	J	1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	14		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.9		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	10		5.0	2.1	ug/L	1		8260B	Total/NA
Toluene	4.6		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	26		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	2.0		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.015		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.33		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0026		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	210		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.095		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0072		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.059		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	25		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.41		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	330		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.59		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.031		0.010	0.0031	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(10-12)-110315 (Continued) — Lab Sample ID: 500-103464-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	110		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	420		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.041		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.21		0.020	0.0090	mg/L	1		6010C	Total/NA
Arsenic	0.011		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.17		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	200		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.066		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0031	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	9.8		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	310		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.48		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0082	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	110		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	420		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.034		0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00012	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	120	B	10	2.2	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-07(14-17)-110315 — Lab Sample ID: 500-103464-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.3		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	30		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	100		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	2.5		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.0		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	8.5		1.0	0.40	ug/L	1		8260B	Total/NA
Ethylbenzene	1.4		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	9.7		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.66	J	1.0	0.32	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.83	J	1.0	0.37	ug/L	1		8260B	Total/NA
Xylenes, Total	3.4		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	1.9		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0090	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.39		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0037		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.058		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0028	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.035		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	41		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.13		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	100		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.32		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.071		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	74		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	270		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0056		0.0050	0.0019	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(14-17)-110315 (Continued) — Lab Sample ID: 500-103464-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Zinc	0.34		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.27		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.00097	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0038	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	26		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	100		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.24		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0046	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	76		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	280		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00014	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	81	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-103464-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	5.8	B	5.0	1.6	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-103464-1	VAP-HPT-05(6-9)-110215	Water	11/02/15 09:30	11/03/15 14:50
500-103464-2	VAP-HPT-05(10-13)-110215	Water	11/02/15 10:30	11/03/15 14:50
500-103464-3	VAP-HPT-05(14-17)-110215	Water	11/02/15 11:15	11/03/15 14:50
500-103464-4	VAP-HPT-05(18-20)-110215	Water	11/02/15 12:30	11/03/15 14:50
500-103464-5	VAP-HPT-06(10-13)-110315	Water	11/03/15 09:00	11/03/15 14:50
500-103464-6	VAP-HPT-06(14-17)-110315	Water	11/03/15 09:30	11/03/15 14:50
500-103464-7	VAP-HPT-06(18-20)-110315	Water	11/03/15 10:20	11/03/15 14:50
500-103464-8	VAP-HPT-07(6-9)-110315	Water	11/03/15 12:45	11/03/15 14:50
500-103464-9	VAP-HPT-07(10-12)-110315	Water	11/03/15 13:10	11/03/15 14:50
500-103464-10	VAP-HPT-07(14-17)-110315	Water	11/03/15 14:00	11/03/15 14:50
500-103464-11	Trip Blank	Water	11/02/15 00:00	11/03/15 14:50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215

Lab Sample ID: 500-103464-1

Date Collected: 11/02/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10		10	3.5	ug/L			11/13/15 05:03	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/13/15 05:03	2
Bromoform	<2.0		2.0	0.97	ug/L			11/13/15 05:03	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/13/15 05:03	2
Carbon disulfide	**3.0**	**J**	4.0	0.90	ug/L			11/13/15 05:03	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
Chlorobenzene	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/13/15 05:03	2
Chloroform	<2.0		2.0	0.74	ug/L			11/13/15 05:03	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/13/15 05:03	2
cis-1,2-Dichloroethene	**1.0**	**J**	2.0	0.82	ug/L			11/13/15 05:03	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/13/15 05:03	2
Cyclohexane	**3.4**		2.0	0.97	ug/L			11/13/15 05:03	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/13/15 05:03	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/13/15 05:03	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
1,2-Dichlorobenzene	**1.0**	**J**	2.0	0.67	ug/L			11/13/15 05:03	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/13/15 05:03	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			11/13/15 05:03	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/13/15 05:03	2
1,1-Dichloroethane	**8.9**		2.0	0.82	ug/L			11/13/15 05:03	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/13/15 05:03	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/13/15 05:03	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/13/15 05:03	2
Ethylbenzene	**3.1**		1.0	0.37	ug/L			11/13/15 05:03	2
2-Hexanone	<10		10	3.1	ug/L			11/13/15 05:03	2
Isopropylbenzene	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
Methyl acetate	<10		10	4.0	ug/L			11/13/15 05:03	2
Methylcyclohexane	<2.0		2.0	0.63	ug/L			11/13/15 05:03	2
Methylene Chloride	**18**	**B**	10	3.3	ug/L			11/13/15 05:03	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/13/15 05:03	2
methyl isobutyl ketone	<10		10	4.3	ug/L			11/13/15 05:03	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/13/15 05:03	2
Styrene	<2.0		2.0	0.77	ug/L			11/13/15 05:03	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/13/15 05:03	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/13/15 05:03	2
Toluene	**18**		1.0	0.30	ug/L			11/13/15 05:03	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/13/15 05:03	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/13/15 05:03	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/13/15 05:03	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/13/15 05:03	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/13/15 05:03	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/13/15 05:03	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/13/15 05:03	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/13/15 05:03	2
Vinyl chloride	**1.8**		1.0	0.41	ug/L			11/13/15 05:03	2
Xylenes, Total	**3.5**		2.0	0.44	ug/L			11/13/15 05:03	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215

Lab Sample ID: 500-103464-1

Date Collected: 11/02/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/13/15 05:03*	*2*
Dibromofluoromethane	*97*		*75 - 120*		*11/13/15 05:03*	*2*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*		*11/13/15 05:03*	*2*
Toluene-d8 (Surr)	*83*		*75 - 120*		*11/13/15 05:03*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**330**		10	2.9	ug/L			11/13/15 05:30	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*		*11/13/15 05:30*	*20*
Dibromofluoromethane	*84*		*75 - 120*		*11/13/15 05:30*	*20*
1,2-Dichloroethane-d4 (Surr)	*79*		*75 - 125*		*11/13/15 05:30*	*20*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 05:30*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.90**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:18	1
Antimony	**0.013**	**J**	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:18	1
Arsenic	**0.018**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:18	1
Barium	**0.054**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:18	1
Cadmium	**0.0030**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:18	1
Calcium	**120**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:18	1
Chromium	**0.0048**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:18	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:18	1
Copper	**0.0065**	**J**	0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:18	1
Iron	**1.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:18	1
Lead	**0.022**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:18	1
Magnesium	**49**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:18	1
Manganese	**0.46**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:18	1
Nickel	**0.0056**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:18	1
Potassium	**12**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:18	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:18	1
Sodium	**410**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:18	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:18	1
Vanadium	**0.0044**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:18	1
Zinc	**0.017**	**J**	0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:23	1
Antimony	**0.0078**	**J**	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:23	1
Arsenic	**0.019**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:23	1
Barium	**0.051**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:23	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:23	1
Calcium	**110**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:23	1
Chromium	<0.010		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:23	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215

Lab Sample ID: 500-103464-1

Date Collected: 11/02/15 09:30

Matrix: Water

Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:23	1
Iron	**0.11**	**J**	0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:23	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:23	1
Magnesium	**46**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:23	1
Manganese	**0.29**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:23	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:23	1
Potassium	**12**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:23	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:23	1
Sodium	**400**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:23	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:28	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**5.3**	**B**	0.40	0.086	mg/L		11/11/15 13:15	11/11/15 16:20	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(10-13)-110215

Lab Sample ID: 500-103464-2

Date Collected: 11/02/15 10:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			11/13/15 07:23	1
Benzene	**160**		0.50	0.15	ug/L			11/13/15 07:23	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 07:23	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 07:23	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 07:23	1
Carbon disulfide	**7.7**		2.0	0.45	ug/L			11/13/15 07:23	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 07:23	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			11/13/15 07:23	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 07:23	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 07:23	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 07:23	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 07:23	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 07:23	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 07:23	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 07:23	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 07:23	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 07:23	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 07:23	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 07:23	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 07:23	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 07:23	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 07:23	1
Ethylbenzene	**0.42**	**J**	0.50	0.18	ug/L			11/13/15 07:23	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 07:23	1
Isopropylbenzene	**1.7**		1.0	0.39	ug/L			11/13/15 07:23	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 07:23	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 07:23	1
Methylene Chloride	**21**	**B**	5.0	1.6	ug/L			11/13/15 07:23	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 07:23	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 07:23	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 07:23	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 07:23	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 07:23	1
Toluene	**7.5**		0.50	0.15	ug/L			11/13/15 07:23	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 07:23	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 07:23	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 07:23	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 07:23	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 07:23	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 07:23	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 07:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 07:23	1
Vinyl chloride	**15**		0.50	0.20	ug/L			11/13/15 07:23	1
Xylenes, Total	**2.4**		1.0	0.22	ug/L			11/13/15 07:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(10-13)-110215

Date Collected: 11/02/15 10:30
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/13/15 07:23*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 07:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/13/15 07:23*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*11/13/15 07:23*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.31**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:29	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:29	1
Arsenic	**0.0035**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:29	1
Barium	**0.42**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:29	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:29	1
Calcium	**150**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:29	1
Chromium	**0.0055**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:29	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:29	1
Iron	**4.2**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:29	1
Lead	**0.0067**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:29	1
Magnesium	**120**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:29	1
Manganese	**0.58**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:29	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:29	1
Potassium	**49**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:29	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:29	1
Sodium	**290**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:29	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:29	1
Vanadium	**0.0033**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:29	1
Zinc	**0.010**	**J**	0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:34	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:34	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:34	1
Barium	**0.47**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:34	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:34	1
Calcium	**170**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:34	1
Chromium	**0.0031**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:34	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:34	1
Iron	**2.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:34	1
Lead	**0.0028**	**J**	0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:34	1
Magnesium	**140**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:34	1
Manganese	**0.60**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:34	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:34	1
Potassium	**56**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:34	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(10-13)-110215

Lab Sample ID: 500-103464-2

Date Collected: 11/02/15 10:30

Matrix: Water

Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**320**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:34	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:34	1
Vanadium	**0.0022**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:34	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:32	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**19**	**B**	1.0	0.22	mg/L		11/11/15 13:15	11/11/15 16:23	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215

Lab Sample ID: 500-103464-3

Date Collected: 11/02/15 11:15
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 07:50	1
Benzene	**28**		0.50	0.15	ug/L			11/13/15 07:50	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 07:50	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 07:50	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 07:50	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 07:50	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 07:50	1
Chlorobenzene	**0.96**	**J**	1.0	0.39	ug/L			11/13/15 07:50	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 07:50	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 07:50	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 07:50	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 07:50	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 07:50	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 07:50	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 07:50	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 07:50	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 07:50	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 07:50	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 07:50	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 07:50	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 07:50	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 07:50	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 07:50	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 07:50	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 07:50	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 07:50	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 07:50	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 07:50	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 07:50	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 07:50	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 07:50	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 07:50	1
Toluene	**2.0**		0.50	0.15	ug/L			11/13/15 07:50	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 07:50	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 07:50	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 07:50	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 07:50	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 07:50	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 07:50	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 07:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 07:50	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 07:50	1
Xylenes, Total	**0.54**	**J**	1.0	0.22	ug/L			11/13/15 07:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215

Date Collected: 11/02/15 11:15
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*11/13/15 07:50*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 07:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*11/13/15 07:50*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 07:50*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**5.4**	**F1**	0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:39	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:39	1
Arsenic	**0.010**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:39	1
Barium	**0.37**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:39	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:39	1
Cadmium	**0.0016**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:39	1
Calcium	**350**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:39	1
Chromium	**0.025**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:39	1
Copper	**0.026**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:39	1
Iron	**20**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:39	1
Lead	**0.064**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:39	1
Magnesium	**76**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:39	1
Manganese	**0.64**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:39	1
Nickel	**0.014**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:39	1
Potassium	**49**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:39	1
Selenium	**0.0079**	**J F1**	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:39	1
Sodium	**280**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:39	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:39	1
Vanadium	**0.0096**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:39	1
Zinc	**0.27**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:39	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:12	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:12	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:12	1
Barium	**0.30**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:12	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:12	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:12	1
Calcium	**340**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:12	1
Chromium	**0.0024**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:12	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:12	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:12	1
Iron	**3.0**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:12	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:12	1
Magnesium	**75**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:12	1
Manganese	**0.43**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:12	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:12	1
Potassium	**49**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:12	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:12	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215

Lab Sample ID: 500-103464-3

Date Collected: 11/02/15 11:15
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**290**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:12	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:12	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:12	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00034**		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**22**	**B**	1.0	0.22	mg/L		11/11/15 13:15	11/11/15 16:25	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(18-20)-110215

Lab Sample ID: 500-103464-4

Date Collected: 11/02/15 12:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 08:16	1
Benzene	**11**		0.50	0.15	ug/L			11/13/15 08:16	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 08:16	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 08:16	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 08:16	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 08:16	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 08:16	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 08:16	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 08:16	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 08:16	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 08:16	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 08:16	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 08:16	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 08:16	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 08:16	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 08:16	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 08:16	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 08:16	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 08:16	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 08:16	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 08:16	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 08:16	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 08:16	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 08:16	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 08:16	1
Methylene Chloride	**5.6**	**B**	5.0	1.6	ug/L			11/13/15 08:16	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 08:16	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 08:16	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 08:16	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 08:16	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 08:16	1
Toluene	**3.8**		0.50	0.15	ug/L			11/13/15 08:16	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 08:16	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 08:16	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 08:16	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 08:16	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 08:16	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 08:16	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 08:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 08:16	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 08:16	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 08:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(18-20)-110215

Date Collected: 11/02/15 12:30
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*75 - 120*		*11/13/15 08:16*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 08:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 125*		*11/13/15 08:16*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/13/15 08:16*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.0**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:18	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:18	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:18	1
Barium	**0.12**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:18	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:18	1
Calcium	**280**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:18	1
Chromium	**0.011**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:18	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:18	1
Copper	**0.0056**	**J**	0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:18	1
Iron	**3.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:18	1
Lead	**0.011**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:18	1
Magnesium	**73**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:18	1
Manganese	**0.35**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:18	1
Nickel	**0.0035**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:18	1
Potassium	**61**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:18	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:18	1
Sodium	**210**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:18	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:18	1
Vanadium	**0.0075**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:18	1
Zinc	**0.025**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:23	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:23	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:23	1
Barium	**0.11**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:23	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:23	1
Calcium	**270**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:23	1
Chromium	<0.010		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:23	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:23	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:23	1
Iron	**1.2**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:23	1
Lead	**0.0039**	**J**	0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:23	1
Magnesium	**72**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:23	1
Manganese	**0.22**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:23	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:23	1
Potassium	**61**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:23	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(18-20)-110215

Lab Sample ID: 500-103464-4

Date Collected: 11/02/15 12:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**220**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:23	1
Vanadium	**0.0045**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**30**	**B**	2.0	0.43	mg/L		11/11/15 13:15	11/12/15 18:26	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(10-13)-110315

Lab Sample ID: 500-103464-5

Date Collected: 11/03/15 09:00
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.4**		5.0	1.7	ug/L			11/13/15 08:43	1
Benzene	**10**		0.50	0.15	ug/L			11/13/15 08:43	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 08:43	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 08:43	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 08:43	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 08:43	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 08:43	1
Chlorobenzene	**6.4**		1.0	0.39	ug/L			11/13/15 08:43	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 08:43	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 08:43	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 08:43	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 08:43	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 08:43	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 08:43	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 08:43	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 08:43	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 08:43	1
1,3-Dichlorobenzene	**4.0**		1.0	0.40	ug/L			11/13/15 08:43	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 08:43	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 08:43	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 08:43	1
1,2-Dichloroethane	**1.5**		1.0	0.39	ug/L			11/13/15 08:43	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 08:43	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 08:43	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 08:43	1
Isopropylbenzene	**2.7**		1.0	0.39	ug/L			11/13/15 08:43	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 08:43	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 08:43	1
Methylene Chloride	**5.3**	**B**	5.0	1.6	ug/L			11/13/15 08:43	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 08:43	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 08:43	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 08:43	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 08:43	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 08:43	1
Toluene	**0.70**		0.50	0.15	ug/L			11/13/15 08:43	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 08:43	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 08:43	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 08:43	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 08:43	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 08:43	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 08:43	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 08:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 08:43	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 08:43	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 08:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(10-13)-110315

Lab Sample ID: 500-103464-5

Date Collected: 11/03/15 09:00
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/13/15 08:43*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*11/13/15 08:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*11/13/15 08:43*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*11/13/15 08:43*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.6**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:29	1
Antimony	**0.0081**	**J**	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:29	1
Arsenic	**0.017**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:29	1
Barium	**0.36**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:29	1
Beryllium	**0.0014**	**J**	0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:29	1
Cadmium	**0.0036**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:29	1
Calcium	**210**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:29	1
Chromium	**0.035**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:29	1
Cobalt	**0.0042**	**J**	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:29	1
Copper	**0.13**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:29	1
Iron	**51**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:29	1
Lead	**0.19**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:29	1
Magnesium	**160**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:29	1
Manganese	**0.89**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:29	1
Nickel	**0.029**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:29	1
Potassium	**78**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:29	1
Selenium	**0.0050**	**J**	0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:29	1
Sodium	**530**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:29	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:29	1
Vanadium	**0.015**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:29	1
Zinc	**0.39**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:34	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:34	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:34	1
Barium	**0.22**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:34	1
Cadmium	**0.0016**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:34	1
Calcium	**210**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:34	1
Chromium	**0.0024**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:34	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:34	1
Iron	**18**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:34	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:34	1
Magnesium	**170**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:34	1
Manganese	**0.63**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:34	1
Nickel	**0.0058**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:34	1
Potassium	**83**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:34	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(10-13)-110315

Lab Sample ID: 500-103464-5

Date Collected: 11/03/15 09:00

Matrix: Water

Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**540**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:34	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:34	1
Vanadium	**0.0025**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:34	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000079**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**54**	**B**	5.0	1.1	mg/L		11/11/15 13:15	11/12/15 18:29	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315

Lab Sample ID: 500-103464-6

Date Collected: 11/03/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**5.1**		5.0	1.7	ug/L			11/13/15 09:10	1
Benzene	**33**		0.50	0.15	ug/L			11/13/15 09:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 09:10	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 09:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 09:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 09:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 09:10	1
Chlorobenzene	**36**		1.0	0.39	ug/L			11/13/15 09:10	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 09:10	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 09:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 09:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 09:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 09:10	1
Cyclohexane	**1.2**		1.0	0.49	ug/L			11/13/15 09:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 09:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 09:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 09:10	1
1,3-Dichlorobenzene	**3.9**		1.0	0.40	ug/L			11/13/15 09:10	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 09:10	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 09:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 09:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 09:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 09:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 09:10	1
Isopropylbenzene	**8.7**		1.0	0.39	ug/L			11/13/15 09:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 09:10	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 09:10	1
Methylene Chloride	**5.0**	**B**	5.0	1.6	ug/L			11/13/15 09:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 09:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 09:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 09:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 09:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 09:10	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 09:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 09:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 09:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 09:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 09:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 09:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 09:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 09:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 09:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 09:10	1
Xylenes, Total	**1.2**		1.0	0.22	ug/L			11/13/15 09:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315

Date Collected: 11/03/15 09:30
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*11/13/15 09:10*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*11/13/15 09:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 125*		*11/13/15 09:10*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 09:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**15**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:39	1
Antimony	**0.012**	**J**	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:39	1
Arsenic	**0.031**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:39	1
Barium	**0.62**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:39	1
Beryllium	**0.0029**	**J**	0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:39	1
Cadmium	**0.013**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:39	1
Calcium	**230**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:39	1
Chromium	**0.16**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:39	1
Cobalt	**0.020**		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:39	1
Copper	**0.36**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:39	1
Iron	**170**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:39	1
Lead	**0.43**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:39	1
Magnesium	**140**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:39	1
Manganese	**2.4**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:39	1
Nickel	**0.61**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:39	1
Potassium	**93**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:39	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:39	1
Silver	**0.0047**	**J**	0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:39	1
Sodium	**430**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:39	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:39	1
Vanadium	**0.041**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:39	1
Zinc	**1.7**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:39	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:52	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:52	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:52	1
Barium	**0.23**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:52	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:52	1
Calcium	**160**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:52	1
Chromium	**0.0047**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:52	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:52	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:52	1
Iron	**27**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:52	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:52	1
Magnesium	**120**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:52	1
Manganese	**0.50**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:52	1
Nickel	**0.0063**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:52	1
Potassium	**85**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:52	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315

Lab Sample ID: 500-103464-6

Date Collected: 11/03/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**400**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:52	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:52	1
Vanadium	**0.0023**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:52	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00015**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:57	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**110**	**B**	10	2.2	mg/L		11/11/15 13:15	11/12/15 18:32	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(18-20)-110315

Lab Sample ID: 500-103464-7

Date Collected: 11/03/15 10:20
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.9**		5.0	1.7	ug/L			11/13/15 09:37	1
Benzene	**31**		0.50	0.15	ug/L			11/13/15 09:37	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 09:37	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 09:37	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 09:37	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 09:37	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 09:37	1
Chlorobenzene	**26**		1.0	0.39	ug/L			11/13/15 09:37	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 09:37	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 09:37	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 09:37	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 09:37	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 09:37	1
Cyclohexane	**1.6**		1.0	0.49	ug/L			11/13/15 09:37	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 09:37	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 09:37	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 09:37	1
1,3-Dichlorobenzene	**3.6**		1.0	0.40	ug/L			11/13/15 09:37	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 09:37	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 09:37	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 09:37	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 09:37	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 09:37	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 09:37	1
Isopropylbenzene	**7.5**		1.0	0.39	ug/L			11/13/15 09:37	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 09:37	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 09:37	1
Methylene Chloride	**5.4**	**B**	5.0	1.6	ug/L			11/13/15 09:37	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 09:37	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 09:37	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 09:37	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 09:37	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 09:37	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 09:37	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 09:37	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 09:37	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 09:37	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 09:37	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 09:37	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 09:37	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 09:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 09:37	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 09:37	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 09:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(18-20)-110315

Lab Sample ID: 500-103464-7

Date Collected: 11/03/15 10:20
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/13/15 09:37*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*11/13/15 09:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 125*		*11/13/15 09:37*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*11/13/15 09:37*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.78**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 04:57	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 04:57	1
Arsenic	**0.0041**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:57	1
Barium	**0.33**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 04:57	1
Cadmium	**0.0033**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 04:57	1
Calcium	**170**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 04:57	1
Chromium	**0.014**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 04:57	1
Cobalt	**0.0019**	**J**	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 04:57	1
Copper	**0.023**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 04:57	1
Iron	**38**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 04:57	1
Lead	**0.036**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 04:57	1
Magnesium	**130**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 04:57	1
Manganese	**0.52**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 04:57	1
Nickel	**0.018**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 04:57	1
Potassium	**86**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 04:57	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 04:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 04:57	1
Sodium	**420**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 04:57	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 04:57	1
Vanadium	**0.0030**	**J**	0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 04:57	1
Zinc	**0.89**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 04:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:02	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:02	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:02	1
Barium	**0.31**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:02	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:02	1
Calcium	**170**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:02	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:02	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:02	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:02	1
Iron	**31**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:02	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:02	1
Magnesium	**140**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:02	1
Manganese	**0.48**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:02	1
Nickel	**0.0042**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:02	1
Potassium	**88**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:02	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(18-20)-110315

Lab Sample ID: 500-103464-7

Date Collected: 11/03/15 10:20
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**430**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:02	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:02	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:02	1
Zinc	**0.0094**	**J**	0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00011**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:01	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**110**	**B**	10	2.2	mg/L		11/11/15 13:15	11/12/15 18:35	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(6-9)-110315

Lab Sample ID: 500-103464-8

Date Collected: 11/03/15 12:45
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 10:04	1
Benzene	**46**		0.50	0.15	ug/L			11/13/15 10:04	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 10:04	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 10:04	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 10:04	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 10:04	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 10:04	1
Chlorobenzene	**64**		1.0	0.39	ug/L			11/13/15 10:04	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 10:04	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 10:04	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 10:04	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 10:04	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 10:04	1
Cyclohexane	**1.2**		1.0	0.49	ug/L			11/13/15 10:04	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 10:04	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 10:04	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 10:04	1
1,3-Dichlorobenzene	**4.6**		1.0	0.40	ug/L			11/13/15 10:04	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 10:04	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 10:04	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 10:04	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 10:04	1
Ethylbenzene	**0.46**	**J**	0.50	0.18	ug/L			11/13/15 10:04	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 10:04	1
Isopropylbenzene	**6.9**		1.0	0.39	ug/L			11/13/15 10:04	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 10:04	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 10:04	1
Methylene Chloride	**5.4**	**B**	5.0	1.6	ug/L			11/13/15 10:04	1
Methyl Ethyl Ketone	**10**		5.0	2.1	ug/L			11/13/15 10:04	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 10:04	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 10:04	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 10:04	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 10:04	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 10:04	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 10:04	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 10:04	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 10:04	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 10:04	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 10:04	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 10:04	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 10:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 10:04	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 10:04	1
Xylenes, Total	**1.8**		1.0	0.22	ug/L			11/13/15 10:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(6-9)-110315

Date Collected: 11/03/15 12:45
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-8

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*75 - 120*		*11/13/15 10:04*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*11/13/15 10:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 125*		*11/13/15 10:04*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*11/13/15 10:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.5**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:08	1
Antimony	**0.0077**	**J**	0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:08	1
Arsenic	**0.0041**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:08	1
Barium	**0.26**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:08	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:08	1
Calcium	**200**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:08	1
Chromium	**0.018**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:08	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:08	1
Copper	**0.010**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:08	1
Iron	**22**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:08	1
Lead	**0.091**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:08	1
Magnesium	**110**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:08	1
Manganese	**0.24**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:08	1
Nickel	**0.015**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:08	1
Potassium	**80**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:08	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:08	1
Sodium	**320**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:08	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:08	1
Vanadium	**0.0051**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:08	1
Zinc	**0.063**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:08	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:13	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:13	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:13	1
Barium	**0.25**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:13	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:13	1
Calcium	**170**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:13	1
Chromium	**0.0026**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:13	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:13	1
Iron	**19**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:13	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:13	1
Magnesium	**100**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:13	1
Manganese	**0.17**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:13	1
Nickel	**0.0082**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:13	1
Potassium	**81**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:13	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(6-9)-110315

Lab Sample ID: 500-103464-8

Date Collected: 11/03/15 12:45
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**330**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:13	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:13	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000061**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:09	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**86**	**B**	4.0	0.86	mg/L		11/11/15 13:15	11/12/15 18:38	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(10-12)-110315

Lab Sample ID: 500-103464-9

Date Collected: 11/03/15 13:10
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**28**		5.0	1.7	ug/L			11/13/15 17:27	1
Benzene	**36**		0.50	0.15	ug/L			11/13/15 17:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 17:27	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 17:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 17:27	1
Carbon disulfide	**1.4**	**J**	2.0	0.45	ug/L			11/13/15 17:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 17:27	1
Chlorobenzene	**10**		1.0	0.39	ug/L			11/13/15 17:27	1
Chloroethane	**1.9**		1.0	0.47	ug/L			11/13/15 17:27	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 17:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 17:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 17:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 17:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 17:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 17:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 17:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,2-Dichlorobenzene	**4.0**		1.0	0.33	ug/L			11/13/15 17:27	1
1,3-Dichlorobenzene	**2.5**		1.0	0.40	ug/L			11/13/15 17:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 17:27	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 17:27	1
1,1-Dichloroethane	**0.57**	**J**	1.0	0.41	ug/L			11/13/15 17:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 17:27	1
Ethylbenzene	**14**		0.50	0.18	ug/L			11/13/15 17:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 17:27	1
Isopropylbenzene	**3.9**		1.0	0.39	ug/L			11/13/15 17:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 17:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 17:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 17:27	1
Methyl Ethyl Ketone	**10**		5.0	2.1	ug/L			11/13/15 17:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 17:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 17:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 17:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 17:27	1
Toluene	**4.6**		0.50	0.15	ug/L			11/13/15 17:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 17:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 17:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 17:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 17:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 17:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 17:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 17:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 17:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 17:27	1
Xylenes, Total	**26**		1.0	0.22	ug/L			11/13/15 17:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(10-12)-110315

Lab Sample ID: 500-103464-9

Date Collected: 11/03/15 13:10
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/13/15 17:27*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*11/13/15 17:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*11/13/15 17:27*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*11/13/15 17:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.0**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:18	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:18	1
Arsenic	**0.015**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:18	1
Barium	**0.33**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:18	1
Cadmium	**0.0026**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:18	1
Calcium	**210**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:18	1
Chromium	**0.095**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:18	1
Cobalt	**0.0072**		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:18	1
Copper	**0.059**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:18	1
Iron	**25**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:18	1
Lead	**0.41**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:18	1
Magnesium	**330**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:18	1
Manganese	**0.59**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:18	1
Nickel	**0.031**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:18	1
Potassium	**110**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:18	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:18	1
Sodium	**420**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:18	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:18	1
Vanadium	**0.041**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:18	1
Zinc	**0.21**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:23	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:23	1
Arsenic	**0.011**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:23	1
Barium	**0.17**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:23	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:23	1
Calcium	**200**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:23	1
Chromium	**0.066**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:23	1
Cobalt	**0.0031**	**J**	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:23	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:23	1
Iron	**9.8**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:23	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:23	1
Magnesium	**310**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:23	1
Manganese	**0.48**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:23	1
Nickel	**0.0082**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:23	1
Potassium	**110**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:23	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(10-12)-110315

Lab Sample ID: 500-103464-9

Date Collected: 11/03/15 13:10

Matrix: Water

Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**420**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:23	1
Vanadium	**0.034**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**120**	**B**	10	2.2	mg/L		11/11/15 13:15	11/12/15 18:41	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(14-17)-110315

Lab Sample ID: 500-103464-10

Date Collected: 11/03/15 14:00
Matrix: Water
Date Received: 11/03/15 14:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.3**		5.0	1.7	ug/L			11/13/15 17:54	1
Benzene	**30**		0.50	0.15	ug/L			11/13/15 17:54	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 17:54	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 17:54	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 17:54	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 17:54	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 17:54	1
Chlorobenzene	**100**		1.0	0.39	ug/L			11/13/15 17:54	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 17:54	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 17:54	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 17:54	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 17:54	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 17:54	1
Cyclohexane	**2.5**		1.0	0.49	ug/L			11/13/15 17:54	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 17:54	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 17:54	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,2-Dichlorobenzene	**1.0**		1.0	0.33	ug/L			11/13/15 17:54	1
1,3-Dichlorobenzene	**8.5**		1.0	0.40	ug/L			11/13/15 17:54	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 17:54	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 17:54	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 17:54	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 17:54	1
Ethylbenzene	**1.4**		0.50	0.18	ug/L			11/13/15 17:54	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 17:54	1
Isopropylbenzene	**9.7**		1.0	0.39	ug/L			11/13/15 17:54	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 17:54	1
Methylcyclohexane	**0.66**	**J**	1.0	0.32	ug/L			11/13/15 17:54	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 17:54	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 17:54	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 17:54	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 17:54	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 17:54	1
Tetrachloroethene	**0.83**	**J**	1.0	0.37	ug/L			11/13/15 17:54	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 17:54	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 17:54	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 17:54	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 17:54	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 17:54	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 17:54	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 17:54	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 17:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 17:54	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 17:54	1
Xylenes, Total	**3.4**		1.0	0.22	ug/L			11/13/15 17:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(14-17)-110315

Lab Sample ID: 500-103464-10

Date Collected: 11/03/15 14:00
Matrix: Water
Date Received: 11/03/15 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/13/15 17:54*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*11/13/15 17:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/13/15 17:54*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*11/13/15 17:54*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.9**		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:28	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:28	1
Arsenic	**0.0090**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:28	1
Barium	**0.39**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:28	1
Cadmium	**0.0037**		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:28	1
Calcium	**120**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:28	1
Chromium	**0.058**		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:28	1
Cobalt	**0.0028**	**J**	0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:28	1
Copper	**0.035**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:28	1
Iron	**41**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:28	1
Lead	**0.13**		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:28	1
Magnesium	**100**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:28	1
Manganese	**0.32**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:28	1
Nickel	**0.071**		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:28	1
Potassium	**74**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:28	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:28	1
Sodium	**270**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:28	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:28	1
Vanadium	**0.0056**		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:28	1
Zinc	**0.34**		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:28	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 05:33	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 05:33	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:33	1
Barium	**0.27**		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:33	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 05:33	1
Cadmium	**0.00097**	**J**	0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 05:33	1
Calcium	**120**		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 05:33	1
Chromium	**0.0038**	**J**	0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 05:33	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 05:33	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 05:33	1
Iron	**26**		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 05:33	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 05:33	1
Magnesium	**100**		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 05:33	1
Manganese	**0.24**		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 05:33	1
Nickel	**0.0046**	**J**	0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 05:33	1
Potassium	**76**		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 05:33	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 05:33	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 05:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(14-17)-110315

Lab Sample ID: 500-103464-10

Date Collected: 11/03/15 14:00
Matrix: Water
Date Received: 11/03/15 14:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**280**		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 05:33	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 05:33	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 05:33	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 05:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00014**	**J**	0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:17	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 12:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**81**	**B**	4.0	0.86	mg/L		11/11/15 13:15	11/12/15 18:43	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: Trip Blank

Date Collected: 11/02/15 00:00
Date Received: 11/03/15 14:50

Lab Sample ID: 500-103464-11

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 01:02	1
Benzene	<0.50		0.50	0.15	ug/L			11/13/15 01:02	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 01:02	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 01:02	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 01:02	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 01:02	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 01:02	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 01:02	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 01:02	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 01:02	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 01:02	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 01:02	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 01:02	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 01:02	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 01:02	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 01:02	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 01:02	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 01:02	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 01:02	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 01:02	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 01:02	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 01:02	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 01:02	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 01:02	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 01:02	1
Methylene Chloride	**5.8**	**B**	5.0	1.6	ug/L			11/13/15 01:02	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 01:02	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 01:02	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 01:02	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 01:02	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 01:02	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 01:02	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 01:02	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 01:02	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 01:02	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 01:02	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 01:02	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 01:02	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 01:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 01:02	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 01:02	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 01:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103464-11

Date Collected: 11/02/15 00:00

Matrix: Water

Date Received: 11/03/15 14:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		75 - 120		11/13/15 01:02	1
Dibromofluoromethane	86		75 - 120		11/13/15 01:02	1
1,2-Dichloroethane-d4 (Surr)	82		75 - 125		11/13/15 01:02	1
Toluene-d8 (Surr)	102		75 - 120		11/13/15 01:02	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

GC/MS VOA

Analysis Batch: 312425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-1	VAP-HPT-05(6-9)-110215	Total/NA	Water	8260B	
500-103464-1 - DL	VAP-HPT-05(6-9)-110215	Total/NA	Water	8260B	
500-103464-2	VAP-HPT-05(10-13)-110215	Total/NA	Water	8260B	
500-103464-3	VAP-HPT-05(14-17)-110215	Total/NA	Water	8260B	
500-103464-4	VAP-HPT-05(18-20)-110215	Total/NA	Water	8260B	
500-103464-5	VAP-HPT-06(10-13)-110315	Total/NA	Water	8260B	
500-103464-6	VAP-HPT-06(14-17)-110315	Total/NA	Water	8260B	
500-103464-7	VAP-HPT-06(18-20)-110315	Total/NA	Water	8260B	
500-103464-8	VAP-HPT-07(6-9)-110315	Total/NA	Water	8260B	
500-103464-11	Trip Blank	Total/NA	Water	8260B	
LCS 500-312425/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-312425/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 312500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-9	VAP-HPT-07(10-12)-110315	Total/NA	Water	8260B	
500-103464-10	VAP-HPT-07(14-17)-110315	Total/NA	Water	8260B	
LCS 500-312500/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-312500/6	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 311475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-1	VAP-HPT-05(6-9)-110215	Dissolved	Water	3010A	
500-103464-1	VAP-HPT-05(6-9)-110215	Total/NA	Water	3010A	
500-103464-2	VAP-HPT-05(10-13)-110215	Dissolved	Water	3010A	
500-103464-2	VAP-HPT-05(10-13)-110215	Total/NA	Water	3010A	
500-103464-3	VAP-HPT-05(14-17)-110215	Dissolved	Water	3010A	
500-103464-3	VAP-HPT-05(14-17)-110215	Total/NA	Water	3010A	
500-103464-3 DU	VAP-HPT-05(14-17)-110215	Total/NA	Water	3010A	
500-103464-3 MS	VAP-HPT-05(14-17)-110215	Total/NA	Water	3010A	
500-103464-3 MSD	VAP-HPT-05(14-17)-110215	Total/NA	Water	3010A	
500-103464-4	VAP-HPT-05(18-20)-110215	Dissolved	Water	3010A	
500-103464-4	VAP-HPT-05(18-20)-110215	Total/NA	Water	3010A	
500-103464-5	VAP-HPT-06(10-13)-110315	Dissolved	Water	3010A	
500-103464-5	VAP-HPT-06(10-13)-110315	Total/NA	Water	3010A	
500-103464-6	VAP-HPT-06(14-17)-110315	Dissolved	Water	3010A	
500-103464-6	VAP-HPT-06(14-17)-110315	Total/NA	Water	3010A	
500-103464-7	VAP-HPT-06(18-20)-110315	Dissolved	Water	3010A	
500-103464-7	VAP-HPT-06(18-20)-110315	Total/NA	Water	3010A	
500-103464-8	VAP-HPT-07(6-9)-110315	Dissolved	Water	3010A	
500-103464-8	VAP-HPT-07(6-9)-110315	Total/NA	Water	3010A	
500-103464-9	VAP-HPT-07(10-12)-110315	Dissolved	Water	3010A	
500-103464-9	VAP-HPT-07(10-12)-110315	Total/NA	Water	3010A	
500-103464-10	VAP-HPT-07(14-17)-110315	Dissolved	Water	3010A	
500-103464-10	VAP-HPT-07(14-17)-110315	Total/NA	Water	3010A	
LCS 500-311475/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-311475/1-A	Method Blank	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 311481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-1	VAP-HPT-05(6-9)-110215	Dissolved	Water	7470A	
500-103464-1	VAP-HPT-05(6-9)-110215	Total/NA	Water	7470A	
500-103464-2	VAP-HPT-05(10-13)-110215	Dissolved	Water	7470A	
500-103464-2	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	
500-103464-2 DU	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	
500-103464-2 MS	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	
500-103464-2 MSD	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	
500-103464-3	VAP-HPT-05(14-17)-110215	Dissolved	Water	7470A	
500-103464-3	VAP-HPT-05(14-17)-110215	Total/NA	Water	7470A	
500-103464-4	VAP-HPT-05(18-20)-110215	Dissolved	Water	7470A	
500-103464-4	VAP-HPT-05(18-20)-110215	Total/NA	Water	7470A	
500-103464-5	VAP-HPT-06(10-13)-110315	Dissolved	Water	7470A	
500-103464-5	VAP-HPT-06(10-13)-110315	Total/NA	Water	7470A	
500-103464-6	VAP-HPT-06(14-17)-110315	Dissolved	Water	7470A	
500-103464-6	VAP-HPT-06(14-17)-110315	Total/NA	Water	7470A	
500-103464-7	VAP-HPT-06(18-20)-110315	Dissolved	Water	7470A	
500-103464-7	VAP-HPT-06(18-20)-110315	Total/NA	Water	7470A	
500-103464-8	VAP-HPT-07(6-9)-110315	Dissolved	Water	7470A	
500-103464-8	VAP-HPT-07(6-9)-110315	Total/NA	Water	7470A	
500-103464-9	VAP-HPT-07(10-12)-110315	Dissolved	Water	7470A	
500-103464-9	VAP-HPT-07(10-12)-110315	Total/NA	Water	7470A	
500-103464-10	VAP-HPT-07(14-17)-110315	Dissolved	Water	7470A	
500-103464-10	VAP-HPT-07(14-17)-110315	Total/NA	Water	7470A	
LCS 500-311481/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-311481/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 311656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-1	VAP-HPT-05(6-9)-110215	Dissolved	Water	6010C	311475
500-103464-1	VAP-HPT-05(6-9)-110215	Total/NA	Water	6010C	311475
500-103464-2	VAP-HPT-05(10-13)-110215	Dissolved	Water	6010C	311475
500-103464-2	VAP-HPT-05(10-13)-110215	Total/NA	Water	6010C	311475
500-103464-3	VAP-HPT-05(14-17)-110215	Dissolved	Water	6010C	311475
500-103464-3	VAP-HPT-05(14-17)-110215	Total/NA	Water	6010C	311475
500-103464-3 DU	VAP-HPT-05(14-17)-110215	Total/NA	Water	6010C	311475
500-103464-3 MS	VAP-HPT-05(14-17)-110215	Total/NA	Water	6010C	311475
500-103464-3 MSD	VAP-HPT-05(14-17)-110215	Total/NA	Water	6010C	311475
500-103464-4	VAP-HPT-05(18-20)-110215	Dissolved	Water	6010C	311475
500-103464-4	VAP-HPT-05(18-20)-110215	Total/NA	Water	6010C	311475
500-103464-5	VAP-HPT-06(10-13)-110315	Dissolved	Water	6010C	311475
500-103464-5	VAP-HPT-06(10-13)-110315	Total/NA	Water	6010C	311475
500-103464-6	VAP-HPT-06(14-17)-110315	Dissolved	Water	6010C	311475
500-103464-6	VAP-HPT-06(14-17)-110315	Total/NA	Water	6010C	311475
500-103464-7	VAP-HPT-06(18-20)-110315	Dissolved	Water	6010C	311475
500-103464-7	VAP-HPT-06(18-20)-110315	Total/NA	Water	6010C	311475
500-103464-8	VAP-HPT-07(6-9)-110315	Dissolved	Water	6010C	311475
500-103464-8	VAP-HPT-07(6-9)-110315	Total/NA	Water	6010C	311475
500-103464-9	VAP-HPT-07(10-12)-110315	Dissolved	Water	6010C	311475
500-103464-9	VAP-HPT-07(10-12)-110315	Total/NA	Water	6010C	311475
500-103464-10	VAP-HPT-07(14-17)-110315	Dissolved	Water	6010C	311475
500-103464-10	VAP-HPT-07(14-17)-110315	Total/NA	Water	6010C	311475

Metals (Continued)

Analysis Batch: 311656 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-311475/2-A	Lab Control Sample	Total/NA	Water	6010C	311475
MB 500-311475/1-A	Method Blank	Total/NA	Water	6010C	311475

Analysis Batch: 311795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-1	VAP-HPT-05(6-9)-110215	Dissolved	Water	7470A	311481
500-103464-1	VAP-HPT-05(6-9)-110215	Total/NA	Water	7470A	311481
500-103464-2	VAP-HPT-05(10-13)-110215	Dissolved	Water	7470A	311481
500-103464-2	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	311481
500-103464-2 DU	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	311481
500-103464-2 MS	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	311481
500-103464-2 MSD	VAP-HPT-05(10-13)-110215	Total/NA	Water	7470A	311481
500-103464-3	VAP-HPT-05(14-17)-110215	Dissolved	Water	7470A	311481
500-103464-3	VAP-HPT-05(14-17)-110215	Total/NA	Water	7470A	311481
500-103464-4	VAP-HPT-05(18-20)-110215	Dissolved	Water	7470A	311481
500-103464-4	VAP-HPT-05(18-20)-110215	Total/NA	Water	7470A	311481
500-103464-5	VAP-HPT-06(10-13)-110315	Dissolved	Water	7470A	311481
500-103464-5	VAP-HPT-06(10-13)-110315	Total/NA	Water	7470A	311481
500-103464-6	VAP-HPT-06(14-17)-110315	Dissolved	Water	7470A	311481
500-103464-6	VAP-HPT-06(14-17)-110315	Total/NA	Water	7470A	311481
500-103464-7	VAP-HPT-06(18-20)-110315	Dissolved	Water	7470A	311481
500-103464-7	VAP-HPT-06(18-20)-110315	Total/NA	Water	7470A	311481
500-103464-8	VAP-HPT-07(6-9)-110315	Dissolved	Water	7470A	311481
500-103464-8	VAP-HPT-07(6-9)-110315	Total/NA	Water	7470A	311481
500-103464-9	VAP-HPT-07(10-12)-110315	Dissolved	Water	7470A	311481
500-103464-9	VAP-HPT-07(10-12)-110315	Total/NA	Water	7470A	311481
500-103464-10	VAP-HPT-07(14-17)-110315	Dissolved	Water	7470A	311481
500-103464-10	VAP-HPT-07(14-17)-110315	Total/NA	Water	7470A	311481
LCS 500-311481/13-A	Lab Control Sample	Total/NA	Water	7470A	311481
MB 500-311481/12-A	Method Blank	Total/NA	Water	7470A	311481

General Chemistry

Prep Batch: 312200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-1	VAP-HPT-05(6-9)-110215	Total/NA	Water	SM 4500 NH3 B	
500-103464-2	VAP-HPT-05(10-13)-110215	Total/NA	Water	SM 4500 NH3 B	
500-103464-3	VAP-HPT-05(14-17)-110215	Total/NA	Water	SM 4500 NH3 B	
500-103464-4	VAP-HPT-05(18-20)-110215	Total/NA	Water	SM 4500 NH3 B	
500-103464-5	VAP-HPT-06(10-13)-110315	Total/NA	Water	SM 4500 NH3 B	
500-103464-6	VAP-HPT-06(14-17)-110315	Total/NA	Water	SM 4500 NH3 B	
500-103464-7	VAP-HPT-06(18-20)-110315	Total/NA	Water	SM 4500 NH3 B	
500-103464-8	VAP-HPT-07(6-9)-110315	Total/NA	Water	SM 4500 NH3 B	
500-103464-9	VAP-HPT-07(10-12)-110315	Total/NA	Water	SM 4500 NH3 B	
500-103464-10	VAP-HPT-07(14-17)-110315	Total/NA	Water	SM 4500 NH3 B	
LCS 500-312200/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-312200/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

General Chemistry (Continued)

Analysis Batch: 312437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-1	VAP-HPT-05(6-9)-110215	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-2	VAP-HPT-05(10-13)-110215	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-3	VAP-HPT-05(14-17)-110215	Total/NA	Water	SM 4500 NH3 G	312200
LCS 500-312200/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	312200
MB 500-312200/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	312200

Analysis Batch: 312469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103464-4	VAP-HPT-05(18-20)-110215	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-5	VAP-HPT-06(10-13)-110315	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-6	VAP-HPT-06(14-17)-110315	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-7	VAP-HPT-06(18-20)-110315	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-8	VAP-HPT-07(6-9)-110315	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-9	VAP-HPT-07(10-12)-110315	Total/NA	Water	SM 4500 NH3 G	312200
500-103464-10	VAP-HPT-07(14-17)-110315	Total/NA	Water	SM 4500 NH3 G	312200
LCS 500-312200/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	312200
MB 500-312200/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	312200

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(75-120)	(75-120)	(75-125)	(75-120)
500-103464-1	VAP-HPT-05(6-9)-110215	95	97	98	83
500-103464-1 - DL	VAP-HPT-05(6-9)-110215	91	84	79	100
500-103464-2	VAP-HPT-05(10-13)-110215	96	99	101	99
500-103464-3	VAP-HPT-05(14-17)-110215	93	99	99	100
500-103464-4	VAP-HPT-05(18-20)-110215	86	99	94	95
500-103464-5	VAP-HPT-06(10-13)-110315	96	100	99	102
500-103464-6	VAP-HPT-06(14-17)-110315	93	99	105	100
500-103464-7	VAP-HPT-06(18-20)-110315	96	104	110	103
500-103464-8	VAP-HPT-07(6-9)-110315	103	100	104	100
500-103464-9	VAP-HPT-07(10-12)-110315	95	97	100	102
500-103464-10	VAP-HPT-07(14-17)-110315	95	101	101	102
500-103464-11	Trip Blank	99	86	82	102
LCS 500-312425/4	Lab Control Sample	97	104	100	88
LCS 500-312500/4	Lab Control Sample	95	98	99	100
MB 500-312425/6	Method Blank	95	101	103	81
MB 500-312500/6	Method Blank	93	97	99	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-312425/6
Matrix: Water
Analysis Batch: 312425

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 00:35	1
Benzene	<0.50		0.50	0.15	ug/L			11/13/15 00:35	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 00:35	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 00:35	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 00:35	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 00:35	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 00:35	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 00:35	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 00:35	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 00:35	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 00:35	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 00:35	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 00:35	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 00:35	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 00:35	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 00:35	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 00:35	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 00:35	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 00:35	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 00:35	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 00:35	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 00:35	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 00:35	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 00:35	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 00:35	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 00:35	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 00:35	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 00:35	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 00:35	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 00:35	1
Methylene Chloride	5.66		5.0	1.6	ug/L			11/13/15 00:35	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 00:35	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 00:35	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 00:35	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 00:35	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 00:35	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 00:35	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 00:35	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 00:35	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 00:35	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 00:35	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 00:35	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 00:35	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 00:35	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 00:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 00:35	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 00:35	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 00:35	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		75 - 120		11/13/15 00:35	1
Dibromofluoromethane	101		75 - 120		11/13/15 00:35	1
1,2-Dichloroethane-d4 (Surr)	103		75 - 125		11/13/15 00:35	1
Toluene-d8 (Surr)	81		75 - 120		11/13/15 00:35	1

Lab Sample ID: LCS 500-312425/4
Matrix: Water
Analysis Batch: 312425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	52.1		ug/L		104	47 - 131
Benzene	50.0	47.0		ug/L		94	70 - 120
Bromodichloromethane	50.0	38.6		ug/L		77	70 - 127
Bromoform	50.0	43.0		ug/L		86	70 - 135
Bromomethane	50.0	37.0		ug/L		74	30 - 170
Carbon disulfide	50.0	44.9		ug/L		90	61 - 120
Carbon tetrachloride	50.0	40.3		ug/L		81	70 - 136
Chlorobenzene	50.0	49.3		ug/L		99	70 - 120
Chloroethane	50.0	36.2		ug/L		72	40 - 150
Chloroform	50.0	46.8		ug/L		94	70 - 120
Chloromethane	50.0	47.6		ug/L		95	45 - 140
cis-1,2-Dichloroethene	50.0	44.3		ug/L		89	70 - 120
cis-1,3-Dichloropropene	50.0	38.3		ug/L		77	70 - 122
Cyclohexane	50.0	50.4		ug/L		101	60 - 133
Dibromochloromethane	50.0	41.0		ug/L		82	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	40.7		ug/L		81	59 - 139
1,2-Dibromoethane	50.0	44.8		ug/L		90	70 - 124
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	70 - 123
1,3-Dichlorobenzene	50.0	45.9		ug/L		92	70 - 122
1,4-Dichlorobenzene	50.0	48.7		ug/L		97	70 - 120
Dichlorodifluoromethane	50.0	33.0		ug/L		66	30 - 150
1,1-Dichloroethane	50.0	46.1		ug/L		92	70 - 127
1,2-Dichloroethane	50.0	47.2		ug/L		94	66 - 132
1,1-Dichloroethene	50.0	45.2		ug/L		90	68 - 121
1,2-Dichloropropane	50.0	52.4		ug/L		105	70 - 127
Ethylbenzene	50.0	47.2		ug/L		94	70 - 125
2-Hexanone	50.0	41.2		ug/L		82	53 - 140
Isopropylbenzene	50.0	46.8		ug/L		94	70 - 132
Methyl acetate	250	319		ug/L		128	56 - 131
Methylcyclohexane	50.0	45.2		ug/L		90	60 - 140
Methylene Chloride	50.0	52.1		ug/L		104	70 - 120
Methyl Ethyl Ketone	50.0	52.3		ug/L		105	51 - 134
methyl isobutyl ketone	50.0	44.5		ug/L		89	53 - 135
Methyl tert-butyl ether	50.0	45.3		ug/L		91	65 - 120
Styrene	50.0	48.6		ug/L		97	70 - 120
1,1,2,2-Tetrachloroethane	50.0	50.5		ug/L		101	68 - 133
Tetrachloroethene	50.0	42.9		ug/L		86	70 - 129
Toluene	50.0	41.1		ug/L		82	70 - 120
trans-1,2-Dichloroethene	50.0	44.9		ug/L		90	70 - 120
trans-1,3-Dichloropropene	50.0	38.8		ug/L		78	70 - 123
1,2,4-Trichlorobenzene	50.0	46.8		ug/L		94	70 - 125
1,1,1-Trichloroethane	50.0	41.3		ug/L		83	70 - 125
1,1,2-Trichloroethane	50.0	45.8		ug/L		92	70 - 125
Trichloroethene	50.0	46.6		ug/L		93	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-312425/4
Matrix: Water
Analysis Batch: 312425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	34.9		ug/L		70	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	43.9		ug/L		88	64 - 120
Vinyl chloride	50.0	37.2		ug/L		74	63 - 127
Xylenes, Total	100	91.4		ug/L		91	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*75 - 120*
Dibromofluoromethane	*104*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*
Toluene-d8 (Surr)	*88*		*75 - 120*

Lab Sample ID: MB 500-312500/6
Matrix: Water
Analysis Batch: 312500

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 17:01	1
Benzene	<0.50		0.50	0.15	ug/L			11/13/15 17:01	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 17:01	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 17:01	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 17:01	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 17:01	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 17:01	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 17:01	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 17:01	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 17:01	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 17:01	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 17:01	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 17:01	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 17:01	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 17:01	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 17:01	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 17:01	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 17:01	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 17:01	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 17:01	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 17:01	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 17:01	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 17:01	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 17:01	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 17:01	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 17:01	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 17:01	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 17:01	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 17:01	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 17:01	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 17:01	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-312500/6
Matrix: Water
Analysis Batch: 312500

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 17:01	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 17:01	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 17:01	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 17:01	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 17:01	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 17:01	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 17:01	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 17:01	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 17:01	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 17:01	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 17:01	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 17:01	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 17:01	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 17:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 17:01	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 17:01	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 17:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*11/13/15 17:01*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*11/13/15 17:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*11/13/15 17:01*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*11/13/15 17:01*	*1*

Lab Sample ID: LCS 500-312500/4
Matrix: Water
Analysis Batch: 312500

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	52.1		ug/L		104	47 - 131
Benzene	50.0	48.4		ug/L		97	70 - 120
Bromodichloromethane	50.0	45.3		ug/L		91	70 - 127
Bromoform	50.0	42.7		ug/L		85	70 - 135
Bromomethane	50.0	44.0		ug/L		88	30 - 170
Carbon disulfide	50.0	48.9		ug/L		98	61 - 120
Carbon tetrachloride	50.0	40.4		ug/L		81	70 - 136
Chlorobenzene	50.0	49.6		ug/L		99	70 - 120
Chloroethane	50.0	42.8		ug/L		86	40 - 150
Chloroform	50.0	48.0		ug/L		96	70 - 120
Chloromethane	50.0	57.3		ug/L		115	45 - 140
cis-1,2-Dichloroethene	50.0	48.7		ug/L		97	70 - 120
cis-1,3-Dichloropropene	50.0	49.6		ug/L		99	70 - 122
Cyclohexane	50.0	55.7		ug/L		111	60 - 133
Dibromochloromethane	50.0	46.8		ug/L		94	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	46.2		ug/L		92	59 - 139
1,2-Dibromoethane	50.0	49.5		ug/L		99	70 - 124
1,2-Dichlorobenzene	50.0	48.8		ug/L		98	70 - 123
1,3-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-312500/4
Matrix: Water
Analysis Batch: 312500

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	48.4		ug/L		97	70 - 120
Dichlorodifluoromethane	50.0	40.9		ug/L		82	30 - 150
1,1-Dichloroethane	50.0	54.3		ug/L		109	70 - 127
1,2-Dichloroethane	50.0	47.2		ug/L		94	66 - 132
1,1-Dichloroethene	50.0	47.0		ug/L		94	68 - 121
1,2-Dichloropropane	50.0	55.8		ug/L		112	70 - 127
Ethylbenzene	50.0	48.7		ug/L		97	70 - 125
2-Hexanone	50.0	59.5		ug/L		119	53 - 140
Isopropylbenzene	50.0	47.1		ug/L		94	70 - 132
Methyl acetate	250	317		ug/L		127	56 - 131
Methylcyclohexane	50.0	49.4		ug/L		99	60 - 140
Methylene Chloride	50.0	50.7		ug/L		101	70 - 120
Methyl Ethyl Ketone	50.0	60.7		ug/L		121	51 - 134
methyl isobutyl ketone	50.0	58.6		ug/L		117	53 - 135
Methyl tert-butyl ether	50.0	51.1		ug/L		102	65 - 120
Styrene	50.0	48.3		ug/L		97	70 - 120
1,1,2,2-Tetrachloroethane	50.0	52.2		ug/L		104	68 - 133
Tetrachloroethene	50.0	44.9		ug/L		90	70 - 129
Toluene	50.0	47.5		ug/L		95	70 - 120
trans-1,2-Dichloroethene	50.0	47.8		ug/L		96	70 - 120
trans-1,3-Dichloropropene	50.0	48.7		ug/L		97	70 - 123
1,2,4-Trichlorobenzene	50.0	50.0		ug/L		100	70 - 125
1,1,1-Trichloroethane	50.0	41.4		ug/L		83	70 - 125
1,1,2-Trichloroethane	50.0	50.9		ug/L		102	70 - 125
Trichloroethene	50.0	46.6		ug/L		93	70 - 122
Trichlorofluoromethane	50.0	43.9		ug/L		88	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	47.4		ug/L		95	64 - 120
Vinyl chloride	50.0	50.3		ug/L		101	63 - 127
Xylenes, Total	100	92.3		ug/L		92	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*
Dibromofluoromethane	*98*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*
Toluene-d8 (Surr)	*100*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-311475/1-A
Matrix: Water
Analysis Batch: 311656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311475

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/06/15 09:45	11/07/15 03:08	1
Antimony	<0.020		0.020	0.0064	mg/L		11/06/15 09:45	11/07/15 03:08	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:08	1
Barium	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:08	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-311475/1-A
Matrix: Water
Analysis Batch: 311656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311475

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/06/15 09:45	11/07/15 03:08	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/06/15 09:45	11/07/15 03:08	1
Calcium	<0.20		0.20	0.059	mg/L		11/06/15 09:45	11/07/15 03:08	1
Chromium	<0.010		0.010	0.0024	mg/L		11/06/15 09:45	11/07/15 03:08	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/06/15 09:45	11/07/15 03:08	1
Copper	<0.010		0.010	0.0022	mg/L		11/06/15 09:45	11/07/15 03:08	1
Iron	<0.20		0.20	0.10	mg/L		11/06/15 09:45	11/07/15 03:08	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/06/15 09:45	11/07/15 03:08	1
Magnesium	<0.10		0.10	0.034	mg/L		11/06/15 09:45	11/07/15 03:08	1
Manganese	<0.010		0.010	0.0034	mg/L		11/06/15 09:45	11/07/15 03:08	1
Nickel	<0.010		0.010	0.0031	mg/L		11/06/15 09:45	11/07/15 03:08	1
Potassium	<0.50		0.50	0.16	mg/L		11/06/15 09:45	11/07/15 03:08	1
Selenium	<0.010		0.010	0.0046	mg/L		11/06/15 09:45	11/07/15 03:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/06/15 09:45	11/07/15 03:08	1
Sodium	<1.0		1.0	0.43	mg/L		11/06/15 09:45	11/07/15 03:08	1
Thallium	<0.010		0.010	0.0028	mg/L		11/06/15 09:45	11/07/15 03:08	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/06/15 09:45	11/07/15 03:08	1
Zinc	<0.020		0.020	0.0090	mg/L		11/06/15 09:45	11/07/15 03:08	1

Lab Sample ID: LCS 500-311475/2-A
Matrix: Water
Analysis Batch: 311656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311475

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.02		mg/L		101	80 - 120
Antimony	0.500	0.488		mg/L		98	80 - 120
Arsenic	0.100	0.0994		mg/L		99	80 - 120
Barium	2.00	2.07		mg/L		104	80 - 120
Beryllium	0.0500	0.0510		mg/L		102	80 - 120
Cadmium	0.0500	0.0483		mg/L		97	80 - 120
Calcium	10.0	9.89		mg/L		99	80 - 120
Chromium	0.200	0.197		mg/L		98	80 - 120
Cobalt	0.500	0.499		mg/L		100	80 - 120
Copper	0.250	0.248		mg/L		99	80 - 120
Iron	1.00	1.03		mg/L		103	80 - 120
Lead	0.100	0.0979		mg/L		98	80 - 120
Magnesium	10.0	9.81		mg/L		98	80 - 120
Manganese	0.500	0.507		mg/L		101	80 - 120
Nickel	0.500	0.493		mg/L		99	80 - 120
Potassium	10.0	10.7		mg/L		107	80 - 120
Selenium	0.100	0.0897		mg/L		90	80 - 120
Silver	0.0500	0.0479		mg/L		96	80 - 120
Sodium	10.0	10.8		mg/L		108	80 - 120
Thallium	0.100	0.0932		mg/L		93	80 - 120
Vanadium	0.500	0.503		mg/L		101	80 - 120
Zinc	0.500	0.502		mg/L		100	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-103464-3 MS — **Client Sample ID: VAP-HPT-05(14-17)-110215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311656 — **Prep Batch: 311475**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	5.4	F1	2.00	9.47	F1	mg/L		204	75 - 125
Antimony	<0.020		0.500	0.502		mg/L		100	75 - 125
Arsenic	0.010		0.100	0.114		mg/L		104	75 - 125
Barium	0.37		2.00	2.40		mg/L		101	75 - 125
Beryllium	<0.0040		0.0500	0.0523		mg/L		105	75 - 125
Cadmium	0.0016	J	0.0500	0.0517		mg/L		100	75 - 125
Calcium	350		10.0	357	4	mg/L		63	75 - 125
Chromium	0.025		0.200	0.211		mg/L		93	75 - 125
Cobalt	<0.0050		0.500	0.515		mg/L		103	75 - 125
Copper	0.026		0.250	0.285		mg/L		103	75 - 125
Iron	20		1.00	20.8	4	mg/L		104	75 - 125
Lead	0.064		0.100	0.167		mg/L		102	75 - 125
Magnesium	76		10.0	85.6	4	mg/L		92	75 - 125
Manganese	0.64		0.500	1.11		mg/L		96	75 - 125
Nickel	0.014		0.500	0.517		mg/L		101	75 - 125
Potassium	49		10.0	59.5	4	mg/L		104	75 - 125
Selenium	0.0079	J F1	0.100	0.0480	F1	mg/L		40	75 - 125
Silver	<0.0050		0.0500	0.0509		mg/L		102	75 - 125
Sodium	280		10.0	290	4	mg/L		65	75 - 125
Thallium	<0.010		0.100	0.0888		mg/L		89	75 - 125
Vanadium	0.0096		0.500	0.508		mg/L		100	75 - 125
Zinc	0.27		0.500	0.777		mg/L		101	75 - 125

Lab Sample ID: 500-103464-3 MSD — **Client Sample ID: VAP-HPT-05(14-17)-110215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311656 — **Prep Batch: 311475**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	5.4	F1	2.00	9.83	F1	mg/L		222	75 - 125	4	20
Antimony	<0.020		0.500	0.504		mg/L		101	75 - 125	0	20
Arsenic	0.010		0.100	0.113		mg/L		103	75 - 125	1	20
Barium	0.37		2.00	2.45		mg/L		104	75 - 125	2	20
Beryllium	<0.0040		0.0500	0.0531		mg/L		106	75 - 125	2	20
Cadmium	0.0016	J	0.0500	0.0520		mg/L		101	75 - 125	1	20
Calcium	350		10.0	367	4	mg/L		156	75 - 125	3	20
Chromium	0.025		0.200	0.217		mg/L		96	75 - 125	2	20
Cobalt	<0.0050		0.500	0.522		mg/L		104	75 - 125	1	20
Copper	0.026		0.250	0.289		mg/L		105	75 - 125	1	20
Iron	20		1.00	21.3	4	mg/L		158	75 - 125	3	20
Lead	0.064		0.100	0.164		mg/L		99	75 - 125	2	20
Magnesium	76		10.0	88.0	4	mg/L		116	75 - 125	3	20
Manganese	0.64		0.500	1.14		mg/L		101	75 - 125	3	20
Nickel	0.014		0.500	0.526		mg/L		102	75 - 125	2	20
Potassium	49		10.0	61.0	4	mg/L		119	75 - 125	2	20
Selenium	0.0079	J F1	0.100	0.0418	F1	mg/L		34	75 - 125	14	20
Silver	<0.0050		0.0500	0.0512		mg/L		102	75 - 125	1	20
Sodium	280		10.0	297	4	mg/L		135	75 - 125	2	20
Thallium	<0.010		0.100	0.0886		mg/L		89	75 - 125	0	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-103464-3 MSD — **Client Sample ID: VAP-HPT-05(14-17)-110215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311656 — **Prep Batch: 311475**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vanadium	0.0096		0.500	0.518		mg/L		102	75 - 125	2	20
Zinc	0.27		0.500	0.792		mg/L		104	75 - 125	2	20

Lab Sample ID: 500-103464-3 DU — **Client Sample ID: VAP-HPT-05(14-17)-110215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311656 — **Prep Batch: 311475**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	5.4	F1	5.63		mg/L		4	20
Antimony	<0.020		0.00945	J	mg/L		NC	20
Arsenic	0.010		0.0119		mg/L		16	20
Barium	0.37		0.384		mg/L		3	20
Beryllium	<0.0040		<0.0040		mg/L		NC	20
Cadmium	0.0016	J	0.00213	F5	mg/L		26	20
Calcium	350		357		mg/L		2	20
Chromium	0.025		0.0261		mg/L		4	20
Cobalt	<0.0050		0.00115	J	mg/L		NC	20
Copper	0.026		0.0274		mg/L		3	20
Iron	20		20.1		mg/L		2	20
Lead	0.064		0.0647		mg/L		0.7	20
Magnesium	76		77.5		mg/L		1	20
Manganese	0.64		0.645		mg/L		2	20
Nickel	0.014		0.0126		mg/L		8	20
Potassium	49		50.5		mg/L		3	20
Selenium	0.0079	J F1	<0.010		mg/L		NC	20
Silver	<0.0050		0.00134	J	mg/L		NC	20
Sodium	280		292		mg/L		3	20
Thallium	<0.010		<0.010		mg/L		NC	20
Vanadium	0.0096		0.0110		mg/L		14	20
Zinc	0.27		0.278		mg/L		2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-311481/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311795 — **Prep Batch: 311481**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/06/15 14:15	11/09/15 11:24	1

Lab Sample ID: LCS 500-311481/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311795 — **Prep Batch: 311481**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00170		mg/L		85	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 500-103464-2 MS — **Client Sample ID: VAP-HPT-05(10-13)-110215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311795 — **Prep Batch: 311481**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	<0.00020		0.00100	0.00106		mg/L		106	75 - 125		

Lab Sample ID: 500-103464-2 MSD — **Client Sample ID: VAP-HPT-05(10-13)-110215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311795 — **Prep Batch: 311481**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.000963		mg/L		96	75 - 125	9	20

Lab Sample ID: 500-103464-2 DU — **Client Sample ID: VAP-HPT-05(10-13)-110215**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 311795 — **Prep Batch: 311481**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	<0.00020			<0.00020		mg/L				NC	20

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-312200/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312437 — **Prep Batch: 312200**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0540	J	0.20	0.043	mg/L		11/11/15 13:15	11/11/15 15:37	1

Lab Sample ID: MB 500-312200/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312469 — **Prep Batch: 312200**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0610	J	0.20	0.043	mg/L		11/11/15 13:15	11/12/15 18:21	1

Lab Sample ID: LCS 500-312200/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312437 — **Prep Batch: 312200**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia			2.50	2.34		mg/L		94	80 - 120		

Lab Sample ID: LCS 500-312200/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312469 — **Prep Batch: 312200**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia			2.50	2.38		mg/L		95	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(6-9)-110215 — Lab Sample ID: 500-103464-1

Date Collected: 11/02/15 09:30 — **Matrix: Water**
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	312425	11/13/15 05:03	DJD	TAL CHI
Total/NA	Analysis	8260B	DL	20	312425	11/13/15 05:30	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 03:23	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 03:18	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 11:30	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 11:28	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	312437	11/11/15 16:20	HMW	TAL CHI

Client Sample ID: VAP-HPT-05(10-13)-110215 — Lab Sample ID: 500-103464-2

Date Collected: 11/02/15 10:30 — **Matrix: Water**
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 07:23	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 03:34	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 03:29	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 11:43	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 11:32	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	312437	11/11/15 16:23	HMW	TAL CHI

Client Sample ID: VAP-HPT-05(14-17)-110215 — Lab Sample ID: 500-103464-3

Date Collected: 11/02/15 11:15 — **Matrix: Water**
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 07:50	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 04:12	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 03:39	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 11:47	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-05(14-17)-110215

Lab Sample ID: 500-103464-3
Date Collected: 11/02/15 11:15
Matrix: Water
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	311795	11/09/15 11:45	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	312437	11/11/15 16:25	HMW	TAL CHI

Client Sample ID: VAP-HPT-05(18-20)-110215

Lab Sample ID: 500-103464-4
Date Collected: 11/02/15 12:30
Matrix: Water
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 08:16	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 04:23	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 04:18	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 11:51	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 11:49	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	312469	11/12/15 18:26	HMW	TAL CHI

Client Sample ID: VAP-HPT-06(10-13)-110315

Lab Sample ID: 500-103464-5
Date Collected: 11/03/15 09:00
Matrix: Water
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 08:43	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 04:34	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 04:29	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 11:55	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 11:53	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	312469	11/12/15 18:29	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-06(14-17)-110315

Lab Sample ID: 500-103464-6
Date Collected: 11/03/15 09:30
Matrix: Water
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 09:10	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 04:52	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 04:39	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 11:59	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 11:57	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312469	11/12/15 18:32	HMW	TAL CHI

Client Sample ID: VAP-HPT-06(18-20)-110315

Lab Sample ID: 500-103464-7
Date Collected: 11/03/15 10:20
Matrix: Water
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 09:37	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 05:02	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 04:57	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 12:07	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 12:01	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312469	11/12/15 18:35	HMW	TAL CHI

Client Sample ID: VAP-HPT-07(6-9)-110315

Lab Sample ID: 500-103464-8
Date Collected: 11/03/15 12:45
Matrix: Water
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 10:04	DJD	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 05:13	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 05:08	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 12:11	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 12:09	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Client Sample ID: VAP-HPT-07(6-9)-110315 — Lab Sample ID: 500-103464-8

Date Collected: 11/03/15 12:45 — **Matrix: Water**
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	312469	11/12/15 18:38	HMW	TAL CHI

Client Sample ID: VAP-HPT-07(10-12)-110315 — Lab Sample ID: 500-103464-9

Date Collected: 11/03/15 13:10 — **Matrix: Water**
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312500	11/13/15 17:27	EMA	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 05:23	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 05:18	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 12:15	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 12:13	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312469	11/12/15 18:41	HMW	TAL CHI

Client Sample ID: VAP-HPT-07(14-17)-110315 — Lab Sample ID: 500-103464-10

Date Collected: 11/03/15 14:00 — **Matrix: Water**
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312500	11/13/15 17:54	EMA	TAL CHI
Dissolved	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Dissolved	Analysis	6010C		1	311656	11/07/15 05:33	KML	TAL CHI
Total/NA	Prep	3010A			311475	11/06/15 09:45	PFK	TAL CHI
Total/NA	Analysis	6010C		1	311656	11/07/15 05:28	KML	TAL CHI
Dissolved	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	311795	11/09/15 12:19	MJD	TAL CHI
Total/NA	Prep	7470A			311481	11/06/15 14:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	311795	11/09/15 12:17	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312200	11/11/15 13:15	ELR	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	312469	11/12/15 18:43	HMW	TAL CHI

Client Sample ID: Trip Blank — Lab Sample ID: 500-103464-11

Date Collected: 11/02/15 00:00 — **Matrix: Water**
Date Received: 11/03/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312425	11/13/15 01:02	DJD	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103464-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTA

2417 Bond Street, University Park, IL 6
Phone: 708.534.5200 Fax: 708.53

500-103464 COC

Report To (optional)
Contact: Jack Kratzmayer
Company: ARCADIS
Address: 10 S Riverside Plz #1900
Address: Chicago, IL 60606
Phone: 312-575-3700
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103464
Chain of Custody Number:
Page 1 of 1
Temperature °C of Cooler: 3.1

Client: ARCADIS
Client Project #: C0001805.0002.00013
Project Name: Lake Calumet Cluster SHC
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Dave Mukendrick
Lab PM: Bonnie Stadelmann

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Ammonia	TAL Metals-Total	TAL Metals-Dissolved	VOCs						Comments
1		VAP-HPT-05(6-9)-110215	11-2-15	0930	6	W	X	X	X	X						
2		VAP-HPT-05(10-13)-110215	11-2-15	1030	6	W	X	X	X	X						
3		VAP-HPT-05(14-17)-110215	11-2-15	1115	6	W	X	X	X	X						
4		VAP-HPT-05(18-20)-110215	11-2-15	1230	6	W	X	X	X	X						
5		VAP-HPT-06(10-13)-110315	11-3-15	0900	6	W	X	X	X	X						
6		VAP-HPT-06(14-17)-110315	11-3-15	0930	6	W	X	X	X	X						
7		VAP-HPT-06(18-20)-110315	11-3-15	1020	6	W	X	X	X	X						
8		VAP-HPT-07(6-9)-110315	11-3-15	1245	6	W	X	X	X	X						
9		VAP-HPT-07(10-12)-110315	11-3-15	1310	6	W	X	X	X	X						
10		VAP-HPT-07(14-17)-110315	11-3-15	1400	6	W	X	X	X	X						
11		Trip Blank														Added by TA

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ARCADIS	11-3-15	1400	[signature]	TA	11/3/15	1400
[signature]	TA	11/3/15	1450	[signature]	TA-CHI	11/3/15	1450

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
-TAL Metals (dissolved) were field filtered.

Lab Comments:

TAL-4124 (500-1300)
11/16/2015

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-103464-1

Login Number: 103464
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	Refer to Job Narrative for details.
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-103546-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
11/17/2015 12:51:29 PM

Bonnie Stadelmann, Senior Project Manager
(708)534-5200
bonnie.stadelmann@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-103546-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-103546-1

Comments
No additional comments.

Receipt
The samples were received on 11/4/2015 3:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9º C.

GC/MS VOA
Method(s) 8260B: The laboratory control sample (LCS) for batch 312503 recovered outside control limits for the following analytes: Cyclohexane and 1,1,2-Trichloro-1,2,2-Trifluoroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: VAP-HPT-08(9-12)-110315 (500-103546-1), VAP-HPT-08(14-17)-110315 (500-103546-2), VAP-HPT-09(9-12)-110415 (500-103546-3), VAP-HPT-09(14-17)-110415 (500-103546-4), VAP-HPT-11(10-13)-110415 (500-103546-5) and VAP-HPT-11(16-18)-110415 (500-103546-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The continuing calibration verification (CCV) associated with batch 500-312005 recovered above the upper control limit for Antimony. The samples associated with this CCV had results below the reporting limit (RL) for the affected analytes; therefore, the data have been reported. The following samples are impacted: VAP-HPT-08(9-12)-110315 (500-103546-1), VAP-HPT-08(14-17)-110315 (500-103546-2), VAP-HPT-09(9-12)-110415 (500-103546-3), VAP-HPT-09(14-17)-110415 (500-103546-4), VAP-HPT-11(10-13)-110415 (500-103546-5) and VAP-HPT-11(16-18)-110415 (500-103546-6).

Method(s) 6010C: The continuing calibration verification (CCV) associated with batch 500-312005 recovered above the upper control limit for Copper. The samples associated with this CCV had results below the reporting limit (RL) for the affected analytes; therefore, the data have been reported. The following samples are impacted: VAP-HPT-08(14-17)-110315 (500-103546-2), VAP-HPT-09(9-12)-110415 (500-103546-3) and VAP-HPT-11(10-13)-110415 (500-103546-5).

Method(s) 6010C: The low-level CCV at line 8 in 6010C batch 500-312005 was above the method acceptance limits of 70-130% recovery for Selenium. The samples VAP-HPT-08(9-12)-110315 (500-103546-1), VAP-HPT-08(14-17)-110315 (500-103546-2), VAP-HPT-09(9-12) -110415 (500-103546-3), VAP-HPT-09(14-17)-110415 (500-103546-4), VAP-HPT-11(10-13)-110415 (500-103546-5) and VAP-HPT-11(16-18)-110415 (500-103546-6) were bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315 — Lab Sample ID: 500-103546-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	2.5		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.2		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.6		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	45		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.64	J	1.0	0.32	ug/L	1		8260B	Total/NA
Xylenes, Total	0.46	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	12		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.019	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.036		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	2.9		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0022	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.012		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	81		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.21		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.015		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.62		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	110	B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.8		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	85		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.59		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.066		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	47		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.0043	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	160		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.018		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	3.5		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.86		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	66		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0027	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	17	B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	85		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.049		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0032	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	47		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	170		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	55	B	4.0	0.86	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-08(14-17)-110315 — Lab Sample ID: 500-103546-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	8.5		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	42		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.8		1.0	0.36	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.65	J	1.0	0.32	ug/L	1		8260B	Total/NA
Xylenes, Total	0.35	J	1.0	0.22	ug/L	1		8260B	Total/NA
Isopropylbenzene - DL	450		10	3.9	ug/L	10		8260B	Total/NA
Aluminum	2.0		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0076	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.43		0.010	0.0022	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315 (Continued) — Lab Sample ID: 500-103546-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0041		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	65		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.036		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0031	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.051		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	32	B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.29		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	80		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.024		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	56		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.0014	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	180		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0064		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.3		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	80		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0034	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	19	B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	100		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.082		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0080	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	71		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	120	B	8.0	1.7	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-09(9-12)-110415 — Lab Sample ID: 500-103546-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.69	J	1.0	0.41	ug/L	1		8260B	Total/NA
Isopropylbenzene	1.3		1.0	0.39	ug/L	1		8260B	Total/NA
Aluminum	4.8		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0062	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.35		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0035		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.035		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0079		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.053		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	43	B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.076		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	45		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.81		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.034		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	18		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	92		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.024		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.70		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.23		0.010	0.0022	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(9-12)-110415 (Continued) — Lab Sample ID: 500-103546-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	94		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	15	B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	35		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.45		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	14		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0060	J ^	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	76		1.0	0.43	mg/L	1		6010C	Dissolved
Ammonia	16	B	0.80	0.17	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-09(14-17)-110415 — Lab Sample ID: 500-103546-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.5		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	11		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	0.55		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	7.6		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.57		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	5.8		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	8.1		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.031		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.56		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0015	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0087		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.097		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0094		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.21		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	64	B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.31		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	43		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.77		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.042		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	17		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.076		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	91		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.019		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	2.8		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.28		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	95		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	18	B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	38		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.36		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	16		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	85		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.034		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.000088	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	22	B	1.6	0.34	mg/L	2		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-11(10-13)-110415 — Lab Sample ID: 500-103546-5

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415 (Continued) — Lab Sample ID: 500-103546-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	13		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	5.0		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	1.2		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.7		1.0	0.41	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	30		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	97		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	9.8		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.6		1.0	0.32	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	12		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	80		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	1.6		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	400		10	2.2	ug/L	10		8260B	Total/NA
Aluminum	32		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.017	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.15		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.4		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0058		0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.023		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	26		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.32		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.069		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.99		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	190	B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	3.7		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	46		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.94		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.40		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	650		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.012	^	0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.017		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3600		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.19		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	2.1		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.20		0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.0075	J ^	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.039		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.27		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	10		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.099		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.040		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0044	J ^	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	5.8	B	0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0044	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	43		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.023		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.14		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	690		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0070	J ^	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	4300		10	4.3	mg/L	10		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415 (Continued) — Lab Sample ID: 500-103546-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.058		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.024		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00029		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	620	B	40	8.6	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT-11(16-18)-110415 — Lab Sample ID: 500-103546-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	25		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	4.6		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5.3		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.7		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	26		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	56		0.50	0.18	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.7		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	21		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	65		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	180		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	4.9		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	270		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	8.0		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.015	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.068		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.2		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.00085	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.035		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	12		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.42		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.066		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.93		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	14	B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	2.1		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	31		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.088		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.28		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	870		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.014	^	0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.019		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3900		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.12		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	2.4		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.46		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.044		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.92		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0026		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	9.7		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.28		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.052		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.018		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	5.9	B	0.20	0.10	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415 (Continued) — Lab Sample ID: 500-103546-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.046		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	32		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.024		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.21		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	870		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0084	J ^	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	4500		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.087		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.060		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.0011		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	790	B	40	8.6	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-103546-7

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-103546-1	VAP-HPT-08(9-12)-110315	Water	11/03/15 15:10	11/04/15 15:40
500-103546-2	VAP-HPT-08(14-17)-110315	Water	11/03/15 15:40	11/04/15 15:40
500-103546-3	VAP-HPT-09(9-12)-110415	Water	11/04/15 08:45	11/04/15 15:40
500-103546-4	VAP-HPT-09(14-17)-110415	Water	11/04/15 11:00	11/04/15 15:40
500-103546-5	VAP-HPT-11(10-13)-110415	Water	11/04/15 12:05	11/04/15 15:40
500-103546-6	VAP-HPT-11(16-18)-110415	Water	11/04/15 13:00	11/04/15 15:40
500-103546-7	Trip Blank	Water	11/03/15 00:00	11/04/15 15:40

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315

Lab Sample ID: 500-103546-1

Date Collected: 11/03/15 15:10
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/16/15 22:40	1
Benzene	<0.50		0.50	0.15	ug/L			11/16/15 22:40	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/16/15 22:40	1
Bromoform	<1.0		1.0	0.48	ug/L			11/16/15 22:40	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/16/15 22:40	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/16/15 22:40	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/16/15 22:40	1
Chlorobenzene	**2.5**		1.0	0.39	ug/L			11/16/15 22:40	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/16/15 22:40	1
Chloroform	<1.0		1.0	0.37	ug/L			11/16/15 22:40	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/16/15 22:40	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/16/15 22:40	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/16/15 22:40	1
Cyclohexane	**1.2**		1.0	0.49	ug/L			11/16/15 22:40	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/16/15 22:40	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/16/15 22:40	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/16/15 22:40	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/16/15 22:40	1
1,4-Dichlorobenzene	**1.6**		1.0	0.36	ug/L			11/16/15 22:40	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/16/15 22:40	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/16/15 22:40	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/16/15 22:40	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/16/15 22:40	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/16/15 22:40	1
Isopropylbenzene	**45**		1.0	0.39	ug/L			11/16/15 22:40	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/16/15 22:40	1
Methylcyclohexane	**0.64**	**J**	1.0	0.32	ug/L			11/16/15 22:40	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/16/15 22:40	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/16/15 22:40	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/16/15 22:40	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
Styrene	<1.0		1.0	0.39	ug/L			11/16/15 22:40	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/16/15 22:40	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/16/15 22:40	1
Toluene	<0.50		0.50	0.15	ug/L			11/16/15 22:40	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/16/15 22:40	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/16/15 22:40	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/16/15 22:40	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/16/15 22:40	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/16/15 22:40	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/16/15 22:40	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/16/15 22:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/16/15 22:40	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/16/15 22:40	1
Xylenes, Total	**0.46**	**J**	1.0	0.22	ug/L			11/16/15 22:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315

Date Collected: 11/03/15 15:10
Date Received: 11/04/15 15:40

Lab Sample ID: 500-103546-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/16/15 22:40*	*1*
Dibromofluoromethane	*85*		*75 - 120*		*11/16/15 22:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 125*		*11/16/15 22:40*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*11/16/15 22:40*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**12**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:01	1
Antimony	**0.019**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 21:43	1
Arsenic	**0.036**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:01	1
Barium	**2.9**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:01	1
Beryllium	**0.0022**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:01	1
Cadmium	**0.012**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:01	1
Calcium	**81**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:01	1
Chromium	**0.21**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:01	1
Cobalt	**0.015**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:01	1
Copper	**0.62**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:43	1
Iron	**110**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:01	1
Lead	**1.8**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:01	1
Magnesium	**85**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:01	1
Manganese	**0.59**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:01	1
Nickel	**0.066**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:01	1
Potassium	**47**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:01	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:01	1
Silver	**0.0043**	**J**	0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:01	1
Sodium	**160**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:01	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:01	1
Vanadium	**0.018**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:01	1
Zinc	**3.5**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 02:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:06	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:06	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:06	1
Barium	**0.86**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:06	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:06	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:06	1
Calcium	**66**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:06	1
Chromium	**0.0027**	**J**	0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:06	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:06	1
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:47	1
Iron	**17**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:06	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:06	1
Magnesium	**85**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:06	1
Manganese	**0.049**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:06	1
Nickel	**0.0032**	**J**	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:06	1
Potassium	**47**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:06	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:06	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315

Lab Sample ID: 500-103546-1

Date Collected: 11/03/15 15:10

Matrix: Water

Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**170**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:06	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:06	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:06	1
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**55**	**B**	4.0	0.86	mg/L		11/13/15 23:00	11/15/15 17:35	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315

Lab Sample ID: 500-103546-2

Date Collected: 11/03/15 15:40

Matrix: Water

Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/16/15 23:07	1
Benzene	**8.5**		0.50	0.15	ug/L			11/16/15 23:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/16/15 23:07	1
Bromoform	<1.0		1.0	0.48	ug/L			11/16/15 23:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/16/15 23:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/16/15 23:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/16/15 23:07	1
Chlorobenzene	**42**		1.0	0.39	ug/L			11/16/15 23:07	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/16/15 23:07	1
Chloroform	<1.0		1.0	0.37	ug/L			11/16/15 23:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/16/15 23:07	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/16/15 23:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/16/15 23:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/16/15 23:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/16/15 23:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/16/15 23:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/16/15 23:07	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/16/15 23:07	1
1,4-Dichlorobenzene	**3.8**		1.0	0.36	ug/L			11/16/15 23:07	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/16/15 23:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/16/15 23:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/16/15 23:07	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/16/15 23:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/16/15 23:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/16/15 23:07	1
Methylcyclohexane	**0.65**	**J**	1.0	0.32	ug/L			11/16/15 23:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/16/15 23:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/16/15 23:07	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/16/15 23:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
Styrene	<1.0		1.0	0.39	ug/L			11/16/15 23:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/16/15 23:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/16/15 23:07	1
Toluene	<0.50		0.50	0.15	ug/L			11/16/15 23:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/16/15 23:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/16/15 23:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/16/15 23:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/16/15 23:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/16/15 23:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/16/15 23:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/16/15 23:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/16/15 23:07	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/16/15 23:07	1
Xylenes, Total	**0.35**	**J**	1.0	0.22	ug/L			11/16/15 23:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315

Lab Sample ID: 500-103546-2

Date Collected: 11/03/15 15:40
Matrix: Water
Date Received: 11/04/15 15:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/16/15 23:07*	*1*
Dibromofluoromethane	*85*		*75 - 120*		*11/16/15 23:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 125*		*11/16/15 23:07*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*11/16/15 23:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	**450**		10	3.9	ug/L			11/13/15 14:33	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*11/13/15 14:33*	*10*
Dibromofluoromethane	*108*		*75 - 120*		*11/13/15 14:33*	*10*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 125*		*11/13/15 14:33*	*10*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/13/15 14:33*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.0**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:10	1
Antimony	<0.020		0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 21:51	1
Arsenic	**0.0076**	**J**	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:10	1
Barium	**0.43**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:10	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:10	1
Cadmium	**0.0041**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:10	1
Calcium	**65**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:10	1
Chromium	**0.036**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:10	1
Cobalt	**0.0031**	**J**	0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:10	1
Copper	**0.051**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:51	1
Iron	**32**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:10	1
Lead	**0.29**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:10	1
Magnesium	**80**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:10	1
Manganese	**0.17**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:10	1
Nickel	**0.024**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:10	1
Potassium	**56**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:10	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:10	1
Silver	**0.0014**	**J**	0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:10	1
Sodium	**180**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:10	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:10	1
Vanadium	**0.0064**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:10	1
Zinc	**1.3**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 02:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:14	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:14	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:14	1
Barium	**0.45**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:14	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:14	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:14	1
Calcium	**80**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:14	1
Chromium	**0.0034**	**J**	0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:14	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315

Lab Sample ID: 500-103546-2
Date Collected: 11/03/15 15:40
Matrix: Water
Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 21:55	1
Iron	**19**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:14	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:14	1
Magnesium	**100**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:14	1
Manganese	**0.082**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:14	1
Nickel	**0.0080**	**J**	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:14	1
Potassium	**71**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:14	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:14	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:14	1
Sodium	**230**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:14	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:14	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:14	1
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:41	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**120**	**B**	8.0	1.7	mg/L		11/13/15 23:00	11/15/15 18:53	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(9-12)-110415

Lab Sample ID: 500-103546-3

Date Collected: 11/04/15 08:45
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/16/15 23:34	1
Benzene	<0.50		0.50	0.15	ug/L			11/16/15 23:34	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/16/15 23:34	1
Bromoform	<1.0		1.0	0.48	ug/L			11/16/15 23:34	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/16/15 23:34	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/16/15 23:34	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/16/15 23:34	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/16/15 23:34	1
Chloroform	<1.0		1.0	0.37	ug/L			11/16/15 23:34	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/16/15 23:34	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/16/15 23:34	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/16/15 23:34	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/16/15 23:34	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/16/15 23:34	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/16/15 23:34	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/16/15 23:34	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/16/15 23:34	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/16/15 23:34	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/16/15 23:34	1
1,1-Dichloroethane	**0.69**	**J**	1.0	0.41	ug/L			11/16/15 23:34	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/16/15 23:34	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/16/15 23:34	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/16/15 23:34	1
Isopropylbenzene	**1.3**		1.0	0.39	ug/L			11/16/15 23:34	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/16/15 23:34	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/16/15 23:34	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/16/15 23:34	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/16/15 23:34	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/16/15 23:34	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
Styrene	<1.0		1.0	0.39	ug/L			11/16/15 23:34	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/16/15 23:34	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/16/15 23:34	1
Toluene	<0.50		0.50	0.15	ug/L			11/16/15 23:34	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/16/15 23:34	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/16/15 23:34	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/16/15 23:34	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/16/15 23:34	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/16/15 23:34	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/16/15 23:34	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/16/15 23:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/16/15 23:34	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/16/15 23:34	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/16/15 23:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(9-12)-110415

Date Collected: 11/04/15 08:45
Date Received: 11/04/15 15:40

Lab Sample ID: 500-103546-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*75 - 120*		*11/16/15 23:34*	*1*
Dibromofluoromethane	*84*		*75 - 120*		*11/16/15 23:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/16/15 23:34*	*1*
Toluene-d8 (Surr)	*105*		*75 - 120*		*11/16/15 23:34*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.8**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:19	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:19	1
Arsenic	**0.0062**	**J**	0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:19	1
Barium	**0.35**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:19	1
Cadmium	**0.0035**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:19	1
Calcium	**120**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:19	1
Chromium	**0.035**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:19	1
Cobalt	**0.0079**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:19	1
Copper	**0.053**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:08	1
Iron	**43**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:19	1
Lead	**0.076**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:19	1
Magnesium	**45**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:19	1
Manganese	**0.81**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:19	1
Nickel	**0.034**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:19	1
Potassium	**18**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:19	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:19	1
Sodium	**92**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:19	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:19	1
Vanadium	**0.024**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:19	1
Zinc	**0.70**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:00	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:23	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:23	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:23	1
Barium	**0.23**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:23	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:23	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:23	1
Calcium	**94**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:23	1
Chromium	<0.010		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:23	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:23	1
Copper	<0.010	^	0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:23	1
Iron	**15**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:23	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:23	1
Magnesium	**35**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:23	1
Manganese	**0.45**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:23	1
Nickel	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:23	1
Potassium	**14**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:23	1
Selenium	**0.0060**	**J ^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:23	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(9-12)-110415

Lab Sample ID: 500-103546-3

Date Collected: 11/04/15 08:45

Matrix: Water

Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**76**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:23	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:23	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:23	1
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**16**	**B**	0.80	0.17	mg/L		11/13/15 23:00	11/15/15 17:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(14-17)-110415

Lab Sample ID: 500-103546-4

Date Collected: 11/04/15 11:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/17/15 00:01	1
Benzene	**1.5**		0.50	0.15	ug/L			11/17/15 00:01	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 00:01	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 00:01	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 00:01	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 00:01	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 00:01	1
Chlorobenzene	**11**		1.0	0.39	ug/L			11/17/15 00:01	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 00:01	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 00:01	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 00:01	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/17/15 00:01	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 00:01	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 00:01	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 00:01	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 00:01	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 00:01	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 00:01	1
1,4-Dichlorobenzene	**1.6**		1.0	0.36	ug/L			11/17/15 00:01	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 00:01	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 00:01	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 00:01	1
Ethylbenzene	**0.55**		0.50	0.18	ug/L			11/17/15 00:01	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 00:01	1
Isopropylbenzene	**7.6**		1.0	0.39	ug/L			11/17/15 00:01	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 00:01	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/17/15 00:01	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 00:01	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 00:01	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/17/15 00:01	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 00:01	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 00:01	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 00:01	1
Toluene	**0.57**		0.50	0.15	ug/L			11/17/15 00:01	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 00:01	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 00:01	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 00:01	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 00:01	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 00:01	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 00:01	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 00:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 00:01	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/17/15 00:01	1
Xylenes, Total	**5.8**		1.0	0.22	ug/L			11/17/15 00:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(14-17)-110415

Lab Sample ID: 500-103546-4

Date Collected: 11/04/15 11:00
Matrix: Water
Date Received: 11/04/15 15:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/17/15 00:01*	*1*
Dibromofluoromethane	*84*		*75 - 120*		*11/17/15 00:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 125*		*11/17/15 00:01*	*1*
Toluene-d8 (Surr)	*110*		*75 - 120*		*11/17/15 00:01*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8.1**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:27	1
Antimony	<0.020		0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 22:13	1
Arsenic	**0.031**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:27	1
Barium	**0.56**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:27	1
Beryllium	**0.0015**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:27	1
Cadmium	**0.0087**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:27	1
Calcium	**110**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:27	1
Chromium	**0.097**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:27	1
Cobalt	**0.0094**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:27	1
Copper	**0.21**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:13	1
Iron	**64**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:27	1
Lead	**0.31**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:27	1
Magnesium	**43**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:27	1
Manganese	**0.77**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:27	1
Nickel	**0.042**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:27	1
Potassium	**17**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:27	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:27	1
Silver	**0.076**		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:27	1
Sodium	**91**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:27	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:27	1
Vanadium	**0.019**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:27	1
Zinc	**2.8**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:31	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:31	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:31	1
Barium	**0.28**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:31	1
Calcium	**95**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:31	1
Chromium	<0.010		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:31	1
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:17	1
Iron	**18**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:31	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:31	1
Magnesium	**38**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:31	1
Manganese	**0.36**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:31	1
Nickel	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:31	1
Potassium	**16**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:31	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(14-17)-110415

Lab Sample ID: 500-103546-4

Date Collected: 11/04/15 11:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**85**		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 12:31	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:31	1
Zinc	**0.034**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000088**	**J**	0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**22**	**B**	1.6	0.34	mg/L		11/13/15 23:00	11/15/15 17:49	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415

Lab Sample ID: 500-103546-5

Date Collected: 11/04/15 12:05
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**13**		5.0	1.7	ug/L			11/17/15 00:55	1
Benzene	**5.0**		0.50	0.15	ug/L			11/17/15 00:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 00:55	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 00:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 00:55	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 00:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 00:55	1
Chlorobenzene	**1.2**		1.0	0.39	ug/L			11/17/15 00:55	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 00:55	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 00:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 00:55	1
cis-1,2-Dichloroethene	**1.7**		1.0	0.41	ug/L			11/17/15 00:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 00:55	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 00:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 00:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 00:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 00:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 00:55	1
1,4-Dichlorobenzene	**30**		1.0	0.36	ug/L			11/17/15 00:55	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 00:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 00:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 00:55	1
Ethylbenzene	**97**		0.50	0.18	ug/L			11/17/15 00:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 00:55	1
Isopropylbenzene	**9.8**		1.0	0.39	ug/L			11/17/15 00:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 00:55	1
Methylcyclohexane	**1.6**		1.0	0.32	ug/L			11/17/15 00:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 00:55	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 00:55	1
methyl isobutyl ketone	**12**		5.0	2.2	ug/L			11/17/15 00:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 00:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 00:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 00:55	1
Toluene	**80**		0.50	0.15	ug/L			11/17/15 00:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 00:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 00:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 00:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 00:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 00:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 00:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 00:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 00:55	1
Vinyl chloride	**1.6**		0.50	0.20	ug/L			11/17/15 00:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415

Lab Sample ID: 500-103546-5

Date Collected: 11/04/15 12:05
Matrix: Water
Date Received: 11/04/15 15:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*75 - 120*		*11/17/15 00:55*	*1*
Dibromofluoromethane	*81*		*75 - 120*		*11/17/15 00:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 125*		*11/17/15 00:55*	*1*
Toluene-d8 (Surr)	*108*		*75 - 120*		*11/17/15 00:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**400**		10	2.2	ug/L			11/13/15 16:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/13/15 16:14*	*10*
Dibromofluoromethane	*108*		*75 - 120*		*11/13/15 16:14*	*10*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 125*		*11/13/15 16:14*	*10*
Toluene-d8 (Surr)	*94*		*75 - 120*		*11/13/15 16:14*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**32**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:35	1
Antimony	**0.017**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 22:21	1
Arsenic	**0.15**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:35	1
Barium	**1.4**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:35	1
Beryllium	**0.0058**		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:35	1
Cadmium	**0.023**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:35	1
Calcium	**26**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:35	1
Chromium	**0.32**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:35	1
Cobalt	**0.069**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:35	1
Copper	**0.99**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:21	1
Iron	**190**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:35	1
Lead	**3.7**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:35	1
Magnesium	**46**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:35	1
Manganese	**0.94**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:35	1
Nickel	**0.40**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:35	1
Potassium	**650**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:35	1
Selenium	**0.012**	**^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:35	1
Silver	**0.017**		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:35	1
Sodium	**3600**		10	4.3	mg/L		11/09/15 12:15	11/10/15 13:40	10
Thallium	<0.010	L	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:35	1
Vanadium	**0.19**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:35	1
Zinc	**2.1**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:09	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.20**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 12:41	1
Antimony	**0.0075**	**J ^**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 12:41	1
Arsenic	**0.039**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:41	1
Barium	**0.27**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:41	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 12:41	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 12:41	1
Calcium	**10**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 12:41	1
Chromium	**0.099**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 12:41	1
Cobalt	**0.040**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 12:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(10-13)-110415

Lab Sample ID: 500-103546-5

Date Collected: 11/04/15 12:05
Date Received: 11/04/15 15:40

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0044	J ^	0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 12:41	1
Iron	5.8	B	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 12:41	1
Lead	0.0044	J	0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 12:41	1
Magnesium	43		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 12:41	1
Manganese	0.023		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 12:41	1
Nickel	0.14		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 12:41	1
Potassium	690		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 12:41	1
Selenium	0.0070	J ^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 12:41	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 12:41	1
Sodium	4300		10	4.3	mg/L		11/09/15 12:15	11/10/15 13:56	10
Thallium	<0.010	L	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 12:41	1
Vanadium	0.058		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 12:41	1
Zinc	0.024		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00029		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	620	B	40	8.6	mg/L		11/13/15 23:00	11/15/15 18:56	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415

Lab Sample ID: 500-103546-6

Date Collected: 11/04/15 13:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**25**		5.0	1.7	ug/L			11/17/15 00:28	1
Benzene	**4.6**		0.50	0.15	ug/L			11/17/15 00:28	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 00:28	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 00:28	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 00:28	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 00:28	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 00:28	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 00:28	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 00:28	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 00:28	1
cis-1,2-Dichloroethene	**5.3**		1.0	0.41	ug/L			11/17/15 00:28	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 00:28	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			11/17/15 00:28	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 00:28	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 00:28	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 00:28	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 00:28	1
1,4-Dichlorobenzene	**26**		1.0	0.36	ug/L			11/17/15 00:28	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 00:28	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 00:28	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 00:28	1
Ethylbenzene	**56**		0.50	0.18	ug/L			11/17/15 00:28	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 00:28	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 00:28	1
Methylcyclohexane	**1.7**		1.0	0.32	ug/L			11/17/15 00:28	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 00:28	1
Methyl Ethyl Ketone	**21**		5.0	2.1	ug/L			11/17/15 00:28	1
methyl isobutyl ketone	**65**		5.0	2.2	ug/L			11/17/15 00:28	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 00:28	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 00:28	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 00:28	1
Toluene	**180**		0.50	0.15	ug/L			11/17/15 00:28	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 00:28	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 00:28	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 00:28	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 00:28	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 00:28	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 00:28	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 00:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 00:28	1
Vinyl chloride	**4.9**		0.50	0.20	ug/L			11/17/15 00:28	1
Xylenes, Total	**270**		1.0	0.22	ug/L			11/17/15 00:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415

Lab Sample ID: 500-103546-6

Date Collected: 11/04/15 13:00
Matrix: Water
Date Received: 11/04/15 15:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*75 - 120*		*11/17/15 00:28*	*1*
Dibromofluoromethane	*85*		*75 - 120*		*11/17/15 00:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/17/15 00:28*	*1*
Toluene-d8 (Surr)	*109*		*75 - 120*		*11/17/15 00:28*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8.0**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 13:00	1
Antimony	**0.015**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 22:26	1
Arsenic	**0.068**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:00	1
Barium	**1.2**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 13:00	1
Beryllium	**0.00085**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 13:00	1
Cadmium	**0.035**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 13:00	1
Calcium	**12**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 13:00	1
Chromium	**0.42**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 13:00	1
Cobalt	**0.066**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 13:00	1
Copper	**0.93**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:26	1
Iron	**14**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 13:00	1
Lead	**2.1**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 13:00	1
Magnesium	**31**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 13:00	1
Manganese	**0.088**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 13:00	1
Nickel	**0.28**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:00	1
Potassium	**870**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 13:00	1
Selenium	**0.014**	**^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 13:00	1
Silver	**0.019**		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 13:00	1
Sodium	**3900**		10	4.3	mg/L		11/09/15 12:15	11/10/15 14:02	10
Thallium	<0.010	L	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 13:00	1
Vanadium	**0.12**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 13:00	1
Zinc	**2.4**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:14	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.46**		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 13:05	1
Antimony	<0.020	^	0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 13:05	1
Arsenic	**0.044**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:05	1
Barium	**0.92**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 13:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 13:05	1
Cadmium	**0.0026**		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 13:05	1
Calcium	**9.7**		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 13:05	1
Chromium	**0.28**		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 13:05	1
Cobalt	**0.052**		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 13:05	1
Copper	**0.018**		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 22:31	1
Iron	**5.9**	**B**	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 13:05	1
Lead	**0.046**		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 13:05	1
Magnesium	**32**		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 13:05	1
Manganese	**0.024**		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 13:05	1
Nickel	**0.21**		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 13:05	1
Potassium	**870**		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 13:05	1
Selenium	**0.0084**	**J ^**	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 13:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 13:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415

Lab Sample ID: 500-103546-6

Date Collected: 11/04/15 13:00
Matrix: Water
Date Received: 11/04/15 15:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**4500**		10	4.3	mg/L		11/09/15 12:15	11/10/15 14:07	10
Thallium	<0.010	L	0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 13:05	1
Vanadium	**0.087**		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 13:05	1
Zinc	**0.060**		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 03:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.0011**		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:57	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 13:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**790**	**B**	40	8.6	mg/L		11/13/15 23:00	11/15/15 18:59	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103546-7

Date Collected: 11/03/15 00:00
Date Received: 11/04/15 15:40

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 17:29	1
Benzene	<0.50		0.50	0.15	ug/L			11/13/15 17:29	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 17:29	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 17:29	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 17:29	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 17:29	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 17:29	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 17:29	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 17:29	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 17:29	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 17:29	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 17:29	1
Cyclohexane	<1.0	*	1.0	0.49	ug/L			11/13/15 17:29	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 17:29	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 17:29	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 17:29	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 17:29	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 17:29	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 17:29	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 17:29	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 17:29	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 17:29	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 17:29	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 17:29	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 17:29	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 17:29	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 17:29	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 17:29	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 17:29	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 17:29	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 17:29	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 17:29	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 17:29	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 17:29	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 17:29	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 17:29	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 17:29	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 17:29	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 17:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	*	1.0	0.46	ug/L			11/13/15 17:29	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 17:29	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 17:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103546-7

Date Collected: 11/03/15 00:00

Matrix: Water

Date Received: 11/04/15 15:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		75 - 120		11/13/15 17:29	1
Dibromofluoromethane	105		75 - 120		11/13/15 17:29	1
1,2-Dichloroethane-d4 (Surr)	103		75 - 125		11/13/15 17:29	1
Toluene-d8 (Surr)	93		75 - 120		11/13/15 17:29	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
L	A negative instrument reading had an absolute value greater than the reporting limit

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

GC/MS VOA

Analysis Batch: 312503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-2 - DL	VAP-HPT-08(14-17)-110315	Total/NA	Water	8260B	
500-103546-5 - DL	VAP-HPT-11(10-13)-110415	Total/NA	Water	8260B	
500-103546-7	Trip Blank	Total/NA	Water	8260B	
LCS 500-312503/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-312503/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 312854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	8260B	
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	8260B	
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	8260B	
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	8260B	
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	8260B	
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	8260B	
LCS 500-312854/5	Lab Control Sample	Total/NA	Water	8260B	
MB 500-312854/7	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 311710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Dissolved	Water	3010A	
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	3010A	
500-103546-2	VAP-HPT-08(14-17)-110315	Dissolved	Water	3010A	
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	3010A	
500-103546-3	VAP-HPT-09(9-12)-110415	Dissolved	Water	3010A	
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	3010A	
500-103546-4	VAP-HPT-09(14-17)-110415	Dissolved	Water	3010A	
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	3010A	
500-103546-5	VAP-HPT-11(10-13)-110415	Dissolved	Water	3010A	
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	3010A	
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	3010A	
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	3010A	
LCS 500-311710/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-311710/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 311844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	7470A	
500-103546-1 DU	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	
500-103546-1 MS	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	
500-103546-1 MSD	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	
500-103546-2	VAP-HPT-08(14-17)-110315	Dissolved	Water	7470A	
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	7470A	
500-103546-3	VAP-HPT-09(9-12)-110415	Dissolved	Water	7470A	
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	7470A	
500-103546-4	VAP-HPT-09(14-17)-110415	Dissolved	Water	7470A	
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	7470A	
500-103546-5	VAP-HPT-11(10-13)-110415	Dissolved	Water	7470A	

Metals (Continued)

Prep Batch: 311844 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	7470A	
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	7470A	
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	7470A	
LCS 500-311844/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-311844/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 312005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Dissolved	Water	6010C	311710
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	6010C	311710
500-103546-2	VAP-HPT-08(14-17)-110315	Dissolved	Water	6010C	311710
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	6010C	311710
500-103546-3	VAP-HPT-09(9-12)-110415	Dissolved	Water	6010C	311710
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	6010C	311710
500-103546-4	VAP-HPT-09(14-17)-110415	Dissolved	Water	6010C	311710
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	6010C	311710
500-103546-5	VAP-HPT-11(10-13)-110415	Dissolved	Water	6010C	311710
500-103546-5	VAP-HPT-11(10-13)-110415	Dissolved	Water	6010C	311710
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	6010C	311710
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	6010C	311710
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	6010C	311710
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	6010C	311710
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	6010C	311710
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	6010C	311710
LCS 500-311710/2-A	Lab Control Sample	Total/NA	Water	6010C	311710
MB 500-311710/1-A	Method Blank	Total/NA	Water	6010C	311710

Analysis Batch: 312021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	311844
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	7470A	311844
500-103546-1 DU	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	311844
500-103546-1 MS	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	311844
500-103546-1 MSD	VAP-HPT-08(9-12)-110315	Dissolved	Water	7470A	311844
500-103546-2	VAP-HPT-08(14-17)-110315	Dissolved	Water	7470A	311844
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	7470A	311844
500-103546-3	VAP-HPT-09(9-12)-110415	Dissolved	Water	7470A	311844
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	7470A	311844
500-103546-4	VAP-HPT-09(14-17)-110415	Dissolved	Water	7470A	311844
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	7470A	311844
500-103546-5	VAP-HPT-11(10-13)-110415	Dissolved	Water	7470A	311844
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	7470A	311844
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	7470A	311844
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	7470A	311844
LCS 500-311844/13-A	Lab Control Sample	Total/NA	Water	7470A	311844
MB 500-311844/12-A	Method Blank	Total/NA	Water	7470A	311844

Prep Batch: 312029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Dissolved	Water	3010A	
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 312029 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-2	VAP-HPT-08(14-17)-110315	Dissolved	Water	3010A	
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	3010A	
500-103546-3	VAP-HPT-09(9-12)-110415	Dissolved	Water	3010A	
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	3010A	
500-103546-4	VAP-HPT-09(14-17)-110415	Dissolved	Water	3010A	
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	3010A	
500-103546-5	VAP-HPT-11(10-13)-110415	Dissolved	Water	3010A	
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	3010A	
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	3010A	
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	3010A	
LCS 500-312029/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-312029/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 312130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Dissolved	Water	6010C	311710
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	6010C	311710
500-103546-2	VAP-HPT-08(14-17)-110315	Dissolved	Water	6010C	311710
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	6010C	311710
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	6010C	311710
500-103546-4	VAP-HPT-09(14-17)-110415	Dissolved	Water	6010C	311710
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	6010C	311710
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	6010C	311710
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	6010C	311710
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	6010C	311710

Analysis Batch: 312531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Dissolved	Water	6010C	312029
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	6010C	312029
500-103546-2	VAP-HPT-08(14-17)-110315	Dissolved	Water	6010C	312029
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	6010C	312029
500-103546-3	VAP-HPT-09(9-12)-110415	Dissolved	Water	6010C	312029
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	6010C	312029
500-103546-4	VAP-HPT-09(14-17)-110415	Dissolved	Water	6010C	312029
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	6010C	312029
500-103546-5	VAP-HPT-11(10-13)-110415	Dissolved	Water	6010C	312029
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	6010C	312029
500-103546-6	VAP-HPT-11(16-18)-110415	Dissolved	Water	6010C	312029
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	6010C	312029
LCS 500-312029/2-A	Lab Control Sample	Total/NA	Water	6010C	312029
MB 500-312029/1-A	Method Blank	Total/NA	Water	6010C	312029

General Chemistry

Prep Batch: 312639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	SM 4500 NH3 B	
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	SM 4500 NH3 B	
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	SM 4500 NH3 B	

General Chemistry (Continued)

Prep Batch: 312639 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	SM 4500 NH3 B	
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	SM 4500 NH3 B	
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	SM 4500 NH3 B	
LCS 500-312639/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-312639/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 312729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103546-1	VAP-HPT-08(9-12)-110315	Total/NA	Water	SM 4500 NH3 G	312639
500-103546-2	VAP-HPT-08(14-17)-110315	Total/NA	Water	SM 4500 NH3 G	312639
500-103546-3	VAP-HPT-09(9-12)-110415	Total/NA	Water	SM 4500 NH3 G	312639
500-103546-4	VAP-HPT-09(14-17)-110415	Total/NA	Water	SM 4500 NH3 G	312639
500-103546-5	VAP-HPT-11(10-13)-110415	Total/NA	Water	SM 4500 NH3 G	312639
500-103546-6	VAP-HPT-11(16-18)-110415	Total/NA	Water	SM 4500 NH3 G	312639
LCS 500-312639/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	312639
MB 500-312639/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	312639

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(75-120)	(75-120)	(75-125)	(75-120)
500-103546-1	VAP-HPT-08(9-12)-110315	95	85	96	106
500-103546-2 - DL	VAP-HPT-08(14-17)-110315	94	108	107	91
500-103546-2	VAP-HPT-08(14-17)-110315	95	85	96	106
500-103546-3	VAP-HPT-09(9-12)-110415	97	84	91	105
500-103546-4	VAP-HPT-09(14-17)-110415	96	84	86	110
500-103546-5 - DL	VAP-HPT-11(10-13)-110415	92	108	106	94
500-103546-5	VAP-HPT-11(10-13)-110415	102	81	96	108
500-103546-6	VAP-HPT-11(16-18)-110415	103	85	101	109
500-103546-7	Trip Blank	95	105	103	93
LCS 500-312503/4	Lab Control Sample	93	103	102	96
LCS 500-312854/5	Lab Control Sample	100	85	101	107
MB 500-312503/6	Method Blank	93	110	107	91
MB 500-312854/7	Method Blank	99	86	99	107

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-312503/6
Matrix: Water
Analysis Batch: 312503

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/13/15 12:28	1
Benzene	<0.50		0.50	0.15	ug/L			11/13/15 12:28	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/13/15 12:28	1
Bromoform	<1.0		1.0	0.48	ug/L			11/13/15 12:28	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/13/15 12:28	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/13/15 12:28	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/13/15 12:28	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/13/15 12:28	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/13/15 12:28	1
Chloroform	<1.0		1.0	0.37	ug/L			11/13/15 12:28	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/13/15 12:28	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/13/15 12:28	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/13/15 12:28	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/13/15 12:28	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/13/15 12:28	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/13/15 12:28	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/13/15 12:28	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/13/15 12:28	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/13/15 12:28	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/13/15 12:28	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/13/15 12:28	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/13/15 12:28	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/13/15 12:28	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/13/15 12:28	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/13/15 12:28	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/13/15 12:28	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/13/15 12:28	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/13/15 12:28	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/13/15 12:28	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/13/15 12:28	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/13/15 12:28	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/13/15 12:28	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/13/15 12:28	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/13/15 12:28	1
Styrene	<1.0		1.0	0.39	ug/L			11/13/15 12:28	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/13/15 12:28	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/13/15 12:28	1
Toluene	<0.50		0.50	0.15	ug/L			11/13/15 12:28	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/13/15 12:28	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/13/15 12:28	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/13/15 12:28	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/13/15 12:28	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/13/15 12:28	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/13/15 12:28	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/13/15 12:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/13/15 12:28	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/13/15 12:28	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/13/15 12:28	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		75 - 120		11/13/15 12:28	1
Dibromofluoromethane	110		75 - 120		11/13/15 12:28	1
1,2-Dichloroethane-d4 (Surr)	107		75 - 125		11/13/15 12:28	1
Toluene-d8 (Surr)	91		75 - 120		11/13/15 12:28	1

Lab Sample ID: LCS 500-312503/4
Matrix: Water
Analysis Batch: 312503

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	53.9		ug/L		108	47 - 131
Benzene	50.0	48.2		ug/L		96	70 - 120
Bromodichloromethane	50.0	46.8		ug/L		94	70 - 127
Bromoform	50.0	53.5		ug/L		107	70 - 135
Bromomethane	50.0	26.8		ug/L		54	30 - 170
Carbon disulfide	50.0	50.6		ug/L		101	61 - 120
Carbon tetrachloride	50.0	48.8		ug/L		98	70 - 136
Chlorobenzene	50.0	47.5		ug/L		95	70 - 120
Chloroethane	50.0	29.1		ug/L		58	40 - 150
Chloroform	50.0	48.8		ug/L		98	70 - 120
Chloromethane	50.0	53.1		ug/L		106	45 - 140
cis-1,2-Dichloroethene	50.0	50.2		ug/L		100	70 - 120
cis-1,3-Dichloropropene	50.0	46.4		ug/L		93	70 - 122
Cyclohexane	50.0	68.4	*	ug/L		137	60 - 133
Dibromochloromethane	50.0	50.1		ug/L		100	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	47.1		ug/L		94	59 - 139
1,2-Dibromoethane	50.0	49.4		ug/L		99	70 - 124
1,2-Dichlorobenzene	50.0	48.7		ug/L		97	70 - 123
1,3-Dichlorobenzene	50.0	47.3		ug/L		95	70 - 122
1,4-Dichlorobenzene	50.0	46.3		ug/L		93	70 - 120
Dichlorodifluoromethane	50.0	41.8		ug/L		84	30 - 150
1,1-Dichloroethane	50.0	53.5		ug/L		107	70 - 127
1,2-Dichloroethane	50.0	48.6		ug/L		97	66 - 132
1,1-Dichloroethene	50.0	50.6		ug/L		101	68 - 121
1,2-Dichloropropane	50.0	53.8		ug/L		108	70 - 127
Ethylbenzene	50.0	47.1		ug/L		94	70 - 125
2-Hexanone	50.0	52.9		ug/L		106	53 - 140
Isopropylbenzene	50.0	43.1		ug/L		86	70 - 132
Methyl acetate	250	319		ug/L		128	56 - 131
Methylcyclohexane	50.0	53.3		ug/L		107	60 - 140
Methylene Chloride	50.0	53.3		ug/L		107	70 - 120
Methyl Ethyl Ketone	50.0	54.3		ug/L		109	51 - 134
methyl isobutyl ketone	50.0	53.9		ug/L		108	53 - 135
Methyl tert-butyl ether	50.0	57.2		ug/L		114	65 - 120
Styrene	50.0	51.3		ug/L		103	70 - 120
1,1,2,2-Tetrachloroethane	50.0	48.3		ug/L		97	68 - 133
Tetrachloroethene	50.0	44.5		ug/L		89	70 - 129
Toluene	50.0	45.6		ug/L		91	70 - 120
trans-1,2-Dichloroethene	50.0	49.5		ug/L		99	70 - 120
trans-1,3-Dichloropropene	50.0	45.7		ug/L		91	70 - 123
1,2,4-Trichlorobenzene	50.0	52.3		ug/L		105	70 - 125
1,1,1-Trichloroethane	50.0	48.1		ug/L		96	70 - 125
1,1,2-Trichloroethane	50.0	47.4		ug/L		95	70 - 125
Trichloroethene	50.0	48.7		ug/L		97	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-312503/4
Matrix: Water
Analysis Batch: 312503

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	33.0		ug/L		66	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	62.2	*	ug/L		124	64 - 120
Vinyl chloride	50.0	46.4		ug/L		93	63 - 127
Xylenes, Total	100	97.0		ug/L		97	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*
Dibromofluoromethane	*103*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*
Toluene-d8 (Surr)	*96*		*75 - 120*

Lab Sample ID: MB 500-312854/7
Matrix: Water
Analysis Batch: 312854

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<100		100	35	ug/L			11/16/15 22:13	20
Benzene	<10		10	2.9	ug/L			11/16/15 22:13	20
Bromodichloromethane	<20		20	7.4	ug/L			11/16/15 22:13	20
Bromoform	<20		20	9.7	ug/L			11/16/15 22:13	20
Bromomethane	<40		40	16	ug/L			11/16/15 22:13	20
Carbon disulfide	<40		40	9.0	ug/L			11/16/15 22:13	20
Carbon tetrachloride	<20		20	7.7	ug/L			11/16/15 22:13	20
Chlorobenzene	<20		20	7.7	ug/L			11/16/15 22:13	20
Chloroethane	<20		20	9.4	ug/L			11/16/15 22:13	20
Chloroform	<20		20	7.4	ug/L			11/16/15 22:13	20
Chloromethane	<20		20	6.4	ug/L			11/16/15 22:13	20
cis-1,2-Dichloroethene	<20		20	8.2	ug/L			11/16/15 22:13	20
cis-1,3-Dichloropropene	<20		20	8.3	ug/L			11/16/15 22:13	20
Cyclohexane	<20		20	9.7	ug/L			11/16/15 22:13	20
Dibromochloromethane	<20		20	9.8	ug/L			11/16/15 22:13	20
1,2-Dibromo-3-Chloropropane	<100		100	40	ug/L			11/16/15 22:13	20
1,2-Dibromoethane	<20		20	7.7	ug/L			11/16/15 22:13	20
1,2-Dichlorobenzene	<20		20	6.7	ug/L			11/16/15 22:13	20
1,3-Dichlorobenzene	<20		20	8.0	ug/L			11/16/15 22:13	20
1,4-Dichlorobenzene	<20		20	7.3	ug/L			11/16/15 22:13	20
Dichlorodifluoromethane	<40		40	11	ug/L			11/16/15 22:13	20
1,1-Dichloroethane	<20		20	8.2	ug/L			11/16/15 22:13	20
1,2-Dichloroethane	<20		20	7.8	ug/L			11/16/15 22:13	20
1,1-Dichloroethene	<20		20	7.8	ug/L			11/16/15 22:13	20
1,2-Dichloropropane	<20		20	8.6	ug/L			11/16/15 22:13	20
Ethylbenzene	<10		10	3.7	ug/L			11/16/15 22:13	20
2-Hexanone	<100		100	31	ug/L			11/16/15 22:13	20
Isopropylbenzene	<20		20	7.7	ug/L			11/16/15 22:13	20
Methyl acetate	<100		100	40	ug/L			11/16/15 22:13	20
Methylcyclohexane	<20		20	6.3	ug/L			11/16/15 22:13	20
Methylene Chloride	<100		100	33	ug/L			11/16/15 22:13	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-312854/7
Matrix: Water
Analysis Batch: 312854

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<100		100	42	ug/L			11/16/15 22:13	20
methyl isobutyl ketone	<100		100	43	ug/L			11/16/15 22:13	20
Methyl tert-butyl ether	<20		20	7.9	ug/L			11/16/15 22:13	20
Styrene	<20		20	7.7	ug/L			11/16/15 22:13	20
1,1,2,2-Tetrachloroethane	<20		20	8.0	ug/L			11/16/15 22:13	20
Tetrachloroethene	<20		20	7.4	ug/L			11/16/15 22:13	20
Toluene	<10		10	3.0	ug/L			11/16/15 22:13	20
trans-1,2-Dichloroethene	<20		20	7.0	ug/L			11/16/15 22:13	20
trans-1,3-Dichloropropene	<20		20	7.2	ug/L			11/16/15 22:13	20
1,2,4-Trichlorobenzene	<20		20	6.8	ug/L			11/16/15 22:13	20
1,1,1-Trichloroethane	<20		20	7.6	ug/L			11/16/15 22:13	20
1,1,2-Trichloroethane	<20		20	7.0	ug/L			11/16/15 22:13	20
Trichloroethene	<10		10	3.3	ug/L			11/16/15 22:13	20
Trichlorofluoromethane	<20		20	8.5	ug/L			11/16/15 22:13	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<20		20	9.2	ug/L			11/16/15 22:13	20
Vinyl chloride	<10		10	4.1	ug/L			11/16/15 22:13	20
Xylenes, Total	<20		20	4.4	ug/L			11/16/15 22:13	20

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*75 - 120*		*11/16/15 22:13*	*20*
Dibromofluoromethane	*86*		*75 - 120*		*11/16/15 22:13*	*20*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 125*		*11/16/15 22:13*	*20*
Toluene-d8 (Surr)	*107*		*75 - 120*		*11/16/15 22:13*	*20*

Lab Sample ID: LCS 500-312854/5
Matrix: Water
Analysis Batch: 312854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	35.6		ug/L		71	47 - 131
Benzene	50.0	47.2		ug/L		94	70 - 120
Bromodichloromethane	50.0	44.8		ug/L		90	70 - 127
Bromoform	50.0	44.8		ug/L		90	70 - 135
Bromomethane	50.0	53.0		ug/L		106	30 - 170
Carbon disulfide	50.0	42.4		ug/L		85	61 - 120
Carbon tetrachloride	50.0	41.4		ug/L		83	70 - 136
Chlorobenzene	50.0	45.4		ug/L		91	70 - 120
Chloroethane	50.0	47.2		ug/L		94	40 - 150
Chloroform	50.0	45.3		ug/L		91	70 - 120
Chloromethane	50.0	42.5		ug/L		85	45 - 140
cis-1,2-Dichloroethene	50.0	44.7		ug/L		89	70 - 120
cis-1,3-Dichloropropene	50.0	49.0		ug/L		98	70 - 122
Cyclohexane	50.0	43.6		ug/L		87	60 - 133
Dibromochloromethane	50.0	49.1		ug/L		98	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	44.7		ug/L		89	59 - 139
1,2-Dibromoethane	50.0	49.6		ug/L		99	70 - 124
1,2-Dichlorobenzene	50.0	47.5		ug/L		95	70 - 123
1,3-Dichlorobenzene	50.0	44.0		ug/L		88	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-312854/5
Matrix: Water
Analysis Batch: 312854

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	44.1		ug/L		88	70 - 120
Dichlorodifluoromethane	50.0	48.7		ug/L		97	30 - 150
1,1-Dichloroethane	50.0	45.0		ug/L		90	70 - 127
1,2-Dichloroethane	50.0	47.1		ug/L		94	66 - 132
1,1-Dichloroethene	50.0	42.1		ug/L		84	68 - 121
1,2-Dichloropropane	50.0	46.6		ug/L		93	70 - 127
Ethylbenzene	50.0	45.5		ug/L		91	70 - 125
2-Hexanone	50.0	37.0		ug/L		74	53 - 140
Isopropylbenzene	50.0	47.5		ug/L		95	70 - 132
Methyl acetate	250	201		ug/L		81	56 - 131
Methylcyclohexane	50.0	45.9		ug/L		92	60 - 140
Methylene Chloride	50.0	44.3		ug/L		89	70 - 120
Methyl Ethyl Ketone	50.0	37.6		ug/L		75	51 - 134
methyl isobutyl ketone	50.0	38.7		ug/L		77	53 - 135
Methyl tert-butyl ether	50.0	48.8		ug/L		98	65 - 120
Styrene	50.0	48.3		ug/L		97	70 - 120
1,1,2,2-Tetrachloroethane	50.0	50.0		ug/L		100	68 - 133
Tetrachloroethene	50.0	45.8		ug/L		92	70 - 129
Toluene	50.0	49.9		ug/L		100	70 - 120
trans-1,2-Dichloroethene	50.0	41.8		ug/L		84	70 - 120
trans-1,3-Dichloropropene	50.0	49.7		ug/L		99	70 - 123
1,2,4-Trichlorobenzene	50.0	49.9		ug/L		100	70 - 125
1,1,1-Trichloroethane	50.0	39.6		ug/L		79	70 - 125
1,1,2-Trichloroethane	50.0	50.4		ug/L		101	70 - 125
Trichloroethene	50.0	43.3		ug/L		87	70 - 122
Trichlorofluoromethane	50.0	41.2		ug/L		82	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	40.9		ug/L		82	64 - 120
Vinyl chloride	50.0	48.3		ug/L		97	63 - 127
Xylenes, Total	100	92.7		ug/L		93	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*75 - 120*
Dibromofluoromethane	*85*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*
Toluene-d8 (Surr)	*107*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-311710/1-A
Matrix: Water
Analysis Batch: 312005

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311710

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/10/15 11:13	1
Antimony	<0.020		0.020	0.0064	mg/L		11/09/15 12:15	11/10/15 11:13	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 11:13	1
Barium	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 11:13	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-311710/1-A
Matrix: Water
Analysis Batch: 312005

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311710

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/10/15 11:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/09/15 12:15	11/10/15 11:13	1
Calcium	<0.20		0.20	0.059	mg/L		11/09/15 12:15	11/10/15 11:13	1
Chromium	<0.010		0.010	0.0024	mg/L		11/09/15 12:15	11/10/15 11:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/10/15 11:13	1
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/10/15 11:13	1
Iron	0.163	J	0.20	0.10	mg/L		11/09/15 12:15	11/10/15 11:13	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/10/15 11:13	1
Magnesium	<0.10		0.10	0.034	mg/L		11/09/15 12:15	11/10/15 11:13	1
Manganese	<0.010		0.010	0.0034	mg/L		11/09/15 12:15	11/10/15 11:13	1
Nickel	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/10/15 11:13	1
Potassium	<0.50		0.50	0.16	mg/L		11/09/15 12:15	11/10/15 11:13	1
Selenium	<0.010	^	0.010	0.0046	mg/L		11/09/15 12:15	11/10/15 11:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/10/15 11:13	1
Sodium	<1.0		1.0	0.43	mg/L		11/09/15 12:15	11/10/15 11:13	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/10/15 11:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/10/15 11:13	1

Lab Sample ID: LCS 500-311710/2-A
Matrix: Water
Analysis Batch: 312005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311710

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.10		mg/L		105	80 - 120
Antimony	0.500	0.535		mg/L		107	80 - 120
Arsenic	0.100	0.103		mg/L		103	80 - 120
Barium	2.00	2.19		mg/L		110	80 - 120
Beryllium	0.0500	0.0500		mg/L		100	80 - 120
Cadmium	0.0500	0.0508		mg/L		102	80 - 120
Calcium	10.0	9.81		mg/L		98	80 - 120
Chromium	0.200	0.197		mg/L		99	80 - 120
Cobalt	0.500	0.500		mg/L		100	80 - 120
Copper	0.250	0.268		mg/L		107	80 - 120
Iron	1.00	1.03		mg/L		103	80 - 120
Lead	0.100	0.0972		mg/L		97	80 - 120
Magnesium	10.0	9.98		mg/L		100	80 - 120
Manganese	0.500	0.492		mg/L		98	80 - 120
Nickel	0.500	0.484		mg/L		97	80 - 120
Potassium	10.0	10.8		mg/L		108	80 - 120
Selenium	0.100	0.0999	^	mg/L		100	80 - 120
Silver	0.0500	0.0467		mg/L		93	80 - 120
Sodium	10.0	10.7		mg/L		107	80 - 120
Thallium	0.100	0.0914		mg/L		91	80 - 120
Vanadium	0.500	0.492		mg/L		98	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-312029/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312531 — **Prep Batch: 312029**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:22	11/13/15 02:05	1

Lab Sample ID: LCS 500-312029/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312531 — **Prep Batch: 312029**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	0.500	0.500		mg/L		100	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-311844/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312021 — **Prep Batch: 311844**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/09/15 17:00	11/10/15 12:23	1

Lab Sample ID: LCS 500-311844/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312021 — **Prep Batch: 311844**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00206		mg/L		103	80 - 120

Lab Sample ID: 500-103546-1 MS — **Client Sample ID: VAP-HPT-08(9-12)-110315**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 312021 — **Prep Batch: 311844**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.00112		mg/L		112	75 - 125

Lab Sample ID: 500-103546-1 MSD — **Client Sample ID: VAP-HPT-08(9-12)-110315**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 312021 — **Prep Batch: 311844**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.00110		mg/L		110	75 - 125	1	20

Lab Sample ID: 500-103546-1 DU — **Client Sample ID: VAP-HPT-08(9-12)-110315**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 312021 — **Prep Batch: 311844**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	<0.00020			<0.00020		mg/L				NC	20

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-312639/1-A
Matrix: Water
Analysis Batch: 312729

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312639

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0870	J	0.20	0.043	mg/L		11/13/15 23:00	11/15/15 17:09	1

Lab Sample ID: LCS 500-312639/2-A
Matrix: Water
Analysis Batch: 312729

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312639

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia			2.50	2.41		mg/L		96	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(9-12)-110315

Lab Sample ID: 500-103546-1

Date Collected: 11/03/15 15:10
Matrix: Water
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312854	11/16/15 22:40	PMF	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312005	11/10/15 12:06	KML	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312130	11/10/15 21:47	KML	TAL CHI
Dissolved	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312531	11/13/15 03:19	PJ1	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312005	11/10/15 12:01	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312130	11/10/15 21:43	KML	TAL CHI
Total/NA	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312531	11/13/15 02:43	PJ1	TAL CHI
Dissolved	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312021	11/10/15 12:29	MJD	TAL CHI
Total/NA	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312021	11/10/15 12:27	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312639	11/13/15 23:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	312729	11/15/15 17:35	HMW	TAL CHI

Client Sample ID: VAP-HPT-08(14-17)-110315

Lab Sample ID: 500-103546-2

Date Collected: 11/03/15 15:40
Matrix: Water
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	10	312503	11/13/15 14:33	EMA	TAL CHI
Total/NA	Analysis	8260B		1	312854	11/16/15 23:07	PMF	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312005	11/10/15 12:14	KML	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312130	11/10/15 21:55	KML	TAL CHI
Dissolved	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312531	11/13/15 03:23	PJ1	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312005	11/10/15 12:10	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312130	11/10/15 21:51	KML	TAL CHI
Total/NA	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312531	11/13/15 02:55	PJ1	TAL CHI
Dissolved	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312021	11/10/15 12:43	MJD	TAL CHI
Total/NA	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312021	11/10/15 12:41	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-08(14-17)-110315 — Lab Sample ID: 500-103546-2

Date Collected: 11/03/15 15:40 — **Matrix: Water**
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SM 4500 NH3 B			312639	11/13/15 23:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	312729	11/15/15 18:53	HMW	TAL CHI

Client Sample ID: VAP-HPT-09(9-12)-110415 — Lab Sample ID: 500-103546-3

Date Collected: 11/04/15 08:45 — **Matrix: Water**
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312854	11/16/15 23:34	PMF	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312005	11/10/15 12:23	KML	TAL CHI
Dissolved	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312531	11/13/15 03:28	PJ1	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312005	11/10/15 12:19	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312130	11/10/15 22:08	KML	TAL CHI
Total/NA	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312531	11/13/15 03:00	PJ1	TAL CHI
Dissolved	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312021	11/10/15 12:47	MJD	TAL CHI
Total/NA	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312021	11/10/15 12:45	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312639	11/13/15 23:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	312729	11/15/15 17:46	HMW	TAL CHI

Client Sample ID: VAP-HPT-09(14-17)-110415 — Lab Sample ID: 500-103546-4

Date Collected: 11/04/15 11:00 — **Matrix: Water**
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312854	11/17/15 00:01	PMF	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312005	11/10/15 12:31	KML	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312130	11/10/15 22:17	KML	TAL CHI
Dissolved	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312531	11/13/15 03:32	PJ1	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312005	11/10/15 12:27	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312130	11/10/15 22:13	KML	TAL CHI
Total/NA	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-09(14-17)-110415

Lab Sample ID: 500-103546-4
Date Collected: 11/04/15 11:00
Matrix: Water
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	312531	11/13/15 03:04	PJ1	TAL CHI
Dissolved	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312021	11/10/15 12:51	MJD	TAL CHI
Total/NA	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312021	11/10/15 12:49	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312639	11/13/15 23:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	312729	11/15/15 17:49	HMW	TAL CHI

Client Sample ID: VAP-HPT-11(10-13)-110415

Lab Sample ID: 500-103546-5
Date Collected: 11/04/15 12:05
Matrix: Water
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	10	312503	11/13/15 16:14	EMA	TAL CHI
Total/NA	Analysis	8260B		1	312854	11/17/15 00:55	PMF	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312005	11/10/15 12:41	KML	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		10	312005	11/10/15 13:56	KML	TAL CHI
Dissolved	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312531	11/13/15 03:37	PJ1	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312005	11/10/15 12:35	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312005	11/10/15 13:40	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312130	11/10/15 22:21	KML	TAL CHI
Total/NA	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312531	11/13/15 03:09	PJ1	TAL CHI
Dissolved	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312021	11/10/15 12:55	MJD	TAL CHI
Total/NA	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312021	11/10/15 12:53	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312639	11/13/15 23:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312729	11/15/15 18:56	HMW	TAL CHI

Client Sample ID: VAP-HPT-11(16-18)-110415

Lab Sample ID: 500-103546-6
Date Collected: 11/04/15 13:00
Matrix: Water
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312854	11/17/15 00:28	PMF	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Client Sample ID: VAP-HPT-11(16-18)-110415

Lab Sample ID: 500-103546-6
Date Collected: 11/04/15 13:00
Matrix: Water
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6010C		1	312005	11/10/15 13:05	KML	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		10	312005	11/10/15 14:07	KML	TAL CHI
Dissolved	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312130	11/10/15 22:31	KML	TAL CHI
Dissolved	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Dissolved	Analysis	6010C		1	312531	11/13/15 03:50	PJ1	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312005	11/10/15 13:00	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312005	11/10/15 14:02	KML	TAL CHI
Total/NA	Prep	3010A			311710	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312130	11/10/15 22:26	KML	TAL CHI
Total/NA	Prep	3010A			312029	11/10/15 16:22	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312531	11/13/15 03:14	PJ1	TAL CHI
Dissolved	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312021	11/10/15 13:08	MJD	TAL CHI
Total/NA	Prep	7470A			311844	11/09/15 17:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312021	11/10/15 12:57	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312639	11/13/15 23:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312729	11/15/15 18:59	HMW	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-103546-7
Date Collected: 11/03/15 00:00
Matrix: Water
Date Received: 11/04/15 15:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	312503	11/13/15 17:29	EMA	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103546-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
E-Mail:

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103546

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 3.9

Client: Arcadis
Client Project #: C1001805.0002
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Elly Gatt
Lab PM:

Preservative Key
1. HCL, Cool to 4°

500-103546 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Ammonia	TAL Metals-Total	TAL Metals-Dissolved	VOCs						Comments
1		VAP-HPT-08(9-12)-110315	11-3-15	1510	6	W	X	X	X	X						
2		VAP-HPT-08(14-17)-110315	11-3-15	1540	6	W	X	X	X	X						
3		VAP-HPT9(9-12)-110415	11-4-15	0845	6	W	X	X	X	X						
4		VAP-HPT9(14-17)-110415	11-4-15	0100	6	W	X	X	X	X						
5		VAP-HPT11(10-13)-110415	11-4-15	1205	6	W	X	X	X	X						
6		VAP-HPT11(16-18)-110415	11-4-15	1300	6	W	X	X	X	X						
7		Trip Blank			2											Added by TA

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Elly Gatt	Arcadis	11-4-15	14:15	Daniel Bedem	TA	11-4-15	14:15
Daniel Bedem	TA	11-4-15	15:40	[illegible]	TA-CHI	11/4/15	15:40
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-103546-1

Login Number: 103546
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-103623-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
11/19/2015 10:03:08 AM

Bonnie Stadelmann, Senior Project Manager
(708)534-5200
bonnie.stadelmann@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-103623-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-103623-1

Comments
No additional comments.

Receipt
The samples were received on 11/5/2015 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3º C.

Receipt Exceptions

Received Trip Blank not on COC, added to COC and logged in.

GC/MS VOA
Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: VAP-HPT11(19-22)-110415 (500-103623-1), VAP-HPT11(24-27)-110415 (500-103623-2), VAP-HPT10(10-13)-110515 (500-103623-3), VAP-HPT10(22-25)-110515 (500-103623-4), VAP-HPT12(8-11)-110515 (500-103623-5) and VAP-HPT13(8-11)-110515 (500-103623-6).

Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: VAP-HPT11(24-27)-110415 (500-103623-2). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: Surrogate recoveries were outside of acceptance limits for the following sample: VAP-HPT11(24-27)-110415 (500-103623-2). The sample shows evidence of matrix interference. Re-analysis was performed at a dilution for target compounds, with all surrogates within QC limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The low-level ICVL at line 8 in 6010C batch 500-312128 was above the method acceptance limits of 70-130% recovery for Lead. The sample VAP-HPT11(19-22)-110415 (500-103623-1), VAP-HPT11(24-27)-110415 (500-103623-2), VAP-HPT10(10-13) -110515 (500-103623-3), VAP-HPT10(22-25)-110515 (500-103623-4), VAP-HPT12(8-11)-110515 (500-103623-5) and VAP-HPT13(8-11) -110515 (500-103623-6) was bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415 — Lab Sample ID: 500-103623-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	16		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.8		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	2.3		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	0.79	J	1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	7.8		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	8.6		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.4		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	6.8		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	17		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	150		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	5.0		0.50	0.20	ug/L	1		8260B	Total/NA
Ethylbenzene - DL	270		2.5	0.92	ug/L	5		8260B	Total/NA
Xylenes, Total - DL	1100		5.0	1.1	ug/L	5		8260B	Total/NA
Aluminum	2.9		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.010	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.048		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.49		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0079		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	13		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.22		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.051		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.095		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	15		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.73		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	28		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.067	B	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.19		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	670		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.015		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0016	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3000		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.056		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.1		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.31		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.017		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.27		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	8.6		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.13		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.038		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0053	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	3.9		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.024	^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	21		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.013		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.12		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	540		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0054	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	3500		100	43	mg/L	100		6010C	Dissolved
Vanadium	0.023		0.0050	0.0019	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415 (Continued) — Lab Sample ID: 500-103623-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Zinc	0.075		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00074		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	650	B	40	8.6	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT11(24-27)-110415 — Lab Sample ID: 500-103623-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	14		10	3.5	ug/L	2		8260B	Total/NA
Benzene	18		1.0	0.29	ug/L	2		8260B	Total/NA
Isopropylbenzene	200		2.0	0.77	ug/L	2		8260B	Total/NA
Methylcyclohexane	7.0		2.0	0.63	ug/L	2		8260B	Total/NA
methyl isobutyl ketone	5.7	J	10	4.3	ug/L	2		8260B	Total/NA
Toluene	330		1.0	0.30	ug/L	2		8260B	Total/NA
Vinyl chloride	1.4		1.0	0.41	ug/L	2		8260B	Total/NA
Ethylbenzene - DL	690		10	3.7	ug/L	20		8260B	Total/NA
Xylenes, Total - DL	1600		20	4.4	ug/L	20		8260B	Total/NA
Aluminum	3.2		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.045		0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.027		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.79		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0042		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	12		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.14		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.035		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.084		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	9.4		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.46		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	44		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.055	B	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.12		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	460		0.50	0.16	mg/L	1		6010C	Total/NA
Silver	0.012		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	2300		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.039		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.1		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.19	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.015		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.59		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	10		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.11		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.034		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0031	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	4.7		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.013	^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	43		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.022		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.11		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	460		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0069	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	3000		100	43	mg/L	100		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415 (Continued) — Lab Sample ID: 500-103623-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.027		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.030		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00011	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	500	B	40	8.6	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT10(10-13)-110515 — Lab Sample ID: 500-103623-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	11		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	7.9		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	2.0		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.97	J	1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.3		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	3.1		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	4.3		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	62		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	5.9		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.68		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	210		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	4.2		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0099	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.049		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.52		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.013		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	24		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.13		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.034		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.18		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	35		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.7		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	52		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.21	B	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.17		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	380		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0077	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0030	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3200		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.029		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	2.5		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.15	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.017		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.29		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	16		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.058		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.026		0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	4.4		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0098	^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	49		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.024		0.010	0.0034	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(10-13)-110515 (Continued) — Lab Sample ID: 500-103623-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.099		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	380		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0055	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	2700		100	43	mg/L	100		6010C	Dissolved
Vanadium	0.014		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.051		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00034		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	420	B	20	4.3	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT10(22-25)-110515 — Lab Sample ID: 500-103623-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	11		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	6.3		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	3.8		1.0	0.47	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.9		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	6.9		1.0	0.36	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.1		1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	63		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.8		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl tert-butyl ether	0.42	J	1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	13		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	170		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	12		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.017	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.060		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.74		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0011	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.68		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	47		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.24		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.092		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.62		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	110		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.3		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	57		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.75	B	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.78		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	500		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.013		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0073		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	2600		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.067		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	2.8		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.14	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.013		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.21		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	13		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.087		0.010	0.0024	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515 (Continued) — Lab Sample ID: 500-103623-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.040		0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	6.0		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0059	^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	44		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.028		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.17		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	490		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0060	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	4000		100	43	mg/L	100		6010C	Dissolved
Vanadium	0.022		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.020		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00019	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	530	B	40	8.6	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT12(8-11)-110515 — Lab Sample ID: 500-103623-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.5		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	8.9		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	16		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	32		1.0	0.47	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.8		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	10		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	91		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	6.9		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.6		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	210		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	2.2		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0085	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.026		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.18		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0027		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	60		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.12		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.024		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.028		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	4.6		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.16		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	58		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.043	B	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.074		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	380		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.011		0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	2800		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.035		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.18		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.25		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.015		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.16		0.010	0.0022	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515 (Continued) — Lab Sample ID: 500-103623-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	32		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.095		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.024		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	2.3		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0064	^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	56		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.021		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.069		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	390		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	3200		100	43	mg/L	100		6010C	Dissolved
Vanadium	0.027		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.020		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00012	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	450	B	20	4.3	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT13(8-11)-110515 — Lab Sample ID: 500-103623-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	16		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	11		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	1.4		1.0	0.39	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.6		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	13		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	100		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	7.2		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	8.3		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	380		10	2.2	ug/L	10		8260B	Total/NA
Aluminum	6.1		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.011	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.066		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.82		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0015	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0057		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	45		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.22		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.053		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.26		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	36		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.70		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	47		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.23	B	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.19		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	510		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.011		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0014	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	1200		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.046		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.71		0.020	0.0090	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT13(8-11)-110515 (Continued) — Lab Sample ID: 500-103623-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.52		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.023		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.49		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	29		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.17		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.049		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0060	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	5.2		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.022	^	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	45		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.031		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.15		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	540		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0095	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	4800		100	43	mg/L	100		6010C	Dissolved
Vanadium	0.026		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.088		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00045		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	620	B	40	8.6	mg/L	50		SM 4500 NH3 G	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-103623-7

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-103623-1	VAP-HPT11(19-22)-110415	Water	11/04/15 14:50	11/05/15 15:00
500-103623-2	VAP-HPT11(24-27)-110415	Water	11/04/15 15:35	11/05/15 15:00
500-103623-3	VAP-HPT10(10-13)-110515	Water	11/05/15 09:00	11/05/15 15:00
500-103623-4	VAP-HPT10(22-25)-110515	Water	11/05/15 10:25	11/05/15 15:00
500-103623-5	VAP-HPT12(8-11)-110515	Water	11/05/15 13:06	11/05/15 15:00
500-103623-6	VAP-HPT13(8-11)-110515	Water	11/05/15 13:50	11/05/15 15:00
500-103623-7	Trip Blank	Water	11/04/15 00:00	11/05/15 15:00

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415

Lab Sample ID: 500-103623-1

Date Collected: 11/04/15 14:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			11/18/15 04:49	1
Benzene	**6.8**		0.50	0.15	ug/L			11/18/15 04:49	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 04:49	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 04:49	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 04:49	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 04:49	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 04:49	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/18/15 04:49	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 04:49	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 04:49	1
cis-1,2-Dichloroethene	**2.3**		1.0	0.41	ug/L			11/18/15 04:49	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 04:49	1
Cyclohexane	**0.79**	**J**	1.0	0.49	ug/L			11/18/15 04:49	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 04:49	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 04:49	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/18/15 04:49	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 04:49	1
1,4-Dichlorobenzene	**7.8**		1.0	0.36	ug/L			11/18/15 04:49	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 04:49	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 04:49	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 04:49	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 04:49	1
Isopropylbenzene	**8.6**		1.0	0.39	ug/L			11/18/15 04:49	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 04:49	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			11/18/15 04:49	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 04:49	1
Methyl Ethyl Ketone	**6.8**		5.0	2.1	ug/L			11/18/15 04:49	1
methyl isobutyl ketone	**17**		5.0	2.2	ug/L			11/18/15 04:49	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 04:49	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 04:49	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 04:49	1
Toluene	**150**		0.50	0.15	ug/L			11/18/15 04:49	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 04:49	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 04:49	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 04:49	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 04:49	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 04:49	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 04:49	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 04:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 04:49	1
Vinyl chloride	**5.0**		0.50	0.20	ug/L			11/18/15 04:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*		*11/18/15 04:49*	*1*

TestAmerica Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415

Lab Sample ID: 500-103623-1

Date Collected: 11/04/15 14:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*90*		*75 - 120*		*11/18/15 04:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*		*11/18/15 04:49*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 04:49*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**270**		2.5	0.92	ug/L			11/17/15 07:46	5
Xylenes, Total	**1100**		5.0	1.1	ug/L			11/17/15 07:46	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*75 - 120*		*11/17/15 07:46*	*5*
Dibromofluoromethane	*85*		*75 - 120*		*11/17/15 07:46*	*5*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 125*		*11/17/15 07:46*	*5*
Toluene-d8 (Surr)	*120*		*75 - 120*		*11/17/15 07:46*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.9**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:06	1
Antimony	**0.010**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 02:47	1
Arsenic	**0.048**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:47	1
Barium	**0.49**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 02:47	1
Cadmium	**0.0079**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 02:47	1
Calcium	**13**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:06	1
Chromium	**0.22**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 02:47	1
Cobalt	**0.051**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 02:47	1
Copper	**0.095**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:47	1
Iron	**15**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:06	1
Lead	**0.73**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 02:47	1
Magnesium	**28**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:06	1
Manganese	**0.067**	**B**	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 02:47	1
Nickel	**0.19**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:47	1
Potassium	**670**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 02:47	1
Selenium	**0.015**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:04	1
Silver	**0.0016**	**J**	0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 02:47	1
Sodium	**3000**		10	4.3	mg/L		11/09/15 12:15	11/13/15 19:49	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/13/15 22:06	1
Vanadium	**0.056**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:06	1
Zinc	**1.1**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 19:46	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.31**		0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:35	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:35	1
Arsenic	**0.017**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:35	1
Barium	**0.27**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:35	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:35	1
Calcium	**8.6**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:35	1
Chromium	**0.13**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415

Lab Sample ID: 500-103623-1

Date Collected: 11/04/15 14:50

Matrix: Water

Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.038		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:35	1
Copper	0.0053	J	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:35	1
Iron	3.9		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:35	1
Lead	0.024	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:35	1
Magnesium	21		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:35	1
Manganese	0.013		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:35	1
Nickel	0.12		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:35	1
Potassium	540		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:35	1
Selenium	0.0054	J	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:35	1
Sodium	3500		100	43	mg/L		11/10/15 09:10	11/11/15 20:38	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:35	1
Vanadium	0.023		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:35	1
Zinc	0.075		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00074		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	650	B	40	8.6	mg/L		11/16/15 16:40	11/16/15 19:27	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415

Lab Sample ID: 500-103623-2

Date Collected: 11/04/15 15:35
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**14**		10	3.5	ug/L			11/18/15 03:57	2
Benzene	**18**		1.0	0.29	ug/L			11/18/15 03:57	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/18/15 03:57	2
Bromoform	<2.0		2.0	0.97	ug/L			11/18/15 03:57	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/18/15 03:57	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			11/18/15 03:57	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
Chlorobenzene	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/18/15 03:57	2
Chloroform	<2.0		2.0	0.74	ug/L			11/18/15 03:57	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/18/15 03:57	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			11/18/15 03:57	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/18/15 03:57	2
Cyclohexane	<2.0		2.0	0.97	ug/L			11/18/15 03:57	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/18/15 03:57	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/18/15 03:57	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			11/18/15 03:57	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/18/15 03:57	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			11/18/15 03:57	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/18/15 03:57	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			11/18/15 03:57	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/18/15 03:57	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/18/15 03:57	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/18/15 03:57	2
2-Hexanone	<10		10	3.1	ug/L			11/18/15 03:57	2
Isopropylbenzene	**200**		2.0	0.77	ug/L			11/18/15 03:57	2
Methyl acetate	<10		10	4.0	ug/L			11/18/15 03:57	2
Methylcyclohexane	**7.0**		2.0	0.63	ug/L			11/18/15 03:57	2
Methylene Chloride	<10		10	3.3	ug/L			11/18/15 03:57	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/18/15 03:57	2
methyl isobutyl ketone	**5.7**	**J**	10	4.3	ug/L			11/18/15 03:57	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/18/15 03:57	2
Styrene	<2.0		2.0	0.77	ug/L			11/18/15 03:57	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/18/15 03:57	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/18/15 03:57	2
Toluene	**330**		1.0	0.30	ug/L			11/18/15 03:57	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/18/15 03:57	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/18/15 03:57	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/18/15 03:57	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/18/15 03:57	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/18/15 03:57	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/18/15 03:57	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/18/15 03:57	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/18/15 03:57	2
Vinyl chloride	**1.4**		1.0	0.41	ug/L			11/18/15 03:57	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*	*X*	*75 - 120*		*11/18/15 03:57*	*2*

TestAmerica Chicago

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415

Lab Sample ID: 500-103623-2
Date Collected: 11/04/15 15:35
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 03:57*	*2*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*		*11/18/15 03:57*	*2*
Toluene-d8 (Surr)	*93*		*75 - 120*		*11/18/15 03:57*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**690**		10	3.7	ug/L			11/18/15 04:23	20
Xylenes, Total	**1600**		20	4.4	ug/L			11/18/15 04:23	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/18/15 04:23*	*20*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 04:23*	*20*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/18/15 04:23*	*20*
Toluene-d8 (Surr)	*89*		*75 - 120*		*11/18/15 04:23*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3.2**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:11	1
Antimony	**0.045**		0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 02:52	1
Arsenic	**0.027**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:52	1
Barium	**0.79**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 02:52	1
Cadmium	**0.0042**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 02:52	1
Calcium	**12**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:11	1
Chromium	**0.14**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 02:52	1
Cobalt	**0.035**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 02:52	1
Copper	**0.084**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:52	1
Iron	**9.4**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:11	1
Lead	**0.46**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 02:52	1
Magnesium	**44**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:11	1
Manganese	**0.055**	**B**	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 02:52	1
Nickel	**0.12**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:52	1
Potassium	**460**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 02:52	1
Selenium	<0.010		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:09	1
Silver	**0.012**		0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 02:52	1
Sodium	**2300**		10	4.3	mg/L		11/09/15 12:15	11/13/15 20:01	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/13/15 22:11	1
Vanadium	**0.039**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:11	1
Zinc	**1.1**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 19:52	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.19**	**J**	0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:40	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:40	1
Arsenic	**0.015**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:40	1
Barium	**0.59**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:40	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:40	1
Calcium	**10**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:40	1
Chromium	**0.11**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415

Lab Sample ID: 500-103623-2
Date Collected: 11/04/15 15:35
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.034		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:40	1
Copper	0.0031	J	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:40	1
Iron	4.7		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:40	1
Lead	0.013	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:40	1
Magnesium	43		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:40	1
Manganese	0.022		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:40	1
Nickel	0.11		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:40	1
Potassium	460		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:40	1
Selenium	0.0069	J	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:40	1
Sodium	3000		100	43	mg/L		11/10/15 09:10	11/11/15 20:50	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:40	1
Vanadium	0.027		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:40	1
Zinc	0.030		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00011	J	0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:17	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	500	B	40	8.6	mg/L		11/16/15 16:40	11/16/15 21:08	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(10-13)-110515

Lab Sample ID: 500-103623-3

Date Collected: 11/05/15 09:00
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**11**		5.0	1.7	ug/L			11/18/15 01:46	1
Benzene	**7.9**		0.50	0.15	ug/L			11/18/15 01:46	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 01:46	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 01:46	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 01:46	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 01:46	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 01:46	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			11/18/15 01:46	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/18/15 01:46	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 01:46	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 01:46	1
cis-1,2-Dichloroethene	**0.97**	**J**	1.0	0.41	ug/L			11/18/15 01:46	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 01:46	1
Cyclohexane	**1.3**		1.0	0.49	ug/L			11/18/15 01:46	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 01:46	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 01:46	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,2-Dichlorobenzene	**3.1**		1.0	0.33	ug/L			11/18/15 01:46	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 01:46	1
1,4-Dichlorobenzene	**4.3**		1.0	0.36	ug/L			11/18/15 01:46	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 01:46	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 01:46	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 01:46	1
Ethylbenzene	**62**		0.50	0.18	ug/L			11/18/15 01:46	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 01:46	1
Isopropylbenzene	**5.9**		1.0	0.39	ug/L			11/18/15 01:46	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 01:46	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/18/15 01:46	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 01:46	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 01:46	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 01:46	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 01:46	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 01:46	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 01:46	1
Toluene	**14**		0.50	0.15	ug/L			11/18/15 01:46	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 01:46	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 01:46	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 01:46	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 01:46	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 01:46	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 01:46	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 01:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 01:46	1
Vinyl chloride	**0.68**		0.50	0.20	ug/L			11/18/15 01:46	1
Xylenes, Total	**210**		1.0	0.22	ug/L			11/18/15 01:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(10-13)-110515

Date Collected: 11/05/15 09:00
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*11/18/15 01:46*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 01:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*		*11/18/15 01:46*	*1*
Toluene-d8 (Surr)	*90*		*75 - 120*		*11/18/15 01:46*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.2**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:17	1
Antimony	**0.0099**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 02:57	1
Arsenic	**0.049**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:57	1
Barium	**0.52**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 02:57	1
Cadmium	**0.013**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 02:57	1
Calcium	**24**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:17	1
Chromium	**0.13**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 02:57	1
Cobalt	**0.034**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 02:57	1
Copper	**0.18**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:57	1
Iron	**35**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:17	1
Lead	**1.7**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 02:57	1
Magnesium	**52**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:17	1
Manganese	**0.21**	**B**	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 02:57	1
Nickel	**0.17**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:57	1
Potassium	**380**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 02:57	1
Selenium	**0.0077**	**J**	0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:14	1
Silver	**0.0030**	**J**	0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 02:57	1
Sodium	**3200**		10	4.3	mg/L		11/09/15 12:15	11/13/15 20:06	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/11/15 02:57	1
Vanadium	**0.029**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:17	1
Zinc	**2.5**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 19:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:45	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:45	1
Arsenic	**0.017**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:45	1
Barium	**0.29**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:45	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:45	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:45	1
Calcium	**16**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:45	1
Chromium	**0.058**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:45	1
Cobalt	**0.026**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:45	1
Copper	<0.010		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:45	1
Iron	**4.4**		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:45	1
Lead	**0.0098**	**^**	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:45	1
Magnesium	**49**		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:45	1
Manganese	**0.024**		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:45	1
Nickel	**0.099**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:45	1
Potassium	**380**		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:45	1
Selenium	**0.0055**	**J**	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:45	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(10-13)-110515

Lab Sample ID: 500-103623-3

Date Collected: 11/05/15 09:00

Matrix: Water

Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**2700**		100	43	mg/L		11/10/15 09:10	11/11/15 20:54	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:45	1
Vanadium	**0.014**		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:45	1
Zinc	**0.051**		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00034**		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:21	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**420**	**B**	20	4.3	mg/L		11/16/15 16:40	11/16/15 19:33	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515

Lab Sample ID: 500-103623-4

Date Collected: 11/05/15 10:25
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**11**		5.0	1.7	ug/L			11/18/15 02:13	1
Benzene	**14**		0.50	0.15	ug/L			11/18/15 02:13	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 02:13	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 02:13	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 02:13	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 02:13	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 02:13	1
Chlorobenzene	**6.3**		1.0	0.39	ug/L			11/18/15 02:13	1
Chloroethane	**3.8**		1.0	0.47	ug/L			11/18/15 02:13	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 02:13	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 02:13	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/18/15 02:13	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 02:13	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/18/15 02:13	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 02:13	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 02:13	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,2-Dichlorobenzene	**1.9**		1.0	0.33	ug/L			11/18/15 02:13	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 02:13	1
1,4-Dichlorobenzene	**6.9**		1.0	0.36	ug/L			11/18/15 02:13	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 02:13	1
1,1-Dichloroethane	**1.1**		1.0	0.41	ug/L			11/18/15 02:13	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 02:13	1
Ethylbenzene	**63**		0.50	0.18	ug/L			11/18/15 02:13	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 02:13	1
Isopropylbenzene	**4.8**		1.0	0.39	ug/L			11/18/15 02:13	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 02:13	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/18/15 02:13	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 02:13	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 02:13	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 02:13	1
Methyl tert-butyl ether	**0.42**	**J**	1.0	0.39	ug/L			11/18/15 02:13	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 02:13	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 02:13	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 02:13	1
Toluene	**13**		0.50	0.15	ug/L			11/18/15 02:13	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 02:13	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 02:13	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 02:13	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 02:13	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 02:13	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 02:13	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 02:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 02:13	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/18/15 02:13	1
Xylenes, Total	**170**		1.0	0.22	ug/L			11/18/15 02:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515

Date Collected: 11/05/15 10:25
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*11/18/15 02:13*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*11/18/15 02:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/18/15 02:13*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 02:13*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**12**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:22	1
Antimony	**0.017**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 03:02	1
Arsenic	**0.060**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:02	1
Barium	**0.74**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:02	1
Beryllium	**0.0011**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 03:02	1
Cadmium	**0.68**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 03:02	1
Calcium	**47**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:22	1
Chromium	**0.24**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 03:02	1
Cobalt	**0.092**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 03:02	1
Copper	**0.62**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:02	1
Iron	**110**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:22	1
Lead	**1.3**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 03:02	1
Magnesium	**57**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:22	1
Manganese	**0.75**	**B**	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 03:02	1
Nickel	**0.78**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:02	1
Potassium	**500**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 03:02	1
Selenium	**0.013**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:19	1
Silver	**0.0073**		0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 03:02	1
Sodium	**2600**		10	4.3	mg/L		11/09/15 12:15	11/13/15 20:11	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/13/15 22:22	1
Vanadium	**0.067**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:22	1
Zinc	**2.8**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 20:02	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.14**	**J**	0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:59	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:59	1
Arsenic	**0.013**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:59	1
Barium	**0.21**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:59	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:59	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:59	1
Calcium	**13**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:59	1
Chromium	**0.087**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:59	1
Cobalt	**0.040**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:59	1
Copper	<0.010		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:59	1
Iron	**6.0**		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:59	1
Lead	**0.0059**	**^**	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:59	1
Magnesium	**44**		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:59	1
Manganese	**0.028**		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:59	1
Nickel	**0.17**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:59	1
Potassium	**490**		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:59	1
Selenium	**0.0060**	**J**	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515

Lab Sample ID: 500-103623-4

Date Collected: 11/05/15 10:25
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**4000**		100	43	mg/L		11/10/15 09:10	11/11/15 20:58	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:59	1
Vanadium	**0.022**		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:59	1
Zinc	**0.020**		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00019**	**J**	0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:25	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**530**	**B**	40	8.6	mg/L		11/16/15 16:40	11/16/15 19:36	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515

Lab Sample ID: 500-103623-5

Date Collected: 11/05/15 13:06
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.5**		5.0	1.7	ug/L			11/18/15 02:39	1
Benzene	**8.9**		0.50	0.15	ug/L			11/18/15 02:39	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 02:39	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 02:39	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 02:39	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 02:39	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 02:39	1
Chlorobenzene	**16**		1.0	0.39	ug/L			11/18/15 02:39	1
Chloroethane	**32**		1.0	0.47	ug/L			11/18/15 02:39	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 02:39	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 02:39	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/18/15 02:39	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 02:39	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/18/15 02:39	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 02:39	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 02:39	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,2-Dichlorobenzene	**2.8**		1.0	0.33	ug/L			11/18/15 02:39	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 02:39	1
1,4-Dichlorobenzene	**10**		1.0	0.36	ug/L			11/18/15 02:39	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 02:39	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 02:39	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 02:39	1
Ethylbenzene	**91**		0.50	0.18	ug/L			11/18/15 02:39	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 02:39	1
Isopropylbenzene	**6.9**		1.0	0.39	ug/L			11/18/15 02:39	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 02:39	1
Methylcyclohexane	**1.6**		1.0	0.32	ug/L			11/18/15 02:39	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 02:39	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 02:39	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 02:39	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 02:39	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 02:39	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 02:39	1
Toluene	**14**		0.50	0.15	ug/L			11/18/15 02:39	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 02:39	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 02:39	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 02:39	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 02:39	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 02:39	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 02:39	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 02:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 02:39	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/18/15 02:39	1
Xylenes, Total	**210**		1.0	0.22	ug/L			11/18/15 02:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515

Date Collected: 11/05/15 13:06
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*11/18/15 02:39*	*1*
Dibromofluoromethane	*88*		*75 - 120*		*11/18/15 02:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*		*11/18/15 02:39*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 02:39*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.2**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:27	1
Antimony	**0.0085**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 03:07	1
Arsenic	**0.026**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:07	1
Barium	**0.18**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 03:07	1
Cadmium	**0.0027**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 03:07	1
Calcium	**60**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:27	1
Chromium	**0.12**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 03:07	1
Cobalt	**0.024**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 03:07	1
Copper	**0.028**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:07	1
Iron	**4.6**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:27	1
Lead	**0.16**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 03:07	1
Magnesium	**58**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:27	1
Manganese	**0.043**	**B**	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 03:07	1
Nickel	**0.074**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:07	1
Potassium	**380**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 03:07	1
Selenium	**0.011**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 03:07	1
Sodium	**2800**		10	4.3	mg/L		11/09/15 12:15	11/13/15 20:17	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/11/15 03:07	1
Vanadium	**0.035**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:27	1
Zinc	**0.18**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 20:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.25**		0.20	0.062	mg/L		11/10/15 09:10	11/10/15 21:04	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 21:04	1
Arsenic	**0.015**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:04	1
Barium	**0.16**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 21:04	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 21:04	1
Calcium	**32**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 21:04	1
Chromium	**0.095**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 21:04	1
Cobalt	**0.024**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 21:04	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:04	1
Iron	**2.3**		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 21:04	1
Lead	**0.0064**	**^**	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 21:04	1
Magnesium	**56**		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 21:04	1
Manganese	**0.021**		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 21:04	1
Nickel	**0.069**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:04	1
Potassium	**390**		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 21:04	1
Selenium	<0.010		0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 21:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 21:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515

Lab Sample ID: 500-103623-5

Date Collected: 11/05/15 13:06

Matrix: Water

Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**3200**		100	43	mg/L		11/10/15 09:10	11/11/15 21:02	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 21:04	1
Vanadium	**0.027**		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 21:04	1
Zinc	**0.020**		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:51	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**450**	**B**	20	4.3	mg/L		11/16/15 16:40	11/16/15 21:11	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT13(8-11)-110515

Lab Sample ID: 500-103623-6

Date Collected: 11/05/15 13:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			11/18/15 03:05	1
Benzene	**11**		0.50	0.15	ug/L			11/18/15 03:05	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/18/15 03:05	1
Bromoform	<1.0		1.0	0.48	ug/L			11/18/15 03:05	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/18/15 03:05	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/18/15 03:05	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/18/15 03:05	1
Chlorobenzene	**1.4**		1.0	0.39	ug/L			11/18/15 03:05	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/18/15 03:05	1
Chloroform	<1.0		1.0	0.37	ug/L			11/18/15 03:05	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/18/15 03:05	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/18/15 03:05	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/18/15 03:05	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/18/15 03:05	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/18/15 03:05	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/18/15 03:05	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,2-Dichlorobenzene	**2.6**		1.0	0.33	ug/L			11/18/15 03:05	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/18/15 03:05	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			11/18/15 03:05	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/18/15 03:05	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/18/15 03:05	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/18/15 03:05	1
Ethylbenzene	**100**		0.50	0.18	ug/L			11/18/15 03:05	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/18/15 03:05	1
Isopropylbenzene	**7.2**		1.0	0.39	ug/L			11/18/15 03:05	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/18/15 03:05	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/18/15 03:05	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/18/15 03:05	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/18/15 03:05	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/18/15 03:05	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
Styrene	<1.0		1.0	0.39	ug/L			11/18/15 03:05	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/18/15 03:05	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/18/15 03:05	1
Toluene	**8.3**		0.50	0.15	ug/L			11/18/15 03:05	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/18/15 03:05	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/18/15 03:05	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/18/15 03:05	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/18/15 03:05	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/18/15 03:05	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/18/15 03:05	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/18/15 03:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/18/15 03:05	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/18/15 03:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT13(8-11)-110515

Date Collected: 11/05/15 13:50
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*75 - 120*		*11/18/15 03:05*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*11/18/15 03:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 125*		*11/18/15 03:05*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/18/15 03:05*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**380**		10	2.2	ug/L			11/18/15 03:31	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*11/18/15 03:31*	*10*
Dibromofluoromethane	*91*		*75 - 120*		*11/18/15 03:31*	*10*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*		*11/18/15 03:31*	*10*
Toluene-d8 (Surr)	*88*		*75 - 120*		*11/18/15 03:31*	*10*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**6.1**		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 22:32	1
Antimony	**0.011**	**J**	0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 03:13	1
Arsenic	**0.066**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:13	1
Barium	**0.82**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:13	1
Beryllium	**0.0015**	**J**	0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 03:13	1
Cadmium	**0.0057**		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 03:13	1
Calcium	**45**		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 22:32	1
Chromium	**0.22**		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 03:13	1
Cobalt	**0.053**		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 03:13	1
Copper	**0.26**		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 03:13	1
Iron	**36**		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 22:32	1
Lead	**0.70**		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 03:13	1
Magnesium	**47**		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 22:32	1
Manganese	**0.23**	**B**	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 03:13	1
Nickel	**0.19**		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 03:13	1
Potassium	**510**		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 03:13	1
Selenium	**0.011**		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 17:30	1
Silver	**0.0014**	**J**	0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 03:13	1
Sodium	**1200**		10	4.3	mg/L		11/09/15 12:15	11/13/15 20:22	10
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/11/15 03:13	1
Vanadium	**0.046**		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 22:32	1
Zinc	**0.71**		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 20:12	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.52**		0.20	0.062	mg/L		11/10/15 09:10	11/10/15 21:09	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 21:09	1
Arsenic	**0.023**		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:09	1
Barium	**0.49**		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 21:09	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 21:09	1
Calcium	**29**		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 21:09	1
Chromium	**0.17**		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 21:09	1
Cobalt	**0.049**		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 21:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT13(8-11)-110515

Lab Sample ID: 500-103623-6

Date Collected: 11/05/15 13:50
Matrix: Water
Date Received: 11/05/15 15:00

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0060	J	0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 21:09	1
Iron	5.2		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 21:09	1
Lead	0.022	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 21:09	1
Magnesium	45		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 21:09	1
Manganese	0.031		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 21:09	1
Nickel	0.15		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 21:09	1
Potassium	540		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 21:09	1
Selenium	0.0095	J	0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 21:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 21:09	1
Sodium	4800		100	43	mg/L		11/10/15 09:10	11/11/15 21:07	100
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 21:09	1
Vanadium	0.026		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 21:09	1
Zinc	0.088		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 08:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00045		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:37	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	620	B	40	8.6	mg/L		11/16/15 16:40	11/16/15 19:47	50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: Trip Blank

Date Collected: 11/04/15 00:00
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-7

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/17/15 22:43	1
Benzene	<0.50		0.50	0.15	ug/L			11/17/15 22:43	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 22:43	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 22:43	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 22:43	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 22:43	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 22:43	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 22:43	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 22:43	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 22:43	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/17/15 22:43	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 22:43	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 22:43	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 22:43	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 22:43	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 22:43	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 22:43	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/17/15 22:43	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 22:43	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 22:43	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 22:43	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/17/15 22:43	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 22:43	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 22:43	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/17/15 22:43	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 22:43	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 22:43	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/17/15 22:43	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 22:43	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 22:43	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 22:43	1
Toluene	<0.50		0.50	0.15	ug/L			11/17/15 22:43	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 22:43	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 22:43	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 22:43	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 22:43	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 22:43	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 22:43	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 22:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 22:43	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/17/15 22:43	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/17/15 22:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-103623-7

Date Collected: 11/04/15 00:00

Matrix: Water

Date Received: 11/05/15 15:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		75 - 120		11/17/15 22:43	1
Dibromofluoromethane	92		75 - 120		11/17/15 22:43	1
1,2-Dichloroethane-d4 (Surr)	94		75 - 125		11/17/15 22:43	1
Toluene-d8 (Surr)	89		75 - 120		11/17/15 22:43	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

GC/MS VOA

Analysis Batch: 312899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1 - DL	VAP-HPT11(19-22)-110415	Total/NA	Water	8260B	
LCS 500-312899/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-312899/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 313020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	8260B	
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	8260B	
500-103623-2 - DL	VAP-HPT11(24-27)-110415	Total/NA	Water	8260B	
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	8260B	
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	8260B	
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	8260B	
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	8260B	
500-103623-6 - DL	VAP-HPT13(8-11)-110515	Total/NA	Water	8260B	
500-103623-7	Trip Blank	Total/NA	Water	8260B	
LCS 500-313020/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-313020/6	Method Blank	Total/NA	Water	8260B	

Metals

Filtration Batch: 311709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-311709/1-D	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 311711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	3010A	
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	3010A	
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	3010A	
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	3010A	
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	3010A	
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	3010A	
LCS 500-311711/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-311711/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 311859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Dissolved	Water	3010A	
500-103623-2	VAP-HPT11(24-27)-110415	Dissolved	Water	3010A	
500-103623-3	VAP-HPT10(10-13)-110515	Dissolved	Water	3010A	
500-103623-4	VAP-HPT10(22-25)-110515	Dissolved	Water	3010A	
500-103623-5	VAP-HPT12(8-11)-110515	Dissolved	Water	3010A	
500-103623-6	VAP-HPT13(8-11)-110515	Dissolved	Water	3010A	
LCS 500-311859/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-311709/1-D	Method Blank	Dissolved	Water	3010A	311709

Prep Batch: 312017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Dissolved	Water	7470A	
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 312017 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-2	VAP-HPT11(24-27)-110415	Dissolved	Water	7470A	
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	7470A	
500-103623-3	VAP-HPT10(10-13)-110515	Dissolved	Water	7470A	
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	7470A	
500-103623-4	VAP-HPT10(22-25)-110515	Dissolved	Water	7470A	
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	7470A	
500-103623-5	VAP-HPT12(8-11)-110515	Dissolved	Water	7470A	
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	7470A	
500-103623-6	VAP-HPT13(8-11)-110515	Dissolved	Water	7470A	
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	7470A	
LCS 500-312017/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-312017/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 312128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Dissolved	Water	6010C	311859
500-103623-2	VAP-HPT11(24-27)-110415	Dissolved	Water	6010C	311859
500-103623-3	VAP-HPT10(10-13)-110515	Dissolved	Water	6010C	311859
500-103623-4	VAP-HPT10(22-25)-110515	Dissolved	Water	6010C	311859
500-103623-5	VAP-HPT12(8-11)-110515	Dissolved	Water	6010C	311859
500-103623-6	VAP-HPT13(8-11)-110515	Dissolved	Water	6010C	311859
LCS 500-311859/2-A	Lab Control Sample	Total/NA	Water	6010C	311859
MB 500-311709/1-D	Method Blank	Dissolved	Water	6010C	311859

Analysis Batch: 312198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Dissolved	Water	7470A	312017
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	7470A	312017
500-103623-2	VAP-HPT11(24-27)-110415	Dissolved	Water	7470A	312017
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	7470A	312017
500-103623-3	VAP-HPT10(10-13)-110515	Dissolved	Water	7470A	312017
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	7470A	312017
500-103623-4	VAP-HPT10(22-25)-110515	Dissolved	Water	7470A	312017
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	7470A	312017
500-103623-5	VAP-HPT12(8-11)-110515	Dissolved	Water	7470A	312017
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	7470A	312017
500-103623-6	VAP-HPT13(8-11)-110515	Dissolved	Water	7470A	312017
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	7470A	312017
LCS 500-312017/13-A	Lab Control Sample	Total/NA	Water	7470A	312017
MB 500-312017/12-A	Method Blank	Total/NA	Water	7470A	312017

Analysis Batch: 312240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	6010C	311711
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	6010C	311711
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	6010C	311711
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	6010C	311711
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	6010C	311711
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	6010C	311711
LCS 500-311711/2-A	Lab Control Sample	Total/NA	Water	6010C	311711
MB 500-311711/1-A	Method Blank	Total/NA	Water	6010C	311711

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Prep Batch: 312341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Dissolved	Water	3010A	
500-103623-2	VAP-HPT11(24-27)-110415	Dissolved	Water	3010A	
500-103623-3	VAP-HPT10(10-13)-110515	Dissolved	Water	3010A	
500-103623-4	VAP-HPT10(22-25)-110515	Dissolved	Water	3010A	
500-103623-5	VAP-HPT12(8-11)-110515	Dissolved	Water	3010A	
500-103623-6	VAP-HPT13(8-11)-110515	Dissolved	Water	3010A	
LCS 500-312341/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-312341/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 312342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Dissolved	Water	6010C	311859
500-103623-2	VAP-HPT11(24-27)-110415	Dissolved	Water	6010C	311859
500-103623-3	VAP-HPT10(10-13)-110515	Dissolved	Water	6010C	311859
500-103623-4	VAP-HPT10(22-25)-110515	Dissolved	Water	6010C	311859
500-103623-5	VAP-HPT12(8-11)-110515	Dissolved	Water	6010C	311859
500-103623-6	VAP-HPT13(8-11)-110515	Dissolved	Water	6010C	311859
LCS 500-311859/2-A	Lab Control Sample	Total/NA	Water	6010C	311859
MB 500-311709/1-D	Method Blank	Dissolved	Water	6010C	311859

Analysis Batch: 312534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Dissolved	Water	6010C	312341
500-103623-2	VAP-HPT11(24-27)-110415	Dissolved	Water	6010C	312341
500-103623-3	VAP-HPT10(10-13)-110515	Dissolved	Water	6010C	312341
500-103623-4	VAP-HPT10(22-25)-110515	Dissolved	Water	6010C	312341
500-103623-5	VAP-HPT12(8-11)-110515	Dissolved	Water	6010C	312341
500-103623-6	VAP-HPT13(8-11)-110515	Dissolved	Water	6010C	312341
LCS 500-312341/2-A	Lab Control Sample	Total/NA	Water	6010C	312341
MB 500-312341/1-A	Method Blank	Total/NA	Water	6010C	312341

Analysis Batch: 312672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	6010C	311711
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	6010C	311711
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	6010C	311711
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	6010C	311711
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	6010C	311711
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	6010C	311711
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	6010C	311711
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	6010C	311711
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	6010C	311711
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	6010C	311711
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	6010C	311711
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	6010C	311711
LCS 500-311711/2-A	Lab Control Sample	Total/NA	Water	6010C	311711
MB 500-311711/1-A	Method Blank	Total/NA	Water	6010C	311711

Prep Batch: 312728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	3010A	
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	3010A	
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 312728 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	3010A	
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	3010A	
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	3010A	
LCS 500-312728/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-312728/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 312951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	6010C	312728
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	6010C	312728
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	6010C	312728
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	6010C	312728
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	6010C	312728
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	6010C	312728
LCS 500-312728/2-A	Lab Control Sample	Total/NA	Water	6010C	312728
MB 500-312728/1-A	Method Blank	Total/NA	Water	6010C	312728

Analysis Batch: 312971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	6010C	311711
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	6010C	311711
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	6010C	311711
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	6010C	311711
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	6010C	311711
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	6010C	311711
LCS 500-311711/2-A	Lab Control Sample	Total/NA	Water	6010C	311711
MB 500-311711/1-A	Method Blank	Total/NA	Water	6010C	311711

General Chemistry

Prep Batch: 312751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	SM 4500 NH3 B	
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	SM 4500 NH3 B	
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	SM 4500 NH3 B	
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	SM 4500 NH3 B	
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	SM 4500 NH3 B	
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	SM 4500 NH3 B	
LCS 500-312751/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-312751/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 312922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103623-1	VAP-HPT11(19-22)-110415	Total/NA	Water	SM 4500 NH3 G	312751
500-103623-2	VAP-HPT11(24-27)-110415	Total/NA	Water	SM 4500 NH3 G	312751
500-103623-3	VAP-HPT10(10-13)-110515	Total/NA	Water	SM 4500 NH3 G	312751
500-103623-4	VAP-HPT10(22-25)-110515	Total/NA	Water	SM 4500 NH3 G	312751
500-103623-5	VAP-HPT12(8-11)-110515	Total/NA	Water	SM 4500 NH3 G	312751
500-103623-6	VAP-HPT13(8-11)-110515	Total/NA	Water	SM 4500 NH3 G	312751
LCS 500-312751/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	312751

General Chemistry (Continued)

Analysis Batch: 312922 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-312751/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	312751

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(75-120)	(75-120)	(75-125)	(75-120)
500-103623-1 - DL	VAP-HPT11(19-22)-110415	110	85	105	120
500-103623-1	VAP-HPT11(19-22)-110415	91	90	92	91
500-103623-2	VAP-HPT11(24-27)-110415	129 X	91	93	93
500-103623-2 - DL	VAP-HPT11(24-27)-110415	92	91	91	89
500-103623-3	VAP-HPT10(10-13)-110515	90	91	92	90
500-103623-4	VAP-HPT10(22-25)-110515	89	90	91	91
500-103623-5	VAP-HPT12(8-11)-110515	89	88	91	91
500-103623-6	VAP-HPT13(8-11)-110515	89	93	92	91
500-103623-6 - DL	VAP-HPT13(8-11)-110515	90	91	93	88
500-103623-7	Trip Blank	91	92	94	89
LCS 500-312899/4	Lab Control Sample	109	99	103	105
LCS 500-313020/4	Lab Control Sample	93	91	91	91
MB 500-312899/6	Method Blank	97	95	108	106
MB 500-313020/6	Method Blank	94	92	93	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-312899/6
Matrix: Water
Analysis Batch: 312899

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/17/15 00:38	1
Benzene	<0.50		0.50	0.15	ug/L			11/17/15 00:38	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 00:38	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 00:38	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 00:38	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 00:38	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 00:38	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/17/15 00:38	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 00:38	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 00:38	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 00:38	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/17/15 00:38	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 00:38	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 00:38	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 00:38	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 00:38	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 00:38	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 00:38	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 00:38	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/17/15 00:38	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 00:38	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 00:38	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 00:38	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 00:38	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 00:38	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/17/15 00:38	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 00:38	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/17/15 00:38	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 00:38	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/17/15 00:38	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 00:38	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 00:38	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/17/15 00:38	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 00:38	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 00:38	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 00:38	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 00:38	1
Toluene	<0.50		0.50	0.15	ug/L			11/17/15 00:38	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 00:38	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 00:38	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 00:38	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 00:38	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 00:38	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 00:38	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 00:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 00:38	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/17/15 00:38	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/17/15 00:38	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		75 - 120		11/17/15 00:38	1
Dibromofluoromethane	95		75 - 120		11/17/15 00:38	1
1,2-Dichloroethane-d4 (Surr)	108		75 - 125		11/17/15 00:38	1
Toluene-d8 (Surr)	106		75 - 120		11/17/15 00:38	1

Lab Sample ID: LCS 500-312899/4
Matrix: Water
Analysis Batch: 312899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	52.2		ug/L		104	47 - 131
Benzene	50.0	49.1		ug/L		98	70 - 120
Bromodichloromethane	50.0	47.0		ug/L		94	70 - 127
Bromoform	50.0	39.5		ug/L		79	70 - 135
Bromomethane	50.0	41.6		ug/L		83	30 - 170
Carbon disulfide	50.0	44.8		ug/L		90	61 - 120
Carbon tetrachloride	50.0	39.0		ug/L		78	70 - 136
Chlorobenzene	50.0	50.7		ug/L		101	70 - 120
Chloroethane	50.0	42.6		ug/L		85	40 - 150
Chloroform	50.0	48.9		ug/L		98	70 - 120
Chloromethane	50.0	51.0		ug/L		102	45 - 140
cis-1,2-Dichloroethene	50.0	47.4		ug/L		95	70 - 120
cis-1,3-Dichloropropene	50.0	57.4		ug/L		115	70 - 122
Cyclohexane	50.0	54.0		ug/L		108	60 - 133
Dibromochloromethane	50.0	46.8		ug/L		94	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	55.9		ug/L		112	59 - 139
1,2-Dibromoethane	50.0	52.6		ug/L		105	70 - 124
1,2-Dichlorobenzene	50.0	50.3		ug/L		101	70 - 123
1,3-Dichlorobenzene	50.0	49.0		ug/L		98	70 - 122
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	70 - 120
Dichlorodifluoromethane	50.0	39.2		ug/L		78	30 - 150
1,1-Dichloroethane	50.0	53.1		ug/L		106	70 - 127
1,2-Dichloroethane	50.0	50.5		ug/L		101	66 - 132
1,1-Dichloroethene	50.0	40.7		ug/L		81	68 - 121
1,2-Dichloropropane	50.0	56.5		ug/L		113	70 - 127
Ethylbenzene	50.0	47.7		ug/L		95	70 - 125
2-Hexanone	50.0	62.8		ug/L		126	53 - 140
Isopropylbenzene	50.0	51.7		ug/L		103	70 - 132
Methyl acetate	250	314		ug/L		126	56 - 131
Methylcyclohexane	50.0	47.1		ug/L		94	60 - 140
Methylene Chloride	50.0	45.0		ug/L		90	70 - 120
Methyl Ethyl Ketone	50.0	59.1		ug/L		118	51 - 134
methyl isobutyl ketone	50.0	64.4		ug/L		129	53 - 135
Methyl tert-butyl ether	50.0	47.3		ug/L		95	65 - 120
Styrene	50.0	49.1		ug/L		98	70 - 120
1,1,2,2-Tetrachloroethane	50.0	62.1		ug/L		124	68 - 133
Tetrachloroethene	50.0	39.3		ug/L		79	70 - 129
Toluene	50.0	49.4		ug/L		99	70 - 120
trans-1,2-Dichloroethene	50.0	41.6		ug/L		83	70 - 120
trans-1,3-Dichloropropene	50.0	56.4		ug/L		113	70 - 123
1,2,4-Trichlorobenzene	50.0	48.5		ug/L		97	70 - 125
1,1,1-Trichloroethane	50.0	40.4		ug/L		81	70 - 125
1,1,2-Trichloroethane	50.0	51.5		ug/L		103	70 - 125
Trichloroethene	50.0	43.9		ug/L		88	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-312899/4
Matrix: Water
Analysis Batch: 312899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	37.0		ug/L		74	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	40.2		ug/L		80	64 - 120
Vinyl chloride	50.0	50.6		ug/L		101	63 - 127
Xylenes, Total	100	99.8		ug/L		100	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*75 - 120*
Dibromofluoromethane	*99*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*
Toluene-d8 (Surr)	*105*		*75 - 120*

Lab Sample ID: MB 500-313020/6
Matrix: Water
Analysis Batch: 313020

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/17/15 22:17	1
Benzene	<0.50		0.50	0.15	ug/L			11/17/15 22:17	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/17/15 22:17	1
Bromoform	<1.0		1.0	0.48	ug/L			11/17/15 22:17	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/17/15 22:17	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/17/15 22:17	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/17/15 22:17	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/17/15 22:17	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/17/15 22:17	1
Chloroform	<1.0		1.0	0.37	ug/L			11/17/15 22:17	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/17/15 22:17	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/17/15 22:17	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/17/15 22:17	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/17/15 22:17	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/17/15 22:17	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/17/15 22:17	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/17/15 22:17	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/17/15 22:17	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/17/15 22:17	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/17/15 22:17	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/17/15 22:17	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/17/15 22:17	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/17/15 22:17	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/17/15 22:17	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/17/15 22:17	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/17/15 22:17	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/17/15 22:17	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/17/15 22:17	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/17/15 22:17	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/17/15 22:17	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/17/15 22:17	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-313020/6
Matrix: Water
Analysis Batch: 313020

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/17/15 22:17	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/17/15 22:17	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/17/15 22:17	1
Styrene	<1.0		1.0	0.39	ug/L			11/17/15 22:17	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/17/15 22:17	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/17/15 22:17	1
Toluene	<0.50		0.50	0.15	ug/L			11/17/15 22:17	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/17/15 22:17	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/17/15 22:17	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/17/15 22:17	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/17/15 22:17	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/17/15 22:17	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/17/15 22:17	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/17/15 22:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/17/15 22:17	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/17/15 22:17	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/17/15 22:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*11/17/15 22:17*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*11/17/15 22:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 125*		*11/17/15 22:17*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*11/17/15 22:17*	*1*

Lab Sample ID: LCS 500-313020/4
Matrix: Water
Analysis Batch: 313020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	45.7		ug/L		91	47 - 131
Benzene	50.0	43.6		ug/L		87	70 - 120
Bromodichloromethane	50.0	43.6		ug/L		87	70 - 127
Bromoform	50.0	42.7		ug/L		85	70 - 135
Bromomethane	50.0	52.1		ug/L		104	30 - 170
Carbon disulfide	50.0	42.7		ug/L		85	61 - 120
Carbon tetrachloride	50.0	44.1		ug/L		88	70 - 136
Chlorobenzene	50.0	45.1		ug/L		90	70 - 120
Chloroethane	50.0	39.6		ug/L		79	40 - 150
Chloroform	50.0	44.9		ug/L		90	70 - 120
Chloromethane	50.0	44.7		ug/L		89	45 - 140
cis-1,2-Dichloroethene	50.0	45.5		ug/L		91	70 - 120
cis-1,3-Dichloropropene	50.0	43.1		ug/L		86	70 - 122
Cyclohexane	50.0	42.2		ug/L		84	60 - 133
Dibromochloromethane	50.0	43.7		ug/L		87	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	37.0		ug/L		74	59 - 139
1,2-Dibromoethane	50.0	44.4		ug/L		89	70 - 124
1,2-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 123
1,3-Dichlorobenzene	50.0	44.5		ug/L		89	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-313020/4
Matrix: Water
Analysis Batch: 313020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	44.6		ug/L		89	70 - 120
Dichlorodifluoromethane	50.0	46.3		ug/L		93	30 - 150
1,1-Dichloroethane	50.0	43.7		ug/L		87	70 - 127
1,2-Dichloroethane	50.0	45.9		ug/L		92	66 - 132
1,1-Dichloroethene	50.0	45.1		ug/L		90	68 - 121
1,2-Dichloropropane	50.0	43.9		ug/L		88	70 - 127
Ethylbenzene	50.0	42.2		ug/L		84	70 - 125
2-Hexanone	50.0	44.9		ug/L		90	53 - 140
Isopropylbenzene	50.0	43.7		ug/L		87	70 - 132
Methyl acetate	250	220		ug/L		88	56 - 131
Methylcyclohexane	50.0	43.8		ug/L		88	60 - 140
Methylene Chloride	50.0	41.7		ug/L		83	70 - 120
Methyl Ethyl Ketone	50.0	46.2		ug/L		92	51 - 134
methyl isobutyl ketone	50.0	43.1		ug/L		86	53 - 135
Methyl tert-butyl ether	50.0	45.1		ug/L		90	65 - 120
Styrene	50.0	44.2		ug/L		88	70 - 120
1,1,2,2-Tetrachloroethane	50.0	43.8		ug/L		88	68 - 133
Tetrachloroethene	50.0	45.6		ug/L		91	70 - 129
Toluene	50.0	43.5		ug/L		87	70 - 120
trans-1,2-Dichloroethene	50.0	45.1		ug/L		90	70 - 120
trans-1,3-Dichloropropene	50.0	43.5		ug/L		87	70 - 123
1,2,4-Trichlorobenzene	50.0	42.3		ug/L		85	70 - 125
1,1,1-Trichloroethane	50.0	44.1		ug/L		88	70 - 125
1,1,2-Trichloroethane	50.0	46.1		ug/L		92	70 - 125
Trichloroethene	50.0	46.2		ug/L		92	70 - 122
Trichlorofluoromethane	50.0	45.2		ug/L		90	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	45.2		ug/L		90	64 - 120
Vinyl chloride	50.0	46.2		ug/L		92	63 - 127
Xylenes, Total	100	85.0		ug/L		85	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*
Dibromofluoromethane	*91*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 125*
Toluene-d8 (Surr)	*91*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-311711/1-A
Matrix: Water
Analysis Batch: 312240

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311711

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		11/09/15 12:15	11/11/15 02:22	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:22	1
Barium	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:22	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/09/15 12:15	11/11/15 02:22	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-311711/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312240 — **Prep Batch: 311711**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/09/15 12:15	11/11/15 02:22	1
Chromium	<0.010		0.010	0.0024	mg/L		11/09/15 12:15	11/11/15 02:22	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/09/15 12:15	11/11/15 02:22	1
Copper	<0.010		0.010	0.0022	mg/L		11/09/15 12:15	11/11/15 02:22	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/09/15 12:15	11/11/15 02:22	1
Manganese	0.00922	J	0.010	0.0034	mg/L		11/09/15 12:15	11/11/15 02:22	1
Nickel	<0.010		0.010	0.0031	mg/L		11/09/15 12:15	11/11/15 02:22	1
Potassium	<0.50		0.50	0.16	mg/L		11/09/15 12:15	11/11/15 02:22	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/09/15 12:15	11/11/15 02:22	1
Thallium	<0.010		0.010	0.0028	mg/L		11/09/15 12:15	11/11/15 02:22	1

Lab Sample ID: MB 500-311711/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312672 — **Prep Batch: 311711**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/09/15 12:15	11/13/15 19:10	1
Calcium	<0.20		0.20	0.059	mg/L		11/09/15 12:15	11/13/15 19:10	1
Iron	<0.20		0.20	0.10	mg/L		11/09/15 12:15	11/13/15 19:10	1
Magnesium	<0.10		0.10	0.034	mg/L		11/09/15 12:15	11/13/15 19:10	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/09/15 12:15	11/13/15 19:10	1

Lab Sample ID: MB 500-311711/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312971 — **Prep Batch: 311711**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0046	mg/L		11/09/15 12:15	11/16/15 16:55	1

Lab Sample ID: LCS 500-311711/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312240 — **Prep Batch: 311711**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.492		mg/L		98	80 - 120
Arsenic	0.100	0.100		mg/L		100	80 - 120
Barium	2.00	1.94		mg/L		97	80 - 120
Beryllium	0.0500	0.0484		mg/L		97	80 - 120
Cadmium	0.0500	0.0480		mg/L		96	80 - 120
Chromium	0.200	0.196		mg/L		98	80 - 120
Cobalt	0.500	0.496		mg/L		99	80 - 120
Copper	0.250	0.247		mg/L		99	80 - 120
Lead	0.100	0.0981		mg/L		98	80 - 120
Manganese	0.500	0.483		mg/L		97	80 - 120
Nickel	0.500	0.490		mg/L		98	80 - 120
Potassium	10.0	9.61		mg/L		96	80 - 120
Silver	0.0500	0.0462		mg/L		92	80 - 120
Thallium	0.100	0.0935		mg/L		93	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-311711/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312672 — **Prep Batch: 311711**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.86		mg/L		93	80 - 120
Calcium	10.0	9.95		mg/L		99	80 - 120
Iron	1.00	0.962		mg/L		96	80 - 120
Magnesium	10.0	9.78		mg/L		98	80 - 120
Vanadium	0.500	0.516		mg/L		103	80 - 120

Lab Sample ID: LCS 500-311711/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312971 — **Prep Batch: 311711**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.100	0.0963		mg/L		96	80 - 120

Lab Sample ID: LCS 500-311859/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312128 — **Prep Batch: 311859**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.99		mg/L		100	80 - 120
Antimony	0.500	0.473		mg/L		95	80 - 120
Arsenic	0.100	0.0961		mg/L		96	80 - 120
Barium	2.00	2.06		mg/L		103	80 - 120
Beryllium	0.0500	0.0508		mg/L		102	80 - 120
Cadmium	0.0500	0.0482		mg/L		96	80 - 120
Calcium	10.0	10.1		mg/L		101	80 - 120
Chromium	0.200	0.195		mg/L		97	80 - 120
Cobalt	0.500	0.493		mg/L		99	80 - 120
Copper	0.250	0.241		mg/L		96	80 - 120
Iron	1.00	1.12		mg/L		112	80 - 120
Lead	0.100	0.0993	^	mg/L		99	80 - 120
Magnesium	10.0	9.85		mg/L		99	80 - 120
Manganese	0.500	0.507		mg/L		101	80 - 120
Nickel	0.500	0.496		mg/L		99	80 - 120
Potassium	10.0	10.2		mg/L		102	80 - 120
Selenium	0.100	0.0865		mg/L		87	80 - 120
Silver	0.0500	0.0492		mg/L		98	80 - 120
Thallium	0.100	0.0933		mg/L		93	80 - 120
Vanadium	0.500	0.515		mg/L		103	80 - 120

Lab Sample ID: LCS 500-311859/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312342 — **Prep Batch: 311859**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10.0	10.5		mg/L		105	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-312341/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312534 — **Prep Batch: 312341**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.020		0.020	0.0090	mg/L		11/12/15 09:10	11/13/15 03:20	1

Lab Sample ID: LCS 500-312341/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312534 — **Prep Batch: 312341**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	0.500	0.491		mg/L		98	80 - 120

Lab Sample ID: MB 500-312728/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312951 — **Prep Batch: 312728**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.020		0.020	0.0090	mg/L		11/15/15 19:25	11/16/15 17:57	1

Lab Sample ID: LCS 500-312728/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312951 — **Prep Batch: 312728**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	0.500	0.500		mg/L		100	80 - 120

Lab Sample ID: MB 500-311709/1-D — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 312128 — **Prep Batch: 311859**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/10/15 09:10	11/10/15 20:26	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 09:10	11/10/15 20:26	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:26	1
Barium	<0.010		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 09:10	11/10/15 20:26	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 09:10	11/10/15 20:26	1
Calcium	<0.20		0.20	0.059	mg/L		11/10/15 09:10	11/10/15 20:26	1
Chromium	<0.010		0.010	0.0024	mg/L		11/10/15 09:10	11/10/15 20:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/10/15 09:10	11/10/15 20:26	1
Copper	<0.010		0.010	0.0022	mg/L		11/10/15 09:10	11/10/15 20:26	1
Iron	<0.20		0.20	0.10	mg/L		11/10/15 09:10	11/10/15 20:26	1
Lead	<0.0050	^	0.0050	0.0024	mg/L		11/10/15 09:10	11/10/15 20:26	1
Magnesium	<0.10		0.10	0.034	mg/L		11/10/15 09:10	11/10/15 20:26	1
Manganese	<0.010		0.010	0.0034	mg/L		11/10/15 09:10	11/10/15 20:26	1
Nickel	<0.010		0.010	0.0031	mg/L		11/10/15 09:10	11/10/15 20:26	1
Potassium	<0.50		0.50	0.16	mg/L		11/10/15 09:10	11/10/15 20:26	1
Selenium	<0.010		0.010	0.0046	mg/L		11/10/15 09:10	11/10/15 20:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 09:10	11/10/15 20:26	1
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 09:10	11/10/15 20:26	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/10/15 09:10	11/10/15 20:26	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-311709/1-D — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 312342 — **Prep Batch: 311859**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	<1.0		1.0	0.43	mg/L		11/10/15 09:10	11/11/15 19:46	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-312017/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312198 — **Prep Batch: 312017**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/10/15 16:45	11/11/15 11:09	1

Lab Sample ID: LCS 500-312017/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312198 — **Prep Batch: 312017**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00199		mg/L		100	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-312751/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312922 — **Prep Batch: 312751**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0450	J	0.20	0.043	mg/L		11/16/15 16:40	11/16/15 19:10	1

Lab Sample ID: LCS 500-312751/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312922 — **Prep Batch: 312751**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.46		mg/L		99	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(19-22)-110415

Lab Sample ID: 500-103623-1
Date Collected: 11/04/15 14:50
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	5	312899	11/17/15 07:46	PMF	TAL CHI
Total/NA	Analysis	8260B		1	313020	11/18/15 04:49	TCT	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312128	11/10/15 20:35	KML	TAL CHI
Dissolved	Prep	3010A			312341	11/12/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312534	11/13/15 08:30	PJ1	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		100	312342	11/11/15 20:38	PJ1	TAL CHI
Total/NA	Prep	3010A			312728	11/15/15 19:25	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312951	11/16/15 19:46	PJ1	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312240	11/11/15 02:47	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312672	11/13/15 19:49	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312672	11/13/15 22:06	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312971	11/16/15 17:04	PJ1	TAL CHI
Dissolved	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312198	11/11/15 11:15	MJD	TAL CHI
Total/NA	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312198	11/11/15 11:13	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312751	11/16/15 16:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312922	11/16/15 19:27	HMW	TAL CHI

Client Sample ID: VAP-HPT11(24-27)-110415

Lab Sample ID: 500-103623-2
Date Collected: 11/04/15 15:35
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	313020	11/18/15 03:57	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	20	313020	11/18/15 04:23	TCT	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312128	11/10/15 20:40	KML	TAL CHI
Dissolved	Prep	3010A			312341	11/12/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312534	11/13/15 08:35	PJ1	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		100	312342	11/11/15 20:50	PJ1	TAL CHI
Total/NA	Prep	3010A			312728	11/15/15 19:25	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312951	11/16/15 19:52	PJ1	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312240	11/11/15 02:52	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT11(24-27)-110415

Lab Sample ID: 500-103623-2

Date Collected: 11/04/15 15:35
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		10	312672	11/13/15 20:01	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312672	11/13/15 22:11	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312971	11/16/15 17:09	PJ1	TAL CHI
Dissolved	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312198	11/11/15 11:19	MJD	TAL CHI
Total/NA	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312198	11/11/15 11:17	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312751	11/16/15 16:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312922	11/16/15 21:08	HMW	TAL CHI

Client Sample ID: VAP-HPT10(10-13)-110515

Lab Sample ID: 500-103623-3

Date Collected: 11/05/15 09:00
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313020	11/18/15 01:46	TCT	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312128	11/10/15 20:45	KML	TAL CHI
Dissolved	Prep	3010A			312341	11/12/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312534	11/13/15 08:40	PJ1	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		100	312342	11/11/15 20:54	PJ1	TAL CHI
Total/NA	Prep	3010A			312728	11/15/15 19:25	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312951	11/16/15 19:57	PJ1	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312240	11/11/15 02:57	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312672	11/13/15 20:06	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312672	11/13/15 22:17	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312971	11/16/15 17:14	PJ1	TAL CHI
Dissolved	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312198	11/11/15 11:23	MJD	TAL CHI
Total/NA	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312198	11/11/15 11:21	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312751	11/16/15 16:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	312922	11/16/15 19:33	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT10(22-25)-110515

Lab Sample ID: 500-103623-4

Date Collected: 11/05/15 10:25
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313020	11/18/15 02:13	TCT	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312128	11/10/15 20:59	KML	TAL CHI
Dissolved	Prep	3010A			312341	11/12/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312534	11/13/15 08:46	PJ1	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		100	312342	11/11/15 20:58	PJ1	TAL CHI
Total/NA	Prep	3010A			312728	11/15/15 19:25	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312951	11/16/15 20:02	PJ1	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312240	11/11/15 03:02	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312672	11/13/15 20:11	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312672	11/13/15 22:22	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312971	11/16/15 17:19	PJ1	TAL CHI
Dissolved	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312198	11/11/15 11:27	MJD	TAL CHI
Total/NA	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312198	11/11/15 11:25	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312751	11/16/15 16:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312922	11/16/15 19:36	HMW	TAL CHI

Client Sample ID: VAP-HPT12(8-11)-110515

Lab Sample ID: 500-103623-5

Date Collected: 11/05/15 13:06
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313020	11/18/15 02:39	TCT	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312128	11/10/15 21:04	KML	TAL CHI
Dissolved	Prep	3010A			312341	11/12/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312534	11/13/15 08:51	PJ1	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		100	312342	11/11/15 21:02	PJ1	TAL CHI
Total/NA	Prep	3010A			312728	11/15/15 19:25	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312951	11/16/15 20:07	PJ1	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312240	11/11/15 03:07	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312672	11/13/15 20:17	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: VAP-HPT12(8-11)-110515

Lab Sample ID: 500-103623-5
Date Collected: 11/05/15 13:06
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	312672	11/13/15 22:27	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312971	11/16/15 17:24	PJ1	TAL CHI
Dissolved	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312198	11/11/15 11:35	MJD	TAL CHI
Total/NA	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312198	11/11/15 11:33	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312751	11/16/15 16:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	312922	11/16/15 21:11	HMW	TAL CHI

Client Sample ID: VAP-HPT13(8-11)-110515

Lab Sample ID: 500-103623-6
Date Collected: 11/05/15 13:50
Matrix: Water
Date Received: 11/05/15 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313020	11/18/15 03:05	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	10	313020	11/18/15 03:31	TCT	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312128	11/10/15 21:09	KML	TAL CHI
Dissolved	Prep	3010A			312341	11/12/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312534	11/13/15 08:56	PJ1	TAL CHI
Dissolved	Prep	3010A			311859	11/10/15 09:10	PFK	TAL CHI
Dissolved	Analysis	6010C		100	312342	11/11/15 21:07	PJ1	TAL CHI
Total/NA	Prep	3010A			312728	11/15/15 19:25	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312951	11/16/15 20:12	PJ1	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312240	11/11/15 03:13	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312672	11/13/15 20:22	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312672	11/13/15 22:32	KML	TAL CHI
Total/NA	Prep	3010A			311711	11/09/15 12:15	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312971	11/16/15 17:30	PJ1	TAL CHI
Dissolved	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312198	11/11/15 11:38	MJD	TAL CHI
Total/NA	Prep	7470A			312017	11/10/15 16:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312198	11/11/15 11:37	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312751	11/16/15 16:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	312922	11/16/15 19:47	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Client Sample ID: Trip Blank

Date Collected: 11/04/15 00:00
Date Received: 11/05/15 15:00

Lab Sample ID: 500-103623-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313020	11/17/15 22:43	TCT	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103623-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-103623 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address:
Address:
Phone: 312-575-3721
Fax:
E-Mail:

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103623
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 3.3

Client: Arcadis
Client Project #: CI001805.0002.0003
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Bruce Evans
Lab PM:

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOC (Preservative 1)	Ammonia (Preservative 2)	Metals (Total) (Preservative 3)	Metals (Filtered) (Preservative 3)						Comments
1		VAP-HPT11 (19-22)-110415	11-4-15	1450	6	W	3	1	1	1						
2		VAP-HPT11 (24-27)-110415	11-4-15	1535	6	W	3	1	1	1						
3		VAP-HPT10 (10-13)-110515	11/5/15	09:00	6	W	3	1	1	1						
4		VAP-HPT10 (22-25)-110515	11/5/15	10:25	6	W	3	1	1	1						
5		VAP-HPT12 (8-11)-110515	11/5/15	13:06	6	W	3	1	1	1						
6		VAP-HPT13 (8-11)-110515	11/5/15	13:50	6	W	3	1	1	1						
7		Trip Blank														Added by TA

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	11-5-15	14:15	[signature]	TA	11-5-15	14:15
[signature]	TA	11-5-15	15:00	[signature]	TA-CHI	11/5/15	1500

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
1 cooler / 3 samples on Ice
Questions call Jack Kratzmeyer
312-575-3721

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-103623-1

Login Number: 103623
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-103708-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
11/20/2015 11:09:56 AM

Bonnie Stadelmann, Senior Project Manager
(708)534-5200
bonnie.stadelmann@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-103708-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-103708-1

Comments
No additional comments.

Receipt
The samples were received on 11/6/2015 5:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4º C.

GC/MS VOA
Method(s) 8260B: The following samples were diluted to bring the concentration of target analytes within the calibration range: VAP-HPT13(13-16)-110515 (500-103708-1), VAP-HPT13(19-22)-110615 (500-103708-2) and VAP-HPT13(24-27)-110615 (500-103708-3). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: VAP-HPT13(13-16)-110515 (500-103708-1), VAP-HPT13(19-22)-110615 (500-103708-2), VAP-HPT13(24-27)-110615 (500-103708-3), VAP-HPT14(10-13)-110615 (500-103708-4), VAP-HPT14(14-17)-110615 (500-103708-5), VAP-HPT14(20-22)-110615 (500-103708-6), VAP-HPT15(10-13)-110615 (500-103708-7) and VAP-HPT15(15-18)-110615 (500-103708-8).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6010C: The low-level CCV at line 83 in 6010C batch 500-312673 was above the method acceptance limits of 70-130% recovery for Iron. The samples VAP-HPT13(13-16)-110515 (500-103708-1), VAP-HPT13(19-22)-110615 (500-103708-2), VAP-HPT13(24-27) -110615 (500-103708-3), VAP-HPT14(10-13)-110615 (500-103708-4), VAP-HPT14(14-17)-110615 (500-103708-5), VAP-HPT14(20-22) -110615 (500-103708-6), VAP-HPT15(10-13)-110615 (500-103708-7) and VAP-HPT15(15-18)-110615 (500-103708-8) were bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

Method(s) 6010C: The following sample was diluted due to the abundance of non-target analytes: VAP-HPT15(10-13)-110615 (500-103708-7). Elevated reporting limits (RLs) are provided.

Method(s) 245.1, 7470A: The continuing calibration verification (CCV) associated with batch 500-312422 recovered above the upper control limit for Hg. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 500-312422/119).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515 — Lab Sample ID: 500-103708-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	34		10	3.5	ug/L	2		8260B	Total/NA
Benzene	20		1.0	0.29	ug/L	2		8260B	Total/NA
Chlorobenzene	3.3		2.0	0.77	ug/L	2		8260B	Total/NA
cis-1,2-Dichloroethene	4.0		2.0	0.82	ug/L	2		8260B	Total/NA
1,4-Dichlorobenzene	28		2.0	0.73	ug/L	2		8260B	Total/NA
Ethylbenzene	270		1.0	0.37	ug/L	2		8260B	Total/NA
Isopropylbenzene	14		2.0	0.77	ug/L	2		8260B	Total/NA
Methylcyclohexane	2.1		2.0	0.63	ug/L	2		8260B	Total/NA
methyl isobutyl ketone	41		10	4.3	ug/L	2		8260B	Total/NA
Toluene	300		1.0	0.30	ug/L	2		8260B	Total/NA
Vinyl chloride	4.0		1.0	0.41	ug/L	2		8260B	Total/NA
Xylenes, Total - DL	940		20	4.4	ug/L	20		8260B	Total/NA
Aluminum	2.4		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0098	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.043		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.34		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0065		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	11		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.30		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.048		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.071		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	11	^	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.57		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	22		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.064		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.20		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	580		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.016		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0026	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3600		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.041		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.0		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	1.0		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.027		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.28		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0037		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	12	B	0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.32		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.058		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.020		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	5.5		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.078		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	25		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.025		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.22		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	680		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.012		0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	3900		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.040		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.24		0.020	0.0090	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515 (Continued) — Lab Sample ID: 500-103708-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.00061		0.00020	0.000061	mg/L	1		7470A	Total/NA
Mercury	0.00013	J	0.00020	0.000061	mg/L	1		7470A	Dissolved
Ammonia	810	B	40	8.6	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT13(19-22)-110615 — Lab Sample ID: 500-103708-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	30		25	8.7	ug/L	5		8260B	Total/NA
Benzene	16		2.5	0.73	ug/L	5		8260B	Total/NA
1,4-Dichlorobenzene	15		5.0	1.8	ug/L	5		8260B	Total/NA
Ethylbenzene	390		2.5	0.92	ug/L	5		8260B	Total/NA
Isopropylbenzene	17		5.0	1.9	ug/L	5		8260B	Total/NA
methyl isobutyl ketone	29		25	11	ug/L	5		8260B	Total/NA
Toluene	250		2.5	0.76	ug/L	5		8260B	Total/NA
Vinyl chloride	2.9		2.5	1.0	ug/L	5		8260B	Total/NA
Xylenes, Total - DL	1800		50	11	ug/L	50		8260B	Total/NA
Aluminum	15		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.012	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.071		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	1.0		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0015	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.014		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	42		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.72		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.070		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.92		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	45	^	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	1.1		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	25		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.45		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.29		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	640		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.025		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.013		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3600		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.074		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	2.3		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.78		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.034		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.37		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0026		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	11	B	0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.43		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.060		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.019		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	8.6		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.022		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	17		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.068		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.23		0.010	0.0031	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(19-22)-110615 (Continued) — Lab Sample ID: 500-103708-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	650		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0075	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	4000		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.045		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.29		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.0021		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	870	B	40	8.6	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT13(24-27)-110615 — Lab Sample ID: 500-103708-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	15		10	3.5	ug/L	2		8260B	Total/NA
Benzene	22		1.0	0.29	ug/L	2		8260B	Total/NA
Chlorobenzene	3.3		2.0	0.77	ug/L	2		8260B	Total/NA
1,2-Dichlorobenzene	14		2.0	0.67	ug/L	2		8260B	Total/NA
1,4-Dichlorobenzene	7.9		2.0	0.73	ug/L	2		8260B	Total/NA
Ethylbenzene	220		1.0	0.37	ug/L	2		8260B	Total/NA
Isopropylbenzene	7.7		2.0	0.77	ug/L	2		8260B	Total/NA
Toluene	57		1.0	0.30	ug/L	2		8260B	Total/NA
Vinyl chloride	0.64	J	1.0	0.41	ug/L	2		8260B	Total/NA
Xylenes, Total - DL	930		20	4.4	ug/L	20		8260B	Total/NA
Aluminum	33		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.021		0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.097		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.86		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0016	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.017		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	160		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.57		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.069		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	1.3		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	250	^	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	3.0		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	65		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.7		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.36		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	310		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.015		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.15		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	2100		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.069		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	3.9		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.11	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.013		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.12		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0019	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	11	B	0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.14		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.032		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0066	J	0.010	0.0022	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615 (Continued) — Lab Sample ID: 500-103708-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	3.8		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	34		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.032		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.11		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	370		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	2500		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.019		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.016	J	0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00074		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	530	B	40	8.6	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT14(10-13)-110615 — Lab Sample ID: 500-103708-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.5		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	20		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.1		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	4.4		1.0	0.49	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.4		1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	42		0.50	0.18	ug/L	1		8260B	Total/NA
Methylcyclohexane	3.0		1.0	0.32	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.70	J	1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	12		0.50	0.15	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.69	J	1.0	0.35	ug/L	1		8260B	Total/NA
Trichloroethene	0.31	J	0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.80		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	220		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	5.2		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.025		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.19		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0010	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0030		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	36		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.11		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.022		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.13		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	26	^	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.42		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	49		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.72		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.088		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	320		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.010		0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	1900		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.032		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.40		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.10	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0086	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.14		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0022		0.0020	0.00094	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(10-13)-110615 (Continued) — Lab Sample ID: 500-103708-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	19	B	0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.093		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.024		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0068	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	3.2		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0057		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	51		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.068		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.072		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	370		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	2300		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.018		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.019	J	0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00024		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	500	B	40	8.6	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT14(14-17)-110615 — Lab Sample ID: 500-103708-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	17		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	17		0.50	0.15	ug/L	1		8260B	Total/NA
Cyclohexane	3.5		1.0	0.49	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.5		1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	14		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	2.2		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	3.1		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	10		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	87		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	4.4		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.042		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.17		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0042		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	39		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.13		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.025		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.17		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	38	^	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.35		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	47		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.73		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.12		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	330		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.014		0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	1800		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.046		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.83		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.16	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.020		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.12		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0021		0.0020	0.00094	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615 (Continued) — Lab Sample ID: 500-103708-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	17	B	0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.091		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.026		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0077	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	4.2		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0074		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	50		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.048		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.088		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	390		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	2600		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.036		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.030		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00035		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	520	B	40	8.6	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT14(20-22)-110615 — Lab Sample ID: 500-103708-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	14		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	21		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.92	J	1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.3		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.8		1.0	0.49	ug/L	1		8260B	Total/NA
Ethylbenzene	34		0.50	0.18	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.6		1.0	0.32	ug/L	1		8260B	Total/NA
Tetrachloroethene	2.1		1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	5.7		0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	0.61		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.56		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	160		1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	8.2		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.031		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.27		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0013	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0033		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	49		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.15		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.030		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.12		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	30	^	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.37		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	59		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.67		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.13		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	370		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0064	J	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	2100		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.043		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.48		0.020	0.0090	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(20-22)-110615 (Continued) — Lab Sample ID: 500-103708-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.15	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.012		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.21		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0019	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	19	B	0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.11		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.029		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0072	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	2.8		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0043	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	56		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.023		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.099		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	400		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0091	J	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	2500		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.025		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.048		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00029		0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	520	B	50	11	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT15(10-13)-110615 — Lab Sample ID: 500-103708-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.6		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	0.25	J	0.50	0.15	ug/L	1		8260B	Total/NA
Toluene	0.29	J	0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	0.56	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	13		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0082	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.66		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	170	V	0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.032		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.012		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.057		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	31	^ V	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.088		0.025	0.012	mg/L	5		6010C	Total/NA
Magnesium	110		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.76	V	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.040		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	43		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.029		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.17		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.54		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0021		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	88	B	0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0042	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	4.5		0.20	0.10	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615 (Continued) — Lab Sample ID: 500-103708-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	75		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0033	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	42		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.000070	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	42	B	4.0	0.86	mg/L	4		SM 4500 NH3 G	Total/NA

Client Sample ID: VAP-HPT15(15-18)-110615 — Lab Sample ID: 500-103708-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.2		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.9		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	3.9		1.0	0.39	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.8		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.31	J	0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	0.93	J	1.0	0.22	ug/L	1		8260B	Total/NA
Aluminum	54		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.054		0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.15		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	2.2		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0042		0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.044		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	190		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	1.1		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.085		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	2.4		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	500	^	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	3.1		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	3.2		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.97		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	88		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.019		0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.063		0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	280		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.16		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	4.5		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.32		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0020		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	77	B	0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0052	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0037	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0042	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	16		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	92		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.20		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.010		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	100		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	320		1.0	0.43	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(15-18)-110615 (Continued) — Lab Sample ID: 500-103708-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.0030	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.000065	J	0.00020	0.000061	mg/L	1		7470A	Total/NA
Ammonia	140	B	10	2.2	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: TB-1(110615) — Lab Sample ID: 500-103708-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.3		5.0	1.7	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-103708-1	VAP-HPT13(13-16)-110515	Water	11/05/15 14:55	11/06/15 17:05
500-103708-2	VAP-HPT13(19-22)-110615	Water	11/06/15 08:05	11/06/15 17:05
500-103708-3	VAP-HPT13(24-27)-110615	Water	11/06/15 09:15	11/06/15 17:05
500-103708-4	VAP-HPT14(10-13)-110615	Water	11/06/15 10:25	11/06/15 17:05
500-103708-5	VAP-HPT14(14-17)-110615	Water	11/06/15 11:20	11/06/15 17:05
500-103708-6	VAP-HPT14(20-22)-110615	Water	11/06/15 12:30	11/06/15 17:05
500-103708-7	VAP-HPT15(10-13)-110615	Water	11/06/15 13:30	11/06/15 17:05
500-103708-8	VAP-HPT15(15-18)-110615	Water	11/06/15 14:15	11/06/15 17:05
500-103708-9	TB-1(110615)	Water	11/06/15 00:00	11/06/15 17:05

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515

Lab Sample ID: 500-103708-1

Date Collected: 11/05/15 14:55
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**34**		10	3.5	ug/L			11/19/15 13:41	2
Benzene	**20**		1.0	0.29	ug/L			11/19/15 13:41	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/19/15 13:41	2
Bromoform	<2.0		2.0	0.97	ug/L			11/19/15 13:41	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/19/15 13:41	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			11/19/15 13:41	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/19/15 13:41	2
Chlorobenzene	**3.3**		2.0	0.77	ug/L			11/19/15 13:41	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/19/15 13:41	2
Chloroform	<2.0		2.0	0.74	ug/L			11/19/15 13:41	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/19/15 13:41	2
cis-1,2-Dichloroethene	**4.0**		2.0	0.82	ug/L			11/19/15 13:41	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/19/15 13:41	2
Cyclohexane	<2.0		2.0	0.97	ug/L			11/19/15 13:41	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/19/15 13:41	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/19/15 13:41	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/19/15 13:41	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			11/19/15 13:41	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/19/15 13:41	2
1,4-Dichlorobenzene	**28**		2.0	0.73	ug/L			11/19/15 13:41	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/19/15 13:41	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			11/19/15 13:41	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/19/15 13:41	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/19/15 13:41	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/19/15 13:41	2
Ethylbenzene	**270**		1.0	0.37	ug/L			11/19/15 13:41	2
2-Hexanone	<10		10	3.1	ug/L			11/19/15 13:41	2
Isopropylbenzene	**14**		2.0	0.77	ug/L			11/19/15 13:41	2
Methyl acetate	<10		10	4.0	ug/L			11/19/15 13:41	2
Methylcyclohexane	**2.1**		2.0	0.63	ug/L			11/19/15 13:41	2
Methylene Chloride	<10		10	3.3	ug/L			11/19/15 13:41	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/19/15 13:41	2
methyl isobutyl ketone	**41**		10	4.3	ug/L			11/19/15 13:41	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/19/15 13:41	2
Styrene	<2.0		2.0	0.77	ug/L			11/19/15 13:41	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/19/15 13:41	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/19/15 13:41	2
Toluene	**300**		1.0	0.30	ug/L			11/19/15 13:41	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/19/15 13:41	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/19/15 13:41	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/19/15 13:41	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/19/15 13:41	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/19/15 13:41	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/19/15 13:41	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/19/15 13:41	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/19/15 13:41	2
Vinyl chloride	**4.0**		1.0	0.41	ug/L			11/19/15 13:41	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515

Lab Sample ID: 500-103708-1

Date Collected: 11/05/15 14:55
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/19/15 13:41*	*2*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 13:41*	*2*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 125*		*11/19/15 13:41*	*2*
Toluene-d8 (Surr)	*98*		*75 - 120*		*11/19/15 13:41*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**940**		20	4.4	ug/L			11/19/15 14:06	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*75 - 120*		*11/19/15 14:06*	*20*
Dibromofluoromethane	*103*		*75 - 120*		*11/19/15 14:06*	*20*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 125*		*11/19/15 14:06*	*20*
Toluene-d8 (Surr)	*93*		*75 - 120*		*11/19/15 14:06*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.4**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:15	1
Antimony	**0.0098**	**J**	0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:15	1
Arsenic	**0.043**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:15	1
Barium	**0.34**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:15	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:15	1
Cadmium	**0.0065**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:15	1
Calcium	**11**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:15	1
Chromium	**0.30**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:15	1
Cobalt	**0.048**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:15	1
Copper	**0.071**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:15	1
Iron	**11**	**^**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:15	1
Lead	**0.57**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:15	1
Magnesium	**22**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:15	1
Manganese	**0.064**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:15	1
Nickel	**0.20**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:15	1
Potassium	**580**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:15	1
Selenium	**0.016**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:14	1
Silver	**0.0026**	**J**	0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:15	1
Sodium	**3600**		10	4.3	mg/L		11/10/15 16:24	11/14/15 03:20	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:14	1
Vanadium	**0.041**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:15	1
Zinc	**1.0**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.0**		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:26	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:26	1
Arsenic	**0.027**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:26	1
Barium	**0.28**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:26	1
Cadmium	**0.0037**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:26	1
Calcium	**12**	**B**	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:26	1
Chromium	**0.32**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:26	1
Cobalt	**0.058**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515

Lab Sample ID: 500-103708-1
Date Collected: 11/05/15 14:55
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.020		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:26	1
Iron	5.5		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:26	1
Lead	0.078		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:26	1
Magnesium	25		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:26	1
Manganese	0.025		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:26	1
Nickel	0.22		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:26	1
Potassium	680		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:26	1
Selenium	0.012		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:26	1
Sodium	3900		10	4.3	mg/L		11/11/15 10:00	11/14/15 20:56	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:26	1
Vanadium	0.040		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:26	1
Zinc	0.24		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00061		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:12	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	J	0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	810	B	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:02	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(19-22)-110615

Lab Sample ID: 500-103708-2

Date Collected: 11/06/15 08:05
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		25	8.7	ug/L			11/19/15 14:30	5
Benzene	**16**		2.5	0.73	ug/L			11/19/15 14:30	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Bromoform	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
Bromomethane	<10		10	4.0	ug/L			11/19/15 14:30	5
Carbon disulfide	<10		10	2.2	ug/L			11/19/15 14:30	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Chlorobenzene	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Chloroethane	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
Chloroform	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Chloromethane	<5.0		5.0	1.6	ug/L			11/19/15 14:30	5
cis-1,2-Dichloroethene	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
Cyclohexane	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			11/19/15 14:30	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			11/19/15 14:30	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
1,2-Dichlorobenzene	<5.0		5.0	1.7	ug/L			11/19/15 14:30	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
1,4-Dichlorobenzene	**15**		5.0	1.8	ug/L			11/19/15 14:30	5
Dichlorodifluoromethane	<10		10	2.7	ug/L			11/19/15 14:30	5
1,1-Dichloroethane	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
Ethylbenzene	**390**		2.5	0.92	ug/L			11/19/15 14:30	5
2-Hexanone	<25		25	7.8	ug/L			11/19/15 14:30	5
Isopropylbenzene	**17**		5.0	1.9	ug/L			11/19/15 14:30	5
Methyl acetate	<25		25	10	ug/L			11/19/15 14:30	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			11/19/15 14:30	5
Methylene Chloride	<25		25	8.2	ug/L			11/19/15 14:30	5
Methyl Ethyl Ketone	<25		25	11	ug/L			11/19/15 14:30	5
methyl isobutyl ketone	**29**		25	11	ug/L			11/19/15 14:30	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
Styrene	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			11/19/15 14:30	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
Toluene	**250**		2.5	0.76	ug/L			11/19/15 14:30	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			11/19/15 14:30	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			11/19/15 14:30	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			11/19/15 14:30	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			11/19/15 14:30	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			11/19/15 14:30	5
Trichloroethene	<2.5		2.5	0.82	ug/L			11/19/15 14:30	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			11/19/15 14:30	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			11/19/15 14:30	5
Vinyl chloride	**2.9**		2.5	1.0	ug/L			11/19/15 14:30	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(19-22)-110615

Lab Sample ID: 500-103708-2

Date Collected: 11/06/15 08:05
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*75 - 120*		*11/19/15 14:30*	*5*
Dibromofluoromethane	*103*		*75 - 120*		*11/19/15 14:30*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*11/19/15 14:30*	*5*
Toluene-d8 (Surr)	*96*		*75 - 120*		*11/19/15 14:30*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**1800**		50	11	ug/L			11/19/15 14:55	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/19/15 14:55*	*50*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 14:55*	*50*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 125*		*11/19/15 14:55*	*50*
Toluene-d8 (Surr)	*93*		*75 - 120*		*11/19/15 14:55*	*50*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**15**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:34	1
Antimony	**0.012**	**J**	0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:34	1
Arsenic	**0.071**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:34	1
Barium	**1.0**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:34	1
Beryllium	**0.0015**	**J**	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:34	1
Cadmium	**0.014**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:34	1
Calcium	**42**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:34	1
Chromium	**0.72**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:34	1
Cobalt	**0.070**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:34	1
Copper	**0.92**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:34	1
Iron	**45**	**^**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:34	1
Lead	**1.1**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:34	1
Magnesium	**25**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:34	1
Manganese	**0.45**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:34	1
Nickel	**0.29**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:34	1
Potassium	**640**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:34	1
Selenium	**0.025**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:28	1
Silver	**0.013**		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:34	1
Sodium	**3600**		10	4.3	mg/L		11/10/15 16:24	11/14/15 03:39	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:28	1
Vanadium	**0.074**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:34	1
Zinc	**2.3**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:34	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.78**		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:31	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:31	1
Arsenic	**0.034**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:31	1
Barium	**0.37**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:31	1
Cadmium	**0.0026**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:31	1
Calcium	**11**	**B**	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:31	1
Chromium	**0.43**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:31	1
Cobalt	**0.060**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(19-22)-110615

Lab Sample ID: 500-103708-2

Date Collected: 11/06/15 08:05
Date Received: 11/06/15 17:05

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.019		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:31	1
Iron	8.6		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:31	1
Lead	0.022		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:31	1
Magnesium	17		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:31	1
Manganese	0.068		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:31	1
Nickel	0.23		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:31	1
Potassium	650		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:31	1
Selenium	0.0075	J	0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:31	1
Sodium	4000		10	4.3	mg/L		11/11/15 10:00	11/14/15 21:09	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:31	1
Vanadium	0.045		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:31	1
Zinc	0.29		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0021		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:16	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	870	B	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:05	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615

Lab Sample ID: 500-103708-3

Date Collected: 11/06/15 09:15
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**15**		10	3.5	ug/L			11/19/15 15:20	2
Benzene	**22**		1.0	0.29	ug/L			11/19/15 15:20	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			11/19/15 15:20	2
Bromoform	<2.0		2.0	0.97	ug/L			11/19/15 15:20	2
Bromomethane	<4.0		4.0	1.6	ug/L			11/19/15 15:20	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			11/19/15 15:20	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			11/19/15 15:20	2
Chlorobenzene	**3.3**		2.0	0.77	ug/L			11/19/15 15:20	2
Chloroethane	<2.0		2.0	0.94	ug/L			11/19/15 15:20	2
Chloroform	<2.0		2.0	0.74	ug/L			11/19/15 15:20	2
Chloromethane	<2.0		2.0	0.64	ug/L			11/19/15 15:20	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			11/19/15 15:20	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			11/19/15 15:20	2
Cyclohexane	<2.0		2.0	0.97	ug/L			11/19/15 15:20	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			11/19/15 15:20	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			11/19/15 15:20	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			11/19/15 15:20	2
1,2-Dichlorobenzene	**14**		2.0	0.67	ug/L			11/19/15 15:20	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			11/19/15 15:20	2
1,4-Dichlorobenzene	**7.9**		2.0	0.73	ug/L			11/19/15 15:20	2
Dichlorodifluoromethane	<4.0		4.0	1.1	ug/L			11/19/15 15:20	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			11/19/15 15:20	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			11/19/15 15:20	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			11/19/15 15:20	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			11/19/15 15:20	2
Ethylbenzene	**220**		1.0	0.37	ug/L			11/19/15 15:20	2
2-Hexanone	<10		10	3.1	ug/L			11/19/15 15:20	2
Isopropylbenzene	**7.7**		2.0	0.77	ug/L			11/19/15 15:20	2
Methyl acetate	<10		10	4.0	ug/L			11/19/15 15:20	2
Methylcyclohexane	<2.0		2.0	0.63	ug/L			11/19/15 15:20	2
Methylene Chloride	<10		10	3.3	ug/L			11/19/15 15:20	2
Methyl Ethyl Ketone	<10		10	4.2	ug/L			11/19/15 15:20	2
methyl isobutyl ketone	<10		10	4.3	ug/L			11/19/15 15:20	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			11/19/15 15:20	2
Styrene	<2.0		2.0	0.77	ug/L			11/19/15 15:20	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			11/19/15 15:20	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			11/19/15 15:20	2
Toluene	**57**		1.0	0.30	ug/L			11/19/15 15:20	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			11/19/15 15:20	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			11/19/15 15:20	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			11/19/15 15:20	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			11/19/15 15:20	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			11/19/15 15:20	2
Trichloroethene	<1.0		1.0	0.33	ug/L			11/19/15 15:20	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			11/19/15 15:20	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			11/19/15 15:20	2
Vinyl chloride	**0.64**	**J**	1.0	0.41	ug/L			11/19/15 15:20	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615

Lab Sample ID: 500-103708-3

Date Collected: 11/06/15 09:15
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/19/15 15:20*	*2*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 15:20*	*2*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 15:20*	*2*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/19/15 15:20*	*2*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**930**		20	4.4	ug/L			11/19/15 15:45	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*75 - 120*		*11/19/15 15:45*	*20*
Dibromofluoromethane	*104*		*75 - 120*		*11/19/15 15:45*	*20*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*11/19/15 15:45*	*20*
Toluene-d8 (Surr)	*94*		*75 - 120*		*11/19/15 15:45*	*20*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**33**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:44	1
Antimony	**0.021**		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:44	1
Arsenic	**0.097**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:44	1
Barium	**0.86**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:44	1
Beryllium	**0.0016**	**J**	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:44	1
Cadmium	**0.017**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:44	1
Calcium	**160**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:44	1
Chromium	**0.57**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:44	1
Cobalt	**0.069**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:44	1
Copper	**1.3**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:44	1
Iron	**250**	**^**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:44	1
Lead	**3.0**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:44	1
Magnesium	**65**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:44	1
Manganese	**1.7**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:44	1
Nickel	**0.36**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:44	1
Potassium	**310**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:44	1
Selenium	**0.015**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:33	1
Silver	**0.15**		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:44	1
Sodium	**2100**		10	4.3	mg/L		11/10/15 16:24	11/14/15 03:49	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:33	1
Vanadium	**0.069**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:44	1
Zinc	**3.9**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:44	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:37	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:37	1
Arsenic	**0.013**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:37	1
Barium	**0.12**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:37	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:37	1
Cadmium	**0.0019**	**J**	0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:37	1
Calcium	**11**	**B**	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:37	1
Chromium	**0.14**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:37	1
Cobalt	**0.032**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615

Lab Sample ID: 500-103708-3

Date Collected: 11/06/15 09:15
Date Received: 11/06/15 17:05

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.0066	J	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:37	1
Iron	3.8		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:37	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:37	1
Magnesium	34		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:37	1
Manganese	0.032		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:37	1
Nickel	0.11		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:37	1
Potassium	370		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:37	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:37	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:37	1
Sodium	2500		10	4.3	mg/L		11/11/15 10:00	11/14/15 21:14	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:37	1
Vanadium	0.019		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:37	1
Zinc	0.016	J	0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00074		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:20	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	530	B	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:08	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(10-13)-110615

Lab Sample ID: 500-103708-4

Date Collected: 11/06/15 10:25
Date Received: 11/06/15 17:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.5**		5.0	1.7	ug/L			11/19/15 11:19	1
Benzene	**20**		0.50	0.15	ug/L			11/19/15 11:19	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 11:19	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 11:19	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 11:19	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 11:19	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 11:19	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 11:19	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 11:19	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 11:19	1
cis-1,2-Dichloroethene	**1.1**		1.0	0.41	ug/L			11/19/15 11:19	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 11:19	1
Cyclohexane	**4.4**		1.0	0.49	ug/L			11/19/15 11:19	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 11:19	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 11:19	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 11:19	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 11:19	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 11:19	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 11:19	1
1,1-Dichloroethane	**1.4**		1.0	0.41	ug/L			11/19/15 11:19	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 11:19	1
Ethylbenzene	**42**		0.50	0.18	ug/L			11/19/15 11:19	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 11:19	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 11:19	1
Methylcyclohexane	**3.0**		1.0	0.32	ug/L			11/19/15 11:19	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 11:19	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 11:19	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 11:19	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 11:19	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 11:19	1
Tetrachloroethene	**0.70**	**J**	1.0	0.37	ug/L			11/19/15 11:19	1
Toluene	**12**		0.50	0.15	ug/L			11/19/15 11:19	1
trans-1,2-Dichloroethene	**0.69**	**J**	1.0	0.35	ug/L			11/19/15 11:19	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 11:19	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 11:19	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 11:19	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 11:19	1
Trichloroethene	**0.31**	**J**	0.50	0.16	ug/L			11/19/15 11:19	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 11:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 11:19	1
Vinyl chloride	**0.80**		0.50	0.20	ug/L			11/19/15 11:19	1
Xylenes, Total	**220**		1.0	0.22	ug/L			11/19/15 11:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(10-13)-110615

Date Collected: 11/06/15 10:25
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*		*11/19/15 11:19*	*1*
Dibromofluoromethane	*103*		*75 - 120*		*11/19/15 11:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 11:19*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*11/19/15 11:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**5.2**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:54	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:54	1
Arsenic	**0.025**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:54	1
Barium	**0.19**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:54	1
Beryllium	**0.0010**	**J**	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:54	1
Cadmium	**0.0030**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:54	1
Calcium	**36**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:54	1
Chromium	**0.11**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:54	1
Cobalt	**0.022**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:54	1
Copper	**0.13**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:54	1
Iron	**26**	**^**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:54	1
Lead	**0.42**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:54	1
Magnesium	**49**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:54	1
Manganese	**0.72**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:54	1
Nickel	**0.088**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:54	1
Potassium	**320**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:54	1
Selenium	**0.010**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:54	1
Sodium	**1900**		10	4.3	mg/L		11/10/15 16:24	11/14/15 03:59	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:40	1
Vanadium	**0.032**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:54	1
Zinc	**0.40**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.10**	**J**	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:42	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:42	1
Arsenic	**0.0086**	**J**	0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:42	1
Barium	**0.14**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:42	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:42	1
Cadmium	**0.0022**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:42	1
Calcium	**19**	**B**	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:42	1
Chromium	**0.093**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:42	1
Cobalt	**0.024**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:42	1
Copper	**0.0068**	**J**	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:42	1
Iron	**3.2**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:42	1
Lead	**0.0057**		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:42	1
Magnesium	**51**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:42	1
Manganese	**0.068**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:42	1
Nickel	**0.072**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:42	1
Potassium	**370**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:42	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:42	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(10-13)-110615

Lab Sample ID: 500-103708-4

Date Collected: 11/06/15 10:25
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**2300**		10	4.3	mg/L		11/11/15 10:00	11/14/15 21:19	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:42	1
Vanadium	**0.018**		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:42	1
Zinc	**0.019**	**J**	0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00024**		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**500**	**B**	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:11	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615

Lab Sample ID: 500-103708-5

Date Collected: 11/06/15 11:20
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**17**		5.0	1.7	ug/L			11/19/15 12:51	1
Benzene	**17**		0.50	0.15	ug/L			11/19/15 12:51	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 12:51	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 12:51	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 12:51	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 12:51	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 12:51	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 12:51	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 12:51	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 12:51	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 12:51	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 12:51	1
Cyclohexane	**3.5**		1.0	0.49	ug/L			11/19/15 12:51	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 12:51	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 12:51	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 12:51	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 12:51	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 12:51	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 12:51	1
1,1-Dichloroethane	**1.5**		1.0	0.41	ug/L			11/19/15 12:51	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 12:51	1
Ethylbenzene	**14**		0.50	0.18	ug/L			11/19/15 12:51	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 12:51	1
Isopropylbenzene	**2.2**		1.0	0.39	ug/L			11/19/15 12:51	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 12:51	1
Methylcyclohexane	**3.1**		1.0	0.32	ug/L			11/19/15 12:51	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 12:51	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 12:51	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 12:51	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 12:51	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 12:51	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 12:51	1
Toluene	**10**		0.50	0.15	ug/L			11/19/15 12:51	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 12:51	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 12:51	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 12:51	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 12:51	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 12:51	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 12:51	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 12:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 12:51	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 12:51	1
Xylenes, Total	**87**		1.0	0.22	ug/L			11/19/15 12:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615

Lab Sample ID: 500-103708-5

Date Collected: 11/06/15 11:20
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*75 - 120*		*11/19/15 12:51*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*11/19/15 12:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 125*		*11/19/15 12:51*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*11/19/15 12:51*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4.4**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:03	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:03	1
Arsenic	**0.042**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:03	1
Barium	**0.17**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:03	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:03	1
Cadmium	**0.0042**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:03	1
Calcium	**39**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:03	1
Chromium	**0.13**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:03	1
Cobalt	**0.025**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:03	1
Copper	**0.17**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:03	1
Iron	**38**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:03	1
Lead	**0.35**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 04:03	1
Magnesium	**47**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:03	1
Manganese	**0.73**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:03	1
Nickel	**0.12**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:03	1
Potassium	**330**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:03	1
Selenium	**0.014**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:45	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:03	1
Sodium	**1800**		10	4.3	mg/L		11/10/15 16:24	11/14/15 04:09	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:45	1
Vanadium	**0.046**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:03	1
Zinc	**0.83**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:03	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.16**	J	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:47	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:47	1
Arsenic	**0.020**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:47	1
Barium	**0.12**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:47	1
Cadmium	**0.0021**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:47	1
Calcium	**17**	B	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:47	1
Chromium	**0.091**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:47	1
Cobalt	**0.026**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:47	1
Copper	**0.0077**	J	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:47	1
Iron	**4.2**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:47	1
Lead	**0.0074**		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:47	1
Magnesium	**50**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:47	1
Manganese	**0.048**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:47	1
Nickel	**0.088**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:47	1
Potassium	**390**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:47	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615

Lab Sample ID: 500-103708-5

Date Collected: 11/06/15 11:20

Matrix: Water

Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**2600**		10	4.3	mg/L		11/11/15 10:00	11/14/15 21:25	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:47	1
Vanadium	**0.036**		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:47	1
Zinc	**0.030**		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:47	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00035**		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:35	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**520**	**B**	40	8.6	mg/L		11/17/15 19:10	11/17/15 22:14	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(20-22)-110615

Lab Sample ID: 500-103708-6

Date Collected: 11/06/15 12:30
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**14**		5.0	1.7	ug/L			11/19/15 13:16	1
Benzene	**21**		0.50	0.15	ug/L			11/19/15 13:16	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 13:16	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 13:16	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 13:16	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 13:16	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 13:16	1
Chlorobenzene	**0.92**	**J**	1.0	0.39	ug/L			11/19/15 13:16	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 13:16	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 13:16	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 13:16	1
cis-1,2-Dichloroethene	**1.3**		1.0	0.41	ug/L			11/19/15 13:16	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 13:16	1
Cyclohexane	**1.8**		1.0	0.49	ug/L			11/19/15 13:16	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 13:16	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 13:16	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 13:16	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 13:16	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 13:16	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 13:16	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 13:16	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 13:16	1
Ethylbenzene	**34**		0.50	0.18	ug/L			11/19/15 13:16	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 13:16	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 13:16	1
Methylcyclohexane	**1.6**		1.0	0.32	ug/L			11/19/15 13:16	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 13:16	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 13:16	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 13:16	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 13:16	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 13:16	1
Tetrachloroethene	**2.1**		1.0	0.37	ug/L			11/19/15 13:16	1
Toluene	**5.7**		0.50	0.15	ug/L			11/19/15 13:16	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 13:16	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 13:16	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 13:16	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 13:16	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 13:16	1
Trichloroethene	**0.61**		0.50	0.16	ug/L			11/19/15 13:16	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 13:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 13:16	1
Vinyl chloride	**0.56**		0.50	0.20	ug/L			11/19/15 13:16	1
Xylenes, Total	**160**		1.0	0.22	ug/L			11/19/15 13:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(20-22)-110615

Lab Sample ID: 500-103708-6

Date Collected: 11/06/15 12:30
Matrix: Water
Date Received: 11/06/15 17:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*75 - 120*		*11/19/15 13:16*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 13:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 13:16*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*11/19/15 13:16*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8.2**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:13	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:13	1
Arsenic	**0.031**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:13	1
Barium	**0.27**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:13	1
Beryllium	**0.0013**	**J**	0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:13	1
Cadmium	**0.0033**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:13	1
Calcium	**49**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:13	1
Chromium	**0.15**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:13	1
Cobalt	**0.030**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:13	1
Copper	**0.12**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:13	1
Iron	**30**	**^**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:13	1
Lead	**0.37**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 04:13	1
Magnesium	**59**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:13	1
Manganese	**0.67**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:13	1
Nickel	**0.13**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:13	1
Potassium	**370**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:13	1
Selenium	**0.0064**	**J**	0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:13	1
Sodium	**2100**		10	4.3	mg/L		11/10/15 16:24	11/14/15 04:18	10
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:50	1
Vanadium	**0.043**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:13	1
Zinc	**0.48**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:52	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:52	1
Arsenic	**0.012**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:52	1
Barium	**0.21**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:52	1
Cadmium	**0.0019**	**J**	0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:52	1
Calcium	**19**	**B**	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:52	1
Chromium	**0.11**		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:52	1
Cobalt	**0.029**		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:52	1
Copper	**0.0072**	**J**	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:52	1
Iron	**2.8**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:52	1
Lead	**0.0043**	**J**	0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:52	1
Magnesium	**56**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:52	1
Manganese	**0.023**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:52	1
Nickel	**0.099**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:52	1
Potassium	**400**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:52	1
Selenium	**0.0091**	**J**	0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(20-22)-110615

Lab Sample ID: 500-103708-6

Date Collected: 11/06/15 12:30
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**2500**		10	4.3	mg/L		11/11/15 10:00	11/14/15 21:30	10
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:52	1
Vanadium	**0.025**		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:52	1
Zinc	**0.048**		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00029**		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**520**	**B**	50	11	mg/L		11/17/15 19:10	11/17/15 22:16	25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615

Lab Sample ID: 500-103708-7

Date Collected: 11/06/15 13:30
Date Received: 11/06/15 17:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.6**		5.0	1.7	ug/L			11/19/15 10:27	1
Benzene	**0.25**	**J**	0.50	0.15	ug/L			11/19/15 10:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 10:27	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 10:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 10:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 10:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 10:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 10:27	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 10:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 10:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 10:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 10:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/19/15 10:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 10:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 10:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 10:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 10:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 10:27	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 10:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 10:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 10:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/19/15 10:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 10:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 10:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/19/15 10:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 10:27	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 10:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 10:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 10:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 10:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 10:27	1
Toluene	**0.29**	**J**	0.50	0.15	ug/L			11/19/15 10:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 10:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 10:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 10:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 10:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 10:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 10:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 10:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 10:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 10:27	1
Xylenes, Total	**0.56**	**J**	1.0	0.22	ug/L			11/19/15 10:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615

Date Collected: 11/06/15 13:30
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-7

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/19/15 10:27*	*1*
Dibromofluoromethane	*102*		*75 - 120*		*11/19/15 10:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 10:27*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/19/15 10:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**13**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:31	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:31	1
Arsenic	**0.0082**	**J**	0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:31	1
Barium	**0.66**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:31	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:31	1
Calcium	**170**	**V**	0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:31	1
Chromium	**0.032**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:31	1
Cobalt	**0.012**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:31	1
Copper	**0.057**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:31	1
Iron	**31**	**^ V**	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:31	1
Lead	**0.088**		0.025	0.012	mg/L		11/10/15 16:24	11/17/15 18:29	5
Magnesium	**110**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:31	1
Manganese	**0.76**	**V**	0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:31	1
Nickel	**0.040**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:31	1
Potassium	**43**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:31	1
Selenium	<0.010		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:56	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:31	1
Sodium	**210**		1.0	0.43	mg/L		11/10/15 16:24	11/14/15 04:31	1
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:56	1
Vanadium	**0.029**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:31	1
Zinc	**0.17**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 03:57	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 03:57	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:57	1
Barium	**0.54**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 03:57	1
Cadmium	**0.0021**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 03:57	1
Calcium	**88**	**B**	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 03:57	1
Chromium	<0.010		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 03:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 03:57	1
Copper	**0.0042**	**J**	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 03:57	1
Iron	**4.5**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 03:57	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 03:57	1
Magnesium	**75**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 03:57	1
Manganese	**0.22**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 03:57	1
Nickel	**0.0033**	**J**	0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 03:57	1
Potassium	**42**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 03:57	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 03:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 03:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615

Lab Sample ID: 500-103708-7

Date Collected: 11/06/15 13:30
Matrix: Water
Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**200**		1.0	0.43	mg/L		11/11/15 10:00	11/14/15 03:57	1
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 03:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 03:57	1
Zinc	<0.020		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 03:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000070**	**J**	0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:43	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**42**	**B**	4.0	0.86	mg/L		11/17/15 19:10	11/17/15 22:19	4

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(15-18)-110615

Lab Sample ID: 500-103708-8

Date Collected: 11/06/15 14:15
Matrix: Water
Date Received: 11/06/15 17:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.2**		5.0	1.7	ug/L			11/19/15 10:52	1
Benzene	**6.9**		0.50	0.15	ug/L			11/19/15 10:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 10:52	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 10:52	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 10:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 10:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 10:52	1
Chlorobenzene	**3.9**		1.0	0.39	ug/L			11/19/15 10:52	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 10:52	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 10:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 10:52	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 10:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 10:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/19/15 10:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 10:52	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 10:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 10:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 10:52	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 10:52	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 10:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 10:52	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 10:52	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/19/15 10:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 10:52	1
Isopropylbenzene	**3.8**		1.0	0.39	ug/L			11/19/15 10:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 10:52	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/19/15 10:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 10:52	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 10:52	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 10:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 10:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 10:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 10:52	1
Toluene	**0.31**	**J**	0.50	0.15	ug/L			11/19/15 10:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 10:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 10:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 10:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 10:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 10:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 10:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 10:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 10:52	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 10:52	1
Xylenes, Total	**0.93**	**J**	1.0	0.22	ug/L			11/19/15 10:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(15-18)-110615

Date Collected: 11/06/15 14:15
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-8

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*75 - 120*		*11/19/15 10:52*	*1*
Dibromofluoromethane	*104*		*75 - 120*		*11/19/15 10:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*		*11/19/15 10:52*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*11/19/15 10:52*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**54**		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 04:55	1
Antimony	**0.054**		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 04:55	1
Arsenic	**0.15**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:55	1
Barium	**2.2**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:55	1
Beryllium	**0.0042**		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 04:55	1
Cadmium	**0.044**		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 04:55	1
Calcium	**190**		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 04:55	1
Chromium	**1.1**		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 04:55	1
Cobalt	**0.085**		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 04:55	1
Copper	**2.4**		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 04:55	1
Iron	**500**	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 04:55	1
Lead	**3.1**		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 04:55	1
Magnesium	**110**		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 04:55	1
Manganese	**3.2**		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 04:55	1
Nickel	**0.97**		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 04:55	1
Potassium	**88**		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 04:55	1
Selenium	**0.019**		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 18:49	1
Silver	**0.063**		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 04:55	1
Sodium	**280**		1.0	0.43	mg/L		11/10/15 16:24	11/14/15 04:55	1
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 18:49	1
Vanadium	**0.16**		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 04:55	1
Zinc	**4.5**		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 04:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 04:03	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 04:03	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 04:03	1
Barium	**0.32**		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 04:03	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 04:03	1
Cadmium	**0.0020**		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 04:03	1
Calcium	**77**	**B**	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 04:03	1
Chromium	**0.0052**	**J**	0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 04:03	1
Cobalt	**0.0037**	**J**	0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 04:03	1
Copper	**0.0042**	**J**	0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 04:03	1
Iron	**16**		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 04:03	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 04:03	1
Magnesium	**92**		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 04:03	1
Manganese	**0.20**		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 04:03	1
Nickel	**0.010**		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 04:03	1
Potassium	**100**		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 04:03	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 04:03	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 04:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(15-18)-110615

Lab Sample ID: 500-103708-8

Date Collected: 11/06/15 14:15

Matrix: Water

Date Received: 11/06/15 17:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**320**		1.0	0.43	mg/L		11/11/15 10:00	11/14/15 04:03	1
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 04:03	1
Vanadium	**0.0030**	**J**	0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 04:03	1
Zinc	<0.020		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 04:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000065**	**J**	0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 14:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 15:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**140**	**B**	10	2.2	mg/L		11/17/15 19:10	11/17/15 23:39	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: TB-1(110615)

Date Collected: 11/06/15 00:00
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-9

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	6.3		5.0	1.7	ug/L			11/19/15 10:02	1
Benzene	<0.50		0.50	0.15	ug/L			11/19/15 10:02	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 10:02	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 10:02	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 10:02	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 10:02	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 10:02	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 10:02	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 10:02	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 10:02	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 10:02	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 10:02	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/19/15 10:02	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 10:02	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 10:02	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 10:02	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 10:02	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 10:02	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 10:02	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 10:02	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 10:02	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/19/15 10:02	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 10:02	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 10:02	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/19/15 10:02	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 10:02	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 10:02	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 10:02	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 10:02	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 10:02	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 10:02	1
Toluene	<0.50		0.50	0.15	ug/L			11/19/15 10:02	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 10:02	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 10:02	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 10:02	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 10:02	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 10:02	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 10:02	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 10:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 10:02	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 10:02	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/19/15 10:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: TB-1(110615)

Date Collected: 11/06/15 00:00
Date Received: 11/06/15 17:05

Lab Sample ID: 500-103708-9

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		75 - 120		11/19/15 10:02	1
Dibromofluoromethane	102		75 - 120		11/19/15 10:02	1
1,2-Dichloroethane-d4 (Surr)	98		75 - 125		11/19/15 10:02	1
Toluene-d8 (Surr)	94		75 - 120		11/19/15 10:02	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
V	Serial Dilution exceeds the control limits
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

GC/MS VOA

Analysis Batch: 313184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	8260B	
500-103708-1 - DL	VAP-HPT13(13-16)-110515	Total/NA	Water	8260B	
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	8260B	
500-103708-2 - DL	VAP-HPT13(19-22)-110615	Total/NA	Water	8260B	
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	8260B	
500-103708-3 - DL	VAP-HPT13(24-27)-110615	Total/NA	Water	8260B	
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	8260B	
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	8260B	
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	8260B	
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	8260B	
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	8260B	
500-103708-9	TB-1(110615)	Total/NA	Water	8260B	
LCS 500-313184/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-313184/6	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 312031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	3010A	
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	3010A	
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	3010A	
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	3010A	
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	3010A	
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	3010A	
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	3010A	
500-103708-7 DU	VAP-HPT15(10-13)-110615	Total/NA	Water	3010A	
500-103708-7 MS	VAP-HPT15(10-13)-110615	Total/NA	Water	3010A	
500-103708-7 MSD	VAP-HPT15(10-13)-110615	Total/NA	Water	3010A	
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	3010A	
LCS 500-312031/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-312031/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 312154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Dissolved	Water	3010A	
500-103708-2	VAP-HPT13(19-22)-110615	Dissolved	Water	3010A	
500-103708-3	VAP-HPT13(24-27)-110615	Dissolved	Water	3010A	
500-103708-4	VAP-HPT14(10-13)-110615	Dissolved	Water	3010A	
500-103708-5	VAP-HPT14(14-17)-110615	Dissolved	Water	3010A	
500-103708-6	VAP-HPT14(20-22)-110615	Dissolved	Water	3010A	
500-103708-7	VAP-HPT15(10-13)-110615	Dissolved	Water	3010A	
500-103708-8	VAP-HPT15(15-18)-110615	Dissolved	Water	3010A	
LCS 500-312154/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-312154/1-A	Method Blank	Total/NA	Water	3010A	

Prep Batch: 312211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Dissolved	Water	7470A	
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 312211 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-2	VAP-HPT13(19-22)-110615	Dissolved	Water	7470A	
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	7470A	
500-103708-3	VAP-HPT13(24-27)-110615	Dissolved	Water	7470A	
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	7470A	
500-103708-4	VAP-HPT14(10-13)-110615	Dissolved	Water	7470A	
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	7470A	
500-103708-5	VAP-HPT14(14-17)-110615	Dissolved	Water	7470A	
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	7470A	
500-103708-6	VAP-HPT14(20-22)-110615	Dissolved	Water	7470A	
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	7470A	
500-103708-7	VAP-HPT15(10-13)-110615	Dissolved	Water	7470A	
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	7470A	
500-103708-8	VAP-HPT15(15-18)-110615	Dissolved	Water	7470A	
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	7470A	
LCS 500-312211/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-312211/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 312422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Dissolved	Water	7470A	312211
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	7470A	312211
500-103708-2	VAP-HPT13(19-22)-110615	Dissolved	Water	7470A	312211
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	7470A	312211
500-103708-3	VAP-HPT13(24-27)-110615	Dissolved	Water	7470A	312211
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	7470A	312211
500-103708-4	VAP-HPT14(10-13)-110615	Dissolved	Water	7470A	312211
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	7470A	312211
500-103708-5	VAP-HPT14(14-17)-110615	Dissolved	Water	7470A	312211
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	7470A	312211
500-103708-6	VAP-HPT14(20-22)-110615	Dissolved	Water	7470A	312211
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	7470A	312211
500-103708-7	VAP-HPT15(10-13)-110615	Dissolved	Water	7470A	312211
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	7470A	312211
500-103708-8	VAP-HPT15(15-18)-110615	Dissolved	Water	7470A	312211
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	7470A	312211
LCS 500-312211/13-A	Lab Control Sample	Total/NA	Water	7470A	312211
MB 500-312211/12-A	Method Blank	Total/NA	Water	7470A	312211

Analysis Batch: 312671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Dissolved	Water	6010C	312154
500-103708-2	VAP-HPT13(19-22)-110615	Dissolved	Water	6010C	312154
500-103708-3	VAP-HPT13(24-27)-110615	Dissolved	Water	6010C	312154
500-103708-4	VAP-HPT14(10-13)-110615	Dissolved	Water	6010C	312154
500-103708-5	VAP-HPT14(14-17)-110615	Dissolved	Water	6010C	312154
500-103708-6	VAP-HPT14(20-22)-110615	Dissolved	Water	6010C	312154
500-103708-7	VAP-HPT15(10-13)-110615	Dissolved	Water	6010C	312154
500-103708-8	VAP-HPT15(15-18)-110615	Dissolved	Water	6010C	312154
LCS 500-312154/2-A	Lab Control Sample	Total/NA	Water	6010C	312154
MB 500-312154/1-A	Method Blank	Total/NA	Water	6010C	312154

Metals (Continued)

Analysis Batch: 312673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	6010C	312031
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	6010C	312031
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	6010C	312031
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	6010C	312031
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	6010C	312031
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	6010C	312031
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	6010C	312031
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	6010C	312031
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	6010C	312031
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	6010C	312031
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 DU	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 MS	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 MSD	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	6010C	312031
LCS 500-312031/2-A	Lab Control Sample	Total/NA	Water	6010C	312031
MB 500-312031/1-A	Method Blank	Total/NA	Water	6010C	312031

Analysis Batch: 312769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Dissolved	Water	6010C	312154
500-103708-2	VAP-HPT13(19-22)-110615	Dissolved	Water	6010C	312154
500-103708-3	VAP-HPT13(24-27)-110615	Dissolved	Water	6010C	312154
500-103708-4	VAP-HPT14(10-13)-110615	Dissolved	Water	6010C	312154
500-103708-5	VAP-HPT14(14-17)-110615	Dissolved	Water	6010C	312154
500-103708-6	VAP-HPT14(20-22)-110615	Dissolved	Water	6010C	312154

Analysis Batch: 313206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	6010C	312031
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	6010C	312031
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	6010C	312031
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	6010C	312031
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	6010C	312031
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 DU	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 DU	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 MS	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 MS	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 MSD	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-7 MSD	VAP-HPT15(10-13)-110615	Total/NA	Water	6010C	312031
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	6010C	312031
LCS 500-312031/2-A	Lab Control Sample	Total/NA	Water	6010C	312031
MB 500-312031/1-A	Method Blank	Total/NA	Water	6010C	312031

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

General Chemistry

Prep Batch: 312925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	SM 4500 NH3 B	
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	SM 4500 NH3 B	
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	SM 4500 NH3 B	
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	SM 4500 NH3 B	
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	SM 4500 NH3 B	
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	SM 4500 NH3 B	
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	SM 4500 NH3 B	
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	SM 4500 NH3 B	
LCS 500-312925/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-312925/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 313114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-103708-1	VAP-HPT13(13-16)-110515	Total/NA	Water	SM 4500 NH3 G	312925
500-103708-2	VAP-HPT13(19-22)-110615	Total/NA	Water	SM 4500 NH3 G	312925
500-103708-3	VAP-HPT13(24-27)-110615	Total/NA	Water	SM 4500 NH3 G	312925
500-103708-4	VAP-HPT14(10-13)-110615	Total/NA	Water	SM 4500 NH3 G	312925
500-103708-5	VAP-HPT14(14-17)-110615	Total/NA	Water	SM 4500 NH3 G	312925
500-103708-6	VAP-HPT14(20-22)-110615	Total/NA	Water	SM 4500 NH3 G	312925
500-103708-7	VAP-HPT15(10-13)-110615	Total/NA	Water	SM 4500 NH3 G	312925
500-103708-8	VAP-HPT15(15-18)-110615	Total/NA	Water	SM 4500 NH3 G	312925
LCS 500-312925/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	312925
MB 500-312925/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	312925

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(75-120)	(75-120)	(75-125)	(75-120)
500-103708-1	VAP-HPT13(13-16)-110515	95	102	98	98
500-103708-1 - DL	VAP-HPT13(13-16)-110515	94	103	103	93
500-103708-2	VAP-HPT13(19-22)-110615	93	103	100	96
500-103708-2 - DL	VAP-HPT13(19-22)-110615	92	102	100	93
500-103708-3	VAP-HPT13(24-27)-110615	96	102	101	95
500-103708-3 - DL	VAP-HPT13(24-27)-110615	95	104	102	94
500-103708-4	VAP-HPT14(10-13)-110615	91	103	101	96
500-103708-5	VAP-HPT14(14-17)-110615	90	104	102	96
500-103708-6	VAP-HPT14(20-22)-110615	96	102	101	97
500-103708-7	VAP-HPT15(10-13)-110615	92	102	101	95
500-103708-8	VAP-HPT15(15-18)-110615	92	104	101	95
500-103708-9	TB-1(110615)	94	102	98	94
LCS 500-313184/4	Lab Control Sample	91	100	101	96
MB 500-313184/6	Method Blank	92	103	103	92

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-313184/6
Matrix: Water
Analysis Batch: 313184

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			11/19/15 09:37	1
Benzene	<0.50		0.50	0.15	ug/L			11/19/15 09:37	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			11/19/15 09:37	1
Bromoform	<1.0		1.0	0.48	ug/L			11/19/15 09:37	1
Bromomethane	<2.0		2.0	0.80	ug/L			11/19/15 09:37	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			11/19/15 09:37	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			11/19/15 09:37	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			11/19/15 09:37	1
Chloroethane	<1.0		1.0	0.47	ug/L			11/19/15 09:37	1
Chloroform	<1.0		1.0	0.37	ug/L			11/19/15 09:37	1
Chloromethane	<1.0		1.0	0.32	ug/L			11/19/15 09:37	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			11/19/15 09:37	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			11/19/15 09:37	1
Cyclohexane	<1.0		1.0	0.49	ug/L			11/19/15 09:37	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			11/19/15 09:37	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			11/19/15 09:37	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			11/19/15 09:37	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			11/19/15 09:37	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			11/19/15 09:37	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			11/19/15 09:37	1
Dichlorodifluoromethane	<2.0		2.0	0.54	ug/L			11/19/15 09:37	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			11/19/15 09:37	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			11/19/15 09:37	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			11/19/15 09:37	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			11/19/15 09:37	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			11/19/15 09:37	1
2-Hexanone	<5.0		5.0	1.6	ug/L			11/19/15 09:37	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			11/19/15 09:37	1
Methyl acetate	<5.0		5.0	2.0	ug/L			11/19/15 09:37	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			11/19/15 09:37	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			11/19/15 09:37	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			11/19/15 09:37	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			11/19/15 09:37	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			11/19/15 09:37	1
Styrene	<1.0		1.0	0.39	ug/L			11/19/15 09:37	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			11/19/15 09:37	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			11/19/15 09:37	1
Toluene	<0.50		0.50	0.15	ug/L			11/19/15 09:37	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			11/19/15 09:37	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			11/19/15 09:37	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			11/19/15 09:37	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			11/19/15 09:37	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			11/19/15 09:37	1
Trichloroethene	<0.50		0.50	0.16	ug/L			11/19/15 09:37	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			11/19/15 09:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			11/19/15 09:37	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			11/19/15 09:37	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			11/19/15 09:37	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		75 - 120		11/19/15 09:37	1
Dibromofluoromethane	103		75 - 120		11/19/15 09:37	1
1,2-Dichloroethane-d4 (Surr)	103		75 - 125		11/19/15 09:37	1
Toluene-d8 (Surr)	92		75 - 120		11/19/15 09:37	1

Lab Sample ID: LCS 500-313184/4
Matrix: Water
Analysis Batch: 313184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	54.4		ug/L		109	47 - 131
Benzene	50.0	46.0		ug/L		92	70 - 120
Bromodichloromethane	50.0	44.6		ug/L		89	70 - 127
Bromoform	50.0	52.3		ug/L		105	70 - 135
Bromomethane	50.0	29.2		ug/L		58	30 - 170
Carbon disulfide	50.0	46.7		ug/L		93	61 - 120
Carbon tetrachloride	50.0	47.5		ug/L		95	70 - 136
Chlorobenzene	50.0	46.7		ug/L		93	70 - 120
Chloroethane	50.0	41.0		ug/L		82	40 - 150
Chloroform	50.0	45.8		ug/L		92	70 - 120
Chloromethane	50.0	52.2		ug/L		104	45 - 140
cis-1,2-Dichloroethene	50.0	47.6		ug/L		95	70 - 120
cis-1,3-Dichloropropene	50.0	46.0		ug/L		92	70 - 122
Cyclohexane	50.0	65.6		ug/L		131	60 - 133
Dibromochloromethane	50.0	49.1		ug/L		98	70 - 120
1,2-Dibromo-3-Chloropropane	50.0	47.7		ug/L		95	59 - 139
1,2-Dibromoethane	50.0	49.9		ug/L		100	70 - 124
1,2-Dichlorobenzene	50.0	47.1		ug/L		94	70 - 123
1,3-Dichlorobenzene	50.0	45.9		ug/L		92	70 - 122
1,4-Dichlorobenzene	50.0	44.8		ug/L		90	70 - 120
Dichlorodifluoromethane	50.0	47.7		ug/L		95	30 - 150
1,1-Dichloroethane	50.0	49.8		ug/L		100	70 - 127
1,2-Dichloroethane	50.0	45.7		ug/L		91	66 - 132
1,1-Dichloroethene	50.0	48.1		ug/L		96	68 - 121
1,2-Dichloropropane	50.0	50.0		ug/L		100	70 - 127
Ethylbenzene	50.0	47.7		ug/L		95	70 - 125
2-Hexanone	50.0	53.9		ug/L		108	53 - 140
Isopropylbenzene	50.0	42.9		ug/L		86	70 - 132
Methyl acetate	250	306		ug/L		123	56 - 131
Methylcyclohexane	50.0	52.8		ug/L		106	60 - 140
Methylene Chloride	50.0	47.7		ug/L		95	70 - 120
Methyl Ethyl Ketone	50.0	52.3		ug/L		105	51 - 134
methyl isobutyl ketone	50.0	49.0		ug/L		98	53 - 135
Methyl tert-butyl ether	50.0	53.9		ug/L		108	65 - 120
Styrene	50.0	49.6		ug/L		99	70 - 120
1,1,2,2-Tetrachloroethane	50.0	48.9		ug/L		98	68 - 133
Tetrachloroethene	50.0	45.0		ug/L		90	70 - 129
Toluene	50.0	45.2		ug/L		90	70 - 120
trans-1,2-Dichloroethene	50.0	47.7		ug/L		95	70 - 120
trans-1,3-Dichloropropene	50.0	45.3		ug/L		91	70 - 123
1,2,4-Trichlorobenzene	50.0	50.2		ug/L		100	70 - 125
1,1,1-Trichloroethane	50.0	47.0		ug/L		94	70 - 125
1,1,2-Trichloroethane	50.0	47.1		ug/L		94	70 - 125
Trichloroethene	50.0	47.2		ug/L		94	70 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-313184/4
Matrix: Water
Analysis Batch: 313184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	35.0		ug/L		70	65 - 134
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	60.2		ug/L		120	64 - 120
Vinyl chloride	50.0	48.5		ug/L		97	63 - 127
Xylenes, Total	100	93.6		ug/L		94	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*75 - 120*
Dibromofluoromethane	*100*		*75 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 125*
Toluene-d8 (Surr)	*96*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-312031/1-A
Matrix: Water
Analysis Batch: 312673

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312031

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/10/15 16:24	11/14/15 03:07	1
Antimony	<0.020		0.020	0.0064	mg/L		11/10/15 16:24	11/14/15 03:07	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:07	1
Barium	<0.010		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/10/15 16:24	11/14/15 03:07	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/10/15 16:24	11/14/15 03:07	1
Calcium	<0.20		0.20	0.059	mg/L		11/10/15 16:24	11/14/15 03:07	1
Chromium	<0.010		0.010	0.0024	mg/L		11/10/15 16:24	11/14/15 03:07	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/10/15 16:24	11/14/15 03:07	1
Copper	<0.010		0.010	0.0022	mg/L		11/10/15 16:24	11/14/15 03:07	1
Iron	<0.20	^	0.20	0.10	mg/L		11/10/15 16:24	11/14/15 03:07	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/10/15 16:24	11/14/15 03:07	1
Magnesium	<0.10		0.10	0.034	mg/L		11/10/15 16:24	11/14/15 03:07	1
Manganese	<0.010		0.010	0.0034	mg/L		11/10/15 16:24	11/14/15 03:07	1
Nickel	<0.010		0.010	0.0031	mg/L		11/10/15 16:24	11/14/15 03:07	1
Potassium	<0.50		0.50	0.16	mg/L		11/10/15 16:24	11/14/15 03:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/10/15 16:24	11/14/15 03:07	1
Sodium	<1.0		1.0	0.43	mg/L		11/10/15 16:24	11/14/15 03:07	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/10/15 16:24	11/14/15 03:07	1
Zinc	<0.020		0.020	0.0090	mg/L		11/10/15 16:24	11/14/15 03:07	1

Lab Sample ID: MB 500-312031/1-A
Matrix: Water
Analysis Batch: 313206

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312031

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0046	mg/L		11/10/15 16:24	11/17/15 17:06	1
Thallium	<0.010		0.010	0.0028	mg/L		11/10/15 16:24	11/17/15 17:06	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-312031/2-A
Matrix: Water
Analysis Batch: 312673

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312031

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.96		mg/L		98	80 - 120
Antimony	0.500	0.494		mg/L		99	80 - 120
Arsenic	0.100	0.0982		mg/L		98	80 - 120
Barium	2.00	2.03		mg/L		101	80 - 120
Beryllium	0.0500	0.0506		mg/L		101	80 - 120
Cadmium	0.0500	0.0498		mg/L		100	80 - 120
Calcium	10.0	10.2		mg/L		102	80 - 120
Chromium	0.200	0.204		mg/L		102	80 - 120
Cobalt	0.500	0.512		mg/L		102	80 - 120
Copper	0.250	0.278		mg/L		111	80 - 120
Iron	1.00	1.07	^	mg/L		107	80 - 120
Lead	0.100	0.0982		mg/L		98	80 - 120
Magnesium	10.0	9.98		mg/L		100	80 - 120
Manganese	0.500	0.502		mg/L		100	80 - 120
Nickel	0.500	0.507		mg/L		101	80 - 120
Potassium	10.0	9.92		mg/L		99	80 - 120
Silver	0.0500	0.0469		mg/L		94	80 - 120
Sodium	10.0	10.1		mg/L		101	80 - 120
Vanadium	0.500	0.515		mg/L		103	80 - 120
Zinc	0.500	0.505		mg/L		101	80 - 120

Lab Sample ID: LCS 500-312031/2-A
Matrix: Water
Analysis Batch: 313206

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312031

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.100	0.0956		mg/L		96	80 - 120
Thallium	0.100	0.0959		mg/L		96	80 - 120

Lab Sample ID: 500-103708-7 MS
Matrix: Water
Analysis Batch: 312673

Client Sample ID: VAP-HPT15(10-13)-110615
Prep Type: Total/NA
Prep Batch: 312031

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	13		2.00	20.9	4	mg/L		395	75 - 125
Antimony	<0.020		0.500	0.481		mg/L		96	75 - 125
Arsenic	0.0082	J	0.100	0.118		mg/L		110	75 - 125
Barium	0.66		2.00	2.68		mg/L		101	75 - 125
Beryllium	<0.0040		0.0500	0.0523		mg/L		105	75 - 125
Cadmium	0.0013	J	0.0500	0.0524		mg/L		102	75 - 125
Calcium	170	V	10.0	184	4	mg/L		139	75 - 125
Chromium	0.032		0.200	0.227		mg/L		97	75 - 125
Cobalt	0.012		0.500	0.549		mg/L		107	75 - 125
Copper	0.057		0.250	0.315		mg/L		103	75 - 125
Iron	31	^ V	1.00	33.1	4 ^	mg/L		223	75 - 125
Magnesium	110		10.0	125	4	mg/L		125	75 - 125
Manganese	0.76	V	0.500	1.26		mg/L		99	75 - 125
Nickel	0.040		0.500	0.566		mg/L		105	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-103708-7 MS — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312673 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	43		10.0	56.1	4	mg/L		132	75 - 125
Silver	<0.0050		0.0500	0.0494		mg/L		99	75 - 125
Sodium	210		10.0	220	4	mg/L		118	75 - 125
Vanadium	0.029		0.500	0.541		mg/L		102	75 - 125
Zinc	0.17		0.500	0.712		mg/L		108	75 - 125

Lab Sample ID: 500-103708-7 MS — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313206 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	<0.010		0.100	0.0911		mg/L		91	75 - 125
Thallium	<0.010		0.100	0.0898		mg/L		90	75 - 125

Lab Sample ID: 500-103708-7 MS — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313206 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.088		0.100	0.202		mg/L		114	75 - 125

Lab Sample ID: 500-103708-7 MSD — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312673 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	13		2.00	20.9	4	mg/L		394	75 - 125	0	20
Antimony	<0.020		0.500	0.485		mg/L		97	75 - 125	1	20
Arsenic	0.0082	J	0.100	0.118		mg/L		110	75 - 125	0	20
Barium	0.66		2.00	2.64		mg/L		99	75 - 125	1	20
Beryllium	<0.0040		0.0500	0.0497		mg/L		99	75 - 125	5	20
Cadmium	0.0013	J	0.0500	0.0523		mg/L		102	75 - 125	0	20
Calcium	170	V	10.0	178	4	mg/L		77	75 - 125	3	20
Chromium	0.032		0.200	0.228		mg/L		98	75 - 125	0	20
Cobalt	0.012		0.500	0.550		mg/L		108	75 - 125	0	20
Copper	0.057		0.250	0.319		mg/L		105	75 - 125	1	20
Iron	31	^ V	1.00	32.0	4 ^	mg/L		114	75 - 125	3	20
Magnesium	110		10.0	122	4	mg/L		94	75 - 125	3	20
Manganese	0.76	V	0.500	1.22		mg/L		92	75 - 125	3	20
Nickel	0.040		0.500	0.569		mg/L		106	75 - 125	0	20
Potassium	43		10.0	54.8	4	mg/L		120	75 - 125	2	20
Silver	<0.0050		0.0500	0.0489		mg/L		98	75 - 125	1	20
Sodium	210		10.0	214	4	mg/L		67	75 - 125	2	20
Vanadium	0.029		0.500	0.538		mg/L		102	75 - 125	1	20
Zinc	0.17		0.500	0.710		mg/L		108	75 - 125	0	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-103708-7 MSD — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313206 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	<0.010		0.100	0.0845		mg/L		84	75 - 125	8	20
Thallium	<0.010		0.100	0.0849		mg/L		85	75 - 125	6	20

Lab Sample ID: 500-103708-7 MSD — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313206 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.088		0.100	0.199		mg/L		111	75 - 125	1	20

Lab Sample ID: 500-103708-7 DU — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 312673 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	13		12.5		mg/L		4	20
Antimony	<0.020		<0.020		mg/L		NC	20
Arsenic	0.0082	J	0.00627	J F5	mg/L		27	20
Barium	0.66		0.647		mg/L		2	20
Beryllium	<0.0040		0.000883	J	mg/L		NC	20
Cadmium	0.0013	J	0.00114	J	mg/L		15	20
Calcium	170	V	170		mg/L		0.5	20
Chromium	0.032		0.0323		mg/L		0.6	20
Cobalt	0.012		0.0124		mg/L		0.2	20
Copper	0.057		0.0558		mg/L		1	20
Iron	31	^ V	31.1		mg/L		0.7	20
Magnesium	110		111		mg/L		1	20
Manganese	0.76	V	0.765		mg/L		0.07	20
Nickel	0.040		0.0391		mg/L		2	20
Potassium	43		42.3		mg/L		1	20
Silver	<0.0050		<0.0050		mg/L		NC	20
Sodium	210		206		mg/L		0.9	20
Vanadium	0.029		0.0289		mg/L		2	20
Zinc	0.17		0.172		mg/L		0.4	20

Lab Sample ID: 500-103708-7 DU — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313206 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Selenium	<0.010		<0.010		mg/L		NC	20
Thallium	<0.010		<0.010		mg/L		NC	20

Lab Sample ID: 500-103708-7 DU — **Client Sample ID: VAP-HPT15(10-13)-110615**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 313206 — **Prep Batch: 312031**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	0.088		0.0851		mg/L		3	20

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Lab Sample ID: MB 500-312154/1-A
Matrix: Water
Analysis Batch: 312671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312154

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		11/11/15 10:00	11/14/15 02:57	1
Antimony	<0.020		0.020	0.0064	mg/L		11/11/15 10:00	11/14/15 02:57	1
Arsenic	<0.010		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 02:57	1
Barium	<0.010		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 02:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		11/11/15 10:00	11/14/15 02:57	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		11/11/15 10:00	11/14/15 02:57	1
Calcium	0.0715	J	0.20	0.059	mg/L		11/11/15 10:00	11/14/15 02:57	1
Chromium	<0.010		0.010	0.0024	mg/L		11/11/15 10:00	11/14/15 02:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		11/11/15 10:00	11/14/15 02:57	1
Copper	<0.010		0.010	0.0022	mg/L		11/11/15 10:00	11/14/15 02:57	1
Iron	<0.20		0.20	0.10	mg/L		11/11/15 10:00	11/14/15 02:57	1
Lead	<0.0050		0.0050	0.0024	mg/L		11/11/15 10:00	11/14/15 02:57	1
Magnesium	<0.10		0.10	0.034	mg/L		11/11/15 10:00	11/14/15 02:57	1
Manganese	<0.010		0.010	0.0034	mg/L		11/11/15 10:00	11/14/15 02:57	1
Nickel	<0.010		0.010	0.0031	mg/L		11/11/15 10:00	11/14/15 02:57	1
Potassium	<0.50		0.50	0.16	mg/L		11/11/15 10:00	11/14/15 02:57	1
Selenium	<0.010		0.010	0.0046	mg/L		11/11/15 10:00	11/14/15 02:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		11/11/15 10:00	11/14/15 02:57	1
Sodium	<1.0		1.0	0.43	mg/L		11/11/15 10:00	11/14/15 02:57	1
Thallium	<0.010		0.010	0.0028	mg/L		11/11/15 10:00	11/14/15 02:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		11/11/15 10:00	11/14/15 02:57	1
Zinc	<0.020		0.020	0.0090	mg/L		11/11/15 10:00	11/14/15 02:57	1

Lab Sample ID: LCS 500-312154/2-A
Matrix: Water
Analysis Batch: 312671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.91		mg/L		95	80 - 120
Antimony	0.500	0.480		mg/L		96	80 - 120
Arsenic	0.100	0.0974		mg/L		97	80 - 120
Barium	2.00	2.04		mg/L		102	80 - 120
Beryllium	0.0500	0.0504		mg/L		101	80 - 120
Cadmium	0.0500	0.0487		mg/L		97	80 - 120
Calcium	10.0	9.19		mg/L		92	80 - 120
Chromium	0.200	0.191		mg/L		96	80 - 120
Cobalt	0.500	0.495		mg/L		99	80 - 120
Copper	0.250	0.246		mg/L		98	80 - 120
Iron	1.00	0.964		mg/L		96	80 - 120
Lead	0.100	0.0956		mg/L		96	80 - 120
Magnesium	10.0	9.23		mg/L		92	80 - 120
Manganese	0.500	0.492		mg/L		98	80 - 120
Nickel	0.500	0.487		mg/L		97	80 - 120
Potassium	10.0	10.0		mg/L		100	80 - 120
Selenium	0.100	0.0891		mg/L		89	80 - 120
Silver	0.0500	0.0462		mg/L		92	80 - 120
Sodium	10.0	9.96		mg/L		100	80 - 120
Thallium	0.100	0.0886		mg/L		89	80 - 120
Vanadium	0.500	0.495		mg/L		99	80 - 120
Zinc	0.500	0.482		mg/L		96	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-312211/12-A
Matrix: Water
Analysis Batch: 312422

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312211

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020	^	0.00020	0.000061	mg/L		11/11/15 17:30	11/12/15 12:46	1

Lab Sample ID: LCS 500-312211/13-A
Matrix: Water
Analysis Batch: 312422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312211

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00168	^	mg/L		84	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-312925/1-A
Matrix: Water
Analysis Batch: 313114

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312925

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0580	J	0.20	0.043	mg/L		11/17/15 19:10	11/17/15 21:57	1

Lab Sample ID: LCS 500-312925/2-A
Matrix: Water
Analysis Batch: 313114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312925

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.46		mg/L		98	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(13-16)-110515

Lab Sample ID: 500-103708-1

Date Collected: 11/05/15 14:55
Matrix: Water
Date Received: 11/06/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	313184	11/19/15 13:41	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	20	313184	11/19/15 14:06	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 03:26	KML	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		10	312769	11/14/15 20:56	PJ1	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 03:15	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312673	11/14/15 03:20	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 17:14	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 14:14	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:12	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	313114	11/17/15 22:02	HMW	TAL CHI

Client Sample ID: VAP-HPT13(19-22)-110615

Lab Sample ID: 500-103708-2

Date Collected: 11/06/15 08:05
Matrix: Water
Date Received: 11/06/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	313184	11/19/15 14:30	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	50	313184	11/19/15 14:55	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 03:31	KML	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		10	312769	11/14/15 21:09	PJ1	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 03:34	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312673	11/14/15 03:39	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 17:28	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 14:18	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:16	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	313114	11/17/15 22:05	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT13(24-27)-110615

Lab Sample ID: 500-103708-3

Date Collected: 11/06/15 09:15
Date Received: 11/06/15 17:05

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	313184	11/19/15 15:20	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	20	313184	11/19/15 15:45	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 03:37	KML	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		10	312769	11/14/15 21:14	PJ1	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 03:44	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312673	11/14/15 03:49	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 17:33	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 14:29	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:20	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	313114	11/17/15 22:08	HMW	TAL CHI

Client Sample ID: VAP-HPT14(10-13)-110615

Lab Sample ID: 500-103708-4

Date Collected: 11/06/15 10:25
Date Received: 11/06/15 17:05

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313184	11/19/15 11:19	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 03:42	KML	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		10	312769	11/14/15 21:19	PJ1	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 03:54	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312673	11/14/15 03:59	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 17:40	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 14:33	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:31	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	313114	11/17/15 22:11	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT14(14-17)-110615

Lab Sample ID: 500-103708-5

Date Collected: 11/06/15 11:20
Date Received: 11/06/15 17:05

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313184	11/19/15 12:51	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 03:47	KML	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		10	312769	11/14/15 21:25	PJ1	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 04:03	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312673	11/14/15 04:09	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 17:45	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 14:37	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:35	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	313114	11/17/15 22:14	HMW	TAL CHI

Client Sample ID: VAP-HPT14(20-22)-110615

Lab Sample ID: 500-103708-6

Date Collected: 11/06/15 12:30
Date Received: 11/06/15 17:05

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313184	11/19/15 13:16	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 03:52	KML	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		10	312769	11/14/15 21:30	PJ1	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 04:13	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		10	312673	11/14/15 04:18	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 17:50	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 14:41	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:39	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	313114	11/17/15 22:16	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Client Sample ID: VAP-HPT15(10-13)-110615

Lab Sample ID: 500-103708-7
Date Collected: 11/06/15 13:30
Matrix: Water
Date Received: 11/06/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313184	11/19/15 10:27	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 03:57	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 04:31	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 17:56	PJ1	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		5	313206	11/17/15 18:29	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 14:45	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:43	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		4	313114	11/17/15 22:19	HMW	TAL CHI

Client Sample ID: VAP-HPT15(15-18)-110615

Lab Sample ID: 500-103708-8
Date Collected: 11/06/15 14:15
Matrix: Water
Date Received: 11/06/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313184	11/19/15 10:52	PMF	TAL CHI
Dissolved	Prep	3010A			312154	11/11/15 10:00	PFK	TAL CHI
Dissolved	Analysis	6010C		1	312671	11/14/15 04:03	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	312673	11/14/15 04:55	KML	TAL CHI
Total/NA	Prep	3010A			312031	11/10/15 16:24	PJH	TAL CHI
Total/NA	Analysis	6010C		1	313206	11/17/15 18:49	PJ1	TAL CHI
Dissolved	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	312422	11/12/15 15:02	MJD	TAL CHI
Total/NA	Prep	7470A			312211	11/11/15 17:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	312422	11/12/15 14:47	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			312925	11/17/15 19:10	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	313114	11/17/15 23:39	HMW	TAL CHI

Client Sample ID: TB-1(110615)

Lab Sample ID: 500-103708-9
Date Collected: 11/06/15 00:00
Matrix: Water
Date Received: 11/06/15 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	313184	11/19/15 10:02	PMF	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-103708-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address:
Address:
Phone: 312-525-3721
Fax:
E-Mail:

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-103708
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 0.4

Client: Arcadis
Client Project #: CI001805.0002.00003
Project Name: Lake Calumet Cluster Site
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Bruce Evans
Lab PM:

Preservative Key: 1° / 2 to 4° / 3 4° / 4 4° / 5 1 to 4°

500-103708 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs (Preservative 1)	Ammonia (Preservative 2)	Metals Total (Preservative 3)	Metals Dissolved (Filtered) (Preservative 3)						Comments
1		VAP-APT13(13-16)-110515	11/5/15	14:55	6	W	3	1	1	1						
2		VAP-APT13(19-22)-110615	11/6/15	08:05	6	W	3	1	1	1						
3		VAP-APT13(24-27)-110615	11/6/15	09:15	6	W	3	1	1	1						
4		VAP-APT14(10-13)-110615	11/6/15	10:25	6	W	3	1	1	1						
5		VAP-HPT14(14-17)-110615	11/6/15	11:20	6	W	3	1	1	1						
6		VAP-APT14(20-22)-110615	11/6/15	12:30	6	W	3	1	1	1						
7		VAP-HPT15(10-13)-110615	11/6/15	13:30	6	W	3	1	1	1						
8		VAP-HPT15(15-18)-110615	11/6/15	14:15	6	W	3	1	1	1						
9		TB-1(110615)	-	-	2	W	2									Trip Blank

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____ Standard

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	11-6-15	14:40	David Bedson	TA	11-6-15	14:40
David Bedson	TA	11-6-15	17:05	[signature]	TA-CHI	11/6/15	17:05
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA-CHI
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
1 Cooler/Samples on Ice
Questions: Call Jack Kratzmeyer
312-575-3721

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-103708-1

Login Number: 103708
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

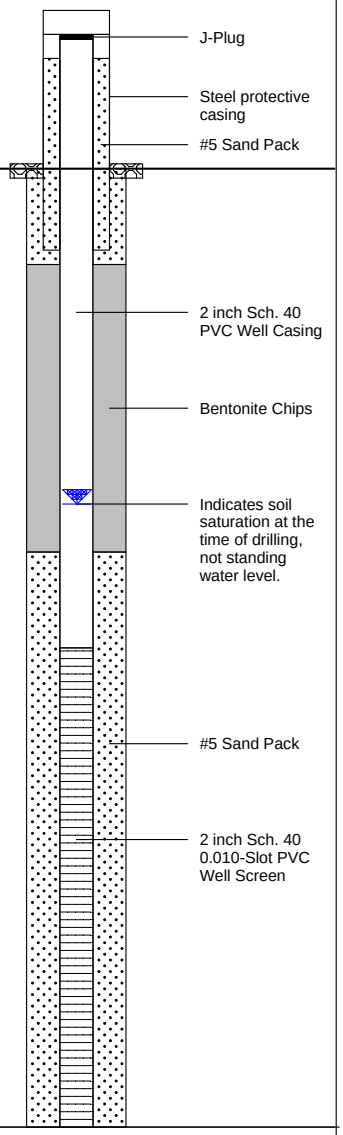
APPENDIX E

Monitoring Well Boring Logs and Construction Logs

Date Start/Finish: 03/10/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores, S. Baltus, & T. Mielenz **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1826586.99 **Easting:** 1193213.67 **Casing Elevation:** 603.49 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-01** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.5			SILTY CLAY and SAND (FILL): nonplastic; very stiff to hard; very fine to very coarse sand to granule; little small to large pebble; poorly sorted; subangular to subrounded; dense; crumbles easily; very dark grayish-brown; dry to moist.
2		0-4	2.3				
3				0.2			
4							
5				0.4			
6		4-8	3.2				
7				0.5			
8							SLAG and INDUSTRIAL WASTE (FILL): (8.0-10.0) Slag; coarse; medium sand to small pebble size; loosely consolidated; hard; trace glass; black.
9				0.9			
10		8-12	2.9		(FILL)		(10.0-16.7) Fly ash; nonplastic; soft to very soft; smooth and silt-like texture; trace to little coarse pieces; white; saturated.
11				0.9			
12							
13				2.1			
14		12-16	4.0				
15				2.6			
16							
17				1.6			(16.7-20.0) Slag; coarse (medium sand to small pebble size); loosely consolidated; hard; trace glass; trace wood fibers; black.
18		16-20	1.7				
19				2.0			
20							
21							END OF BORING AT 20 FT BGS

Well/Boring Construction



ARCADIS

Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

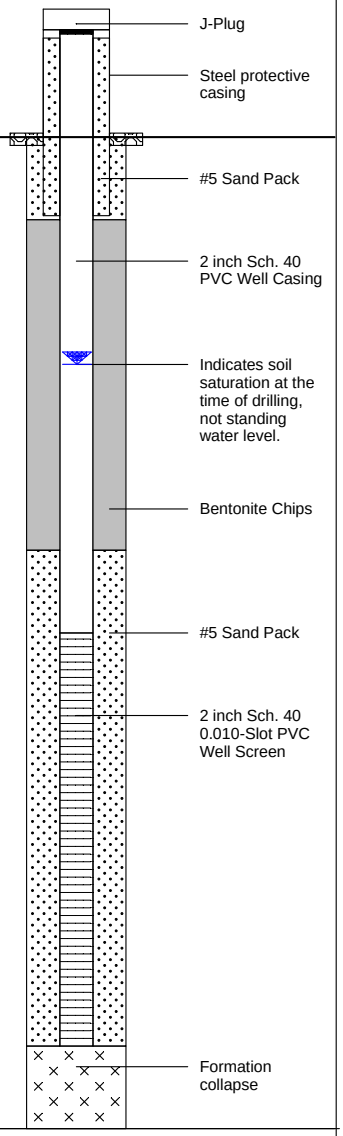
Interval descriptions expanded for full recovery.

MW-01 was installed adjacent to HPT-01.

Date Start/Finish: 03/10/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores, S. Baltus, & T. Mielenz **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1826567.95 **Easting:** 1193901.32 **Casing Elevation:** 598.71 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 24 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-02** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1		0-4	2.2	0.6	(FILL)		SILTY CLAY and SAND (FILL): nonplastic; very stiff to hard; very fine to very coarse sand to granule; little small to large pebble; poorly sorted; subangular to subrounded; very dense; trace roots; very dark grayish-brown; dry to moist.
2							
3				0.4			
4							
5		4-8	2.8	0.9			
6							(6.0) After 6 ft bgs, moist to wet.
7				0.5			
8							SLAG, FILL, and MUNICIPAL WASTE (FILL): slightly cohesive matrix; black; wet. (7.8-8.0) Wood fibers. (8.0-12.0) Wood, glass, plastic, and newspaper.
9							
10		8-12	0.5	107.2			
11							
12							(12.0-16.0) Plastic bags, hard plastic, wood, glass, and newspaper.
13				2.6			
14		12-16	1.3				
15				1.8			
16							NO RECOVERY Appears to be same material as above; very saturated.
17				NA			
18		16-20	0.0				
19				NA			
20					NA		
21				NA			
22		20-24	0.0				
23				NA			
24							
25							END OF BORING AT 24 FT BGS

Well/Boring Construction



ARCADIS

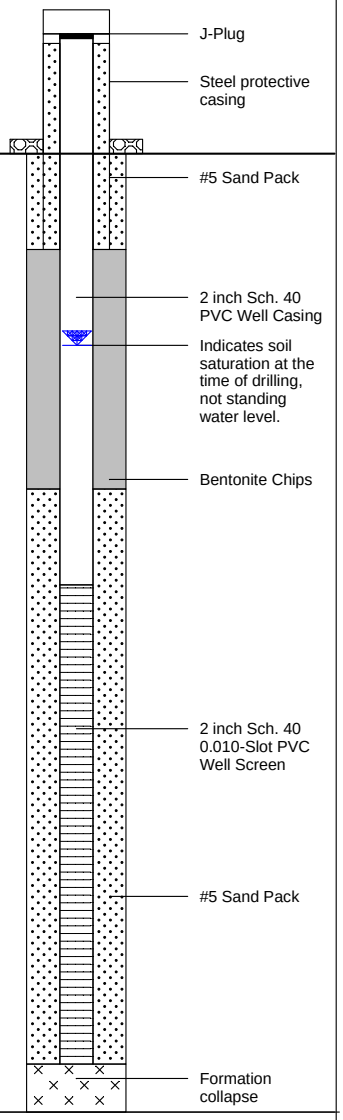
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

Interval descriptions expanded for full recovery.

MW-02 was installed adjacent to HPT-03.

Date Start/Finish: 03/07/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores, S. Baltus, & T. Meilenz **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1826618.92 **Easting:** 1194266.59 **Casing Elevation:** 594.67 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-03** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
							ORGANICS: Grass and rootlets.
1				0.6			SILTY CLAY and SAND to GRANULE (FILL): high plasticity; stiff to very stiff; medium to very coarse sand to granule; trace small pebble; poorly sorted; subangular to subrounded; dark grayish-brown; moist to wet. (1.5-1.9) Crushed gravel: subangular to subrounded; white. (1.9-4.0) Sand and gravel with silty clay; fine to coarse sand, granule, and small to large pebble; poorly sorted; subrounded; loose to very loose; some silty clay; nonplastic; brown; dry, wet after 4 ft bgs.
2		0-4	2.4				
3				2.3			
4							
5				3.8			SLAG, FILL, and INDUSTRIAL WASTE (FILL) (4.4-5.2) Slag; fine to very coarse sand to large pebble size; loose; hard; some sand; gray; wet. (5.2-5.6) Wood pieces, approximately 0.1 ft in length; yellow-brown; wet. (5.6-7.0) Silty clay; high plasticity; very stiff; trace medium sand; dark grayish-brown; dry to moist.
6		4-8	3.1				
7				0.9			(7.0-10.7) Sand and gravel in silty clay matrix; sand to large pebble size; poorly sorted; medium dense to dense; some silty clay; trace brick and wood pieces; dark brown to black; dry to moist.
8							
9				0.4			
10		8-12	2.3		(FILL)		
11				0.8			(10.7-11.9) Crushed gravel; granule to large pebble size; angular to subangular; loose; yellow-tan; saturated.
12							(11.9-14.6) Slag and sand; fine sand to granule size; poorly sorted; loose; little silt; nonplastic; black; saturated.
13				0.2			
14		12-16	1.2				
15				0.6			(14.6-16) Sand with silt; very fine grained sand to granule; poorly sorted; medium dense; some silt; nonplastic; light tan; dry.
16							(16-17.1) Sand; fine to coarse sand to granule; trace small to large pebble; poorly sorted; subangular to subrounded; loose; trace silt; dark gray matrix with multicolored grains; wet. (17.1-19.0) Slag; small to large pebble size; loose; hard; vesicular; little silt; black; wet.
17				0.6			
18		16-20	1.9				
19				20.8			(19.0-20.0) Slag with silty clay; very stiff to hard; black; wet.
20							
21							END OF BORING AT 20 FT BGS



ARCADIS

Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

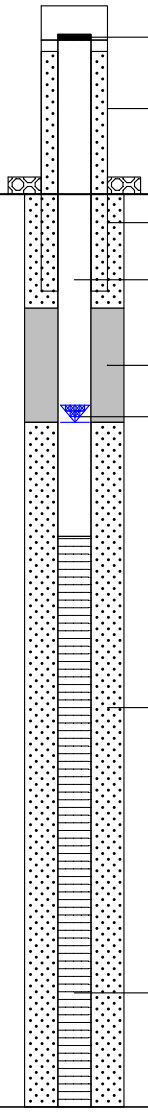
Interval descriptions expanded for full recovery.

MW-03 was installed adjacent to HPT-04.

Date Start/Finish: 03/07/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores, S. Baltus, & T. Meilenz **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1826441.42 **Easting:** 1194252.70 **Casing Elevation:** 597.49 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 16 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-04** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
							ORGANICS: Grass and rootlets; gray-brown; moist to wet.
1				0.9			SILTY CLAY and SAND to GRANULE (FILL): medium to high plasticity; stiff to very stiff; fine to very coarse sand to granule; trace small to large pebble; poorly sorted; subangular to subrounded; brown; moist to wet.
2		0-4	1.9				
3				0.9			
4							(4.0) After 4 ft bgs, transitions to dark gray.
5				1.1			
6		4-8	2.8				
7				2.2			SAND and GRANULE (FILL): fine to coarse sand and small to large pebble; poorly sorted; subangular to subrounded; loose; little silty clay; dark gray-brown.
8					(FILL)		SILTY CLAY (FILL) high plasticity; very stiff to hard; grayish-brown; moist to wet.
9				26.1			SLAG, FILL, and MUNICIPAL WASTE (FILL): Silty clay matrix with brick, slag, and fly ash; medium dense; dark gray to black; wet.
10		8-12	3.5				
11				117.0			
12							(12.0-13.1) Newspaper.
13				30.8			
14		12-16	1.9				
15				2.5			(14.9) Woody debris
							(15.9-16.0) Brick
16							
							END OF BORING AT 16 FT BGS
17							

Well/Boring Construction



ARCADIS

Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

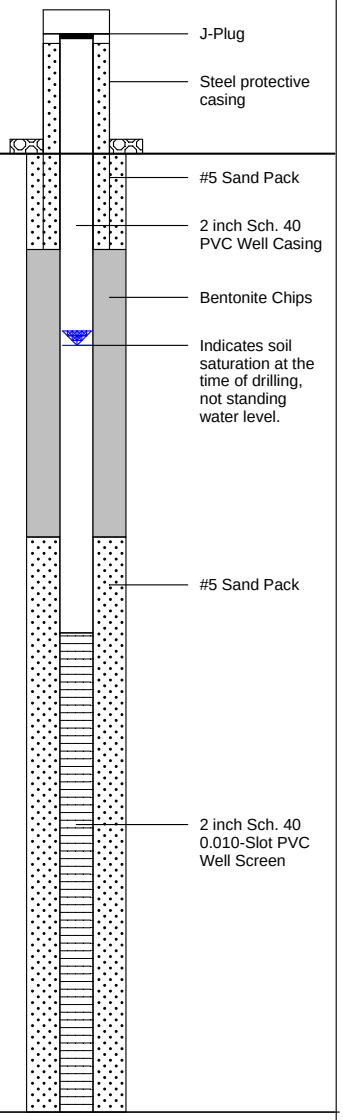
Interval descriptions expanded for full recovery.

MW-04 was installed adjacent to HPT-05.

Date Start/Finish: 03/07/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores, S. Baltus, & T. Meilenz **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1825923.75 **Easting:** 1194263.33 **Casing Elevation:** 594.08 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 20 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-05** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1		0-4	1.1	0.1	(FILL)		SILTY CLAY and SAND (FILL): high plasticity; soft; little granule; little small to large pebble; poorly sorted; subangular to subrounded; trace organics; grayish-brown; moist to wet.
2							(1.4) At 1.4 ft bgs, crushed gravel.
3				0.2			
4		4-8	1.3				SLAG, FILL, and INDUSTRIAL WASTE (FILL): silty clay matrix; soft; dark grayish-brown to black; wet.
5				1.2			(4.6) White plastic, up to 0.1-inch shards. (4.6-5.9) Glass pieces.
6							(6.2-8.0) Newspaper and slag.
7				2.1			
8		8-12	0.4				(8.0-12.0) Plastic bag-like material and cloth.
9				2.2			
10							
11				4.2			
12		12-16	0.7				(12.0-14.9) Sand and slag.
13				4.9			
14							
15				2.8			(14.9-16.0) Plastic bag-like material.
16		16-20	1.4				(16.0- 17.2) Wood fragments.
17				4.8			
18							(17.2-20.0) Very fine grained sand; well sorted; medium dense to dense; trace silt; dark gray; wet.
19				1.6			
20							
21							END OF BORING AT 20 FT BGS

Well/Boring Construction



ARCADIS

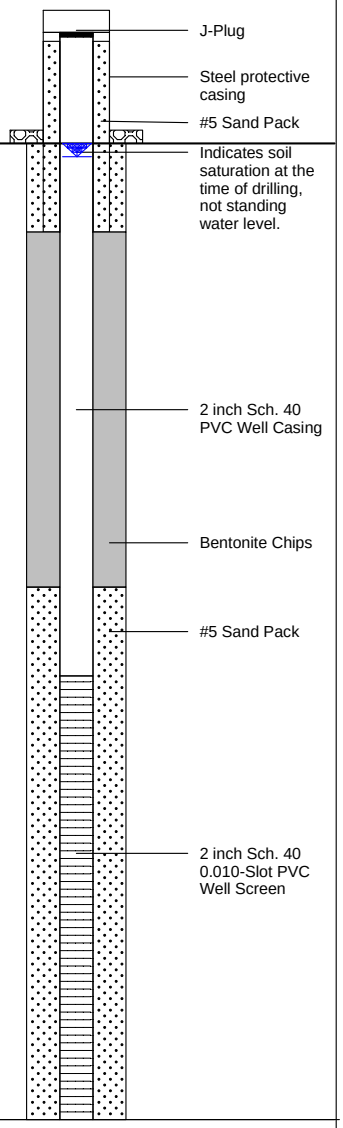
Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

Interval descriptions expanded for full recovery.

MW-05 was installed adjacent to HPT-08.

Date Start/Finish: 03/07/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores, S. Baltus, & T. Meilenz **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1825371.40 **Easting:** 1194276.83 **Casing Elevation:** 592.46 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 22 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-06** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.7			ORGANICS: Grass and rootlets; wet. SILTY CLAY and SAND (FILL): medium to high plasticity; stiff to very stiff; fine to coarse sand and granule; poorly sorted; subangular to subrounded; trace small to large pebble; trace organics; dark grayish-brown; moist to wet.
2		0-4	1.7				
3				0.8			
4							
5				5.7			SLAG, FILL, and MUNICIPAL WASTE: silty clay matrix. (4.7-5.4) Crushed gravel; angular. (5.4-6.0) Fly ash; trace organics; white; wet. (6.0-9.3) Silt; nonplastic; soft; very stilty; little sand and small to large pebble; brown to red-brown; wet; wood pieces after 8 ft bgs.
6		4-8	2.3		(FILL)		
7				9.3			
8							
9				8.9			(9.3-9.7) Plastic pieces; hard; white and clear. (9.7-10.6) Newpaper pulp; yellow.
10		8-12	1.2				(10.6-11.0) Cinders; coarse sand size; angular; flat; black and white.
11				26.3			(11.0-12.0) Newspaper pulp; yellow.
12							NO RECOVERY
13				NA			
14		12-16	0				
15				NA			
16							
17				NA	NA		
18		16-20	0				
19				NA			
20							
21		20-22	0	NA			
22							
23							END OF BORING AT 22 FT BGS



ARCADIS

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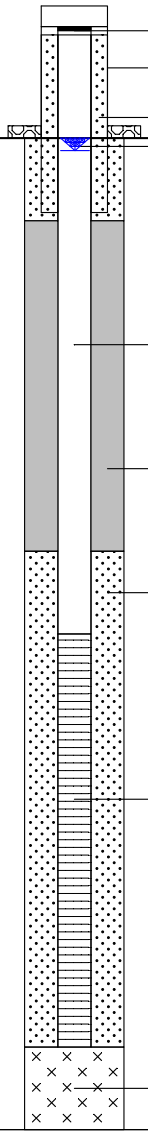
Interval descriptions expanded for full recovery.

MW-06 was installed adjacent to HPT-11.

Date Start/Finish: 03/08/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1824977.47 **Easting:** 1194274.77 **Casing Elevation:** 593.61 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 24 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-07** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.7			ORGANICS: Grass and roots; wet.
2		0-4	1.7				SILTY CLAY and SAND (FILL): medium to high plasticity; very stiff/very dense; some fine to very coarse sand; little granule; trace small to large pebble; poorly sorted; subangular to subrounded; brown; moist to wet.
3				0.8			SLAG (FILL): vesicular; gray.
4							
5				0.7			SILTY CLAY (FILL): medium to high plasticity; very stiff to hard; trace medium to coarse sand and granule; brown; moist to wet.
6		4-8	3.0				
7				0.7			
8							
9				1.0			
10		8-12	1.1				
11				2.3			SLAG, FILL, and MUNICIPAL WASTE (FILL): silty clay matrix; loosely consolidated; black; oversaturated. (10.5-12.0) Newspaper pulp. (12.0-16.0) Newspaper pulp, trace glass, and wood.
12					(FILL)		
13				14.8			
14		12-16	1.2				
15				12.5			
16							(16.0-18.0) Newspaper pulp, wood, and metal wires.
17							
18		16-20	0.6	16.9			(18.0-24.0) Ashes/cinders; very fine grained; soft; dense to medium dense; can be broken by hand; light gray.
19							
20							
21							
22		20-24	0.2	10.9			
23							
24							
25							END OF BORING AT 24 FT BGS



ARCADIS

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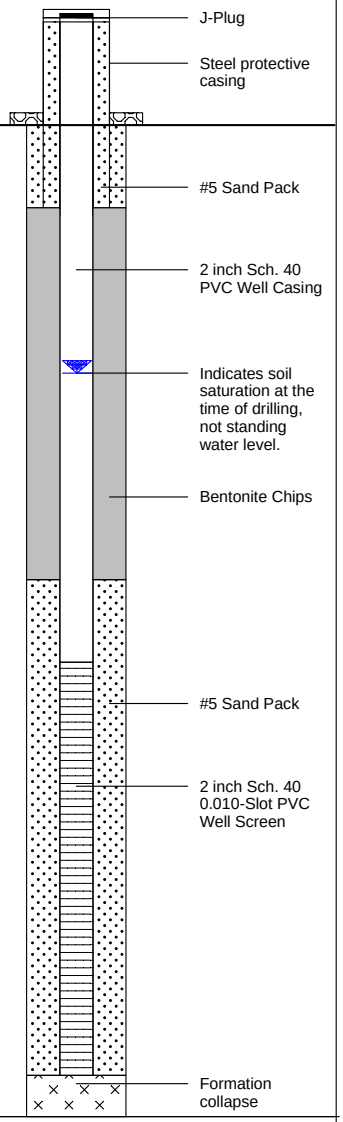
Interval descriptions expanded for full recovery.

MW-07 was installed adjacent to HPT-13.

Date Start/Finish: 03/08/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1824728.00 **Easting:** 1194162.91 **Casing Elevation:** 604.11 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 24 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-08** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4, -3, -2, -1, 0	0						
1		0-4	1.9	2.3	(FILL)		SILTY CLAY and SAND (FILL): medium plasticity; stiff to very stiff; some fine to coarse sand; little granule; trace medium to large pebble; poorly sorted; subangular to subrounded; gray-brown; moist.
2							
3				0.7			
4		4-8	1.0				
5				0.7			
6							(6.0) After 6 ft bgs, low to medium plasticity; soft; black; wet.
7				1.4			
8							
9		8-12	2.6	1.1			SILTY CLAY and SAND (FILL): medium plasticity; very stiff to hard; some fine to coarse sand; little granule; trace to little medium to large pebble; poorly sorted; subangular to subrounded; trace municipal garbage; dark grayish-brown; moist. (8.0) Plastic bag-like material. (9.7-10.0) Brick and slag; red and gray.
10							
11				1.1			
12							
13		12-16	2.6	1.2			CLAY: high plasticity; stiff to medium stiff; very pliable; little silt; little sand and granule; little to trace small to large pebble; poorly sorted; subangular to subrounded; dark grayish-brown; moist to wet.
14							
15				1.1			
16							SLAG, FILL, and MUNICIPAL WASTE (FILL): with silty clay matrix; little fine sand; little organics; dark brown; wet. (15.5-15.9) Paper pulp and plastic bag-like material in matrix. (16.0-17.4) Glass shards (~0.25-inch length); clear; in matrix. (17.4-17.5) Slag; coarse; brown to black. (17.5-18.4) Sand; very fine grained; well sorted; some to little silty clay; low to medium plasticity; medium stiff/medium dense; trace brick; gray-brown; wet. (18.4-18.9) Clay and silt; high plasticity; very stiff; gray-brown; moist. (18.9-19.1) Paper pulp and very fine sand. (19.1-21.9) Clay and silt; high plasticity; very stiff; gray-brown; moist.
17		16-20	2.8	0.8			
18							
19				1.8			
20							
21		20-24	1.7	1.5			(21.9-24.0) Paper pulp and very fine grained sand, styrofoam, hard and soft plastic, and wood; black to greenish to reddish.
22							
23				3.4			
24							
25							END OF BORING AT 24 FT BGS



ARCADIS

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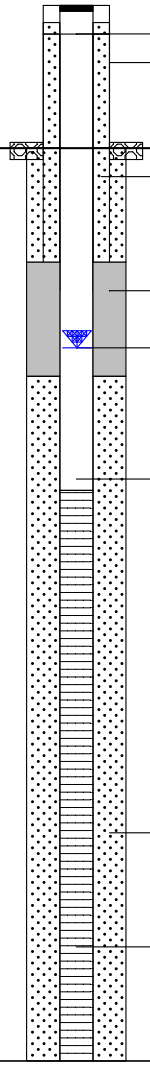
Interval descriptions expanded for full recovery.

MW-08 was installed between HPT-14 and HPT-15.

Date Start/Finish: 03/08/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1824689.01 **Easting:** 1193593.64 **Casing Elevation:** 597.89 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 16 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-09** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				1.0			SILTY CLAY and SAND (FILL): low plasticity to nonplastic; stiff to very stiff; some very fine to coarse sand to granule; little to trace small to large pebble; poorly sorted; subangular to subrounded; crumbles; grayish-brown; dry.
2		0-4	1.7				
3				1.1			(3.5) After 3.5 ft bgs, moist to wet.
4							
5				0.9			
6		4-8	0.9				
7				1.2			SLAG, FILL, and MUNICIPAL WASTE (FILL) (6.2-7.1) Paper pulp; yellowish. (7.1-8.0) Slag; very coarse, granule-size; black; saturated.
8					(FILL)		(8.0-8.7) Slag; fine to coarse sand to granule size; medium dense; black; saturated.
9				1.5			(8.7-9.3) Plastic bag-like material. (9.3-15.4) Slag; coarse; trace wood fibers at bottom of interval; black; saturated.
10		8-12	2.8				
11				1.1			
12							
13				1.3			
14		12-16	1.7				
15				2.0			(15.4-16.0) Sand and silt; very fine grained sand; well sorted; soft; medium dense to dense; very dark gray to black; wet.
16							END OF BORING AT 16 FT BGS
17							

Well/Boring Construction



ARCADIS

Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

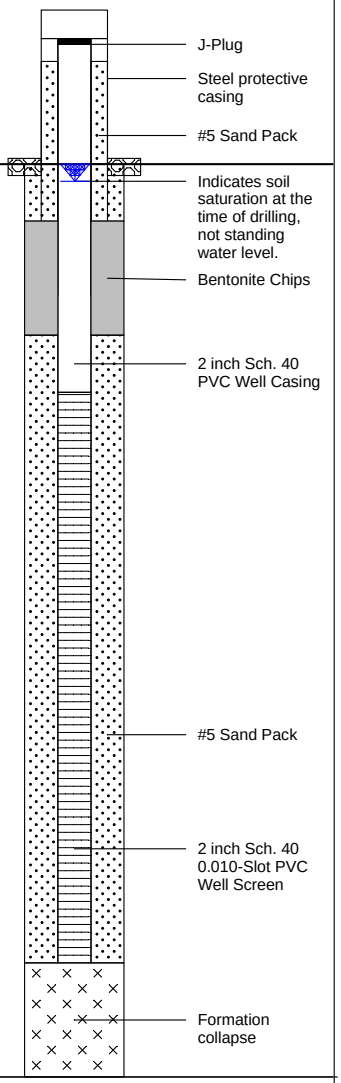
Interval descriptions expanded for full recovery.

MW-09 was installed adjacent to HPT-17.

Date Start/Finish: 03/08/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1824700.70 **Easting:** 1193129.83 **Casing Elevation:** 597.54 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 16 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-10** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.8			SILTY CLAY and SAND (FILL): medium to high plasticity; stiff to very stiff; some fine to coarse sand and granule; little small to large pebble; trace organics; trace clear glass (~0.25-inch length); brown; moist to wet.
2		0-4	1.6				
3				0.9			SLAG, FILL, and MUNICIPAL WASTE (FILL): silty clay matrix; some sand and small to large pebble; wet. (2.5-4.0) Matrix and glass shards, slag, wood, newspaper pulp, and brick powder; very dark brown to reddish-brown. (4.0-8.0) Matrix and glass shards, wood pulp, plastic bag-like material, and brick fragments; very dark brown to black.
4							
5				0.9			
6		4-8	1.1				
7				0.8			
8					(FILL)		(8.0-12.0) Wood pulp, slag, and brick fragments.
9							
10		8-12	0.6	1.9			
11							
12							
13				NA			NO RECOVERY Appears to be same as above interval from material on liner.
14		12-16	0.0				
15				NA			
16							
17							END OF BORING AT 16 FT BGS

Well/Boring Construction



ARCADIS

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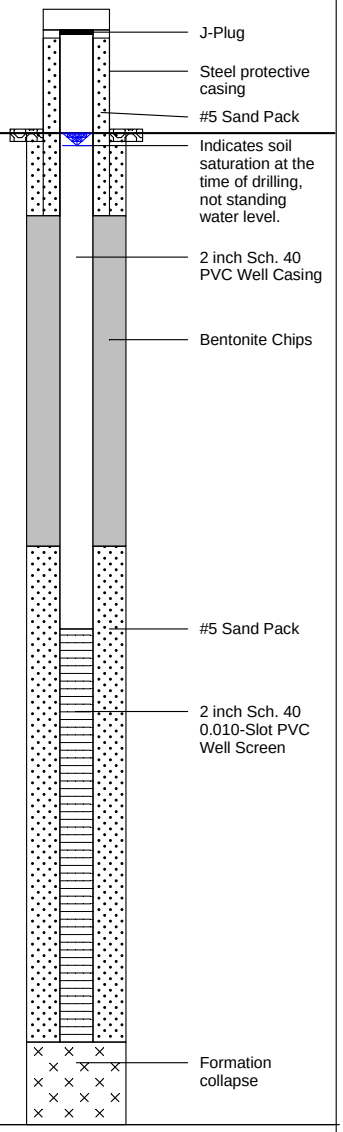
Interval descriptions expanded for full recovery.

MW-19 was installed adjacent to HPT-19.

Date Start/Finish: 03/09/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1825045.97 **Easting:** 1192802.41 **Casing Elevation:** 603.23 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 24 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-11** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1		0-4	2.6	0.1	(FILL)		ORGANICS: Grass and roots.
2							SILTY CLAY and SAND (FILL): low plasticity; medium stiff; some fine to coarse grained sand; little granule; trace small to medium pebble; poorly sorted; angular to subangular; trace organics; dark grayish-brown to 0.5 ft bgs, then black; wet.
3				0.1			SAND (FILL): fine to medium sand; well to moderately sorted; subrounded; loose to medium dense; trace coarse sand; trace silt; dark grayish-brown; wet.
4		4-8	2.5				
5				11.9			SILTY CLAY and SAND (FILL): low plasticity; medium stiff; fine to medium sand; little granule; trace small to large pebble; poorly sorted; subangular to subrounded; dark grayish-brown; wet.
6							SILTY CLAY (FILL): medium plasticity; very stiff to hard; trace fine to coarse sand; trace granule; angular; very dark grayish-brown; moist.
7				125.8			SLAG, FILL, and MUNICIPAL WASTE (FILL): (5.4-6.9) Silty black matrix; glass, gravel, and ashes; dry to moist. (6.9-8.0) Silty clay; high plasticity; stiff; grayish-brown; moist. (8.0-10.4) Paper pulp, sand, glass shards, and silt; dark brown to black; moist.
8							
9		8-12	1.8	392.0			
10							(10.4-12.0) Slag; coarse; semi-consolidated; in matrix of silt, paper pulp, sand, and glass shards; black.
11				18.5			
12							(12.0-16.0) Slag; coarse; loose; red-brown to black; oversaturated.
13							
14		12-16	0.6	4.4			
15							
16							
17				NA	NA		NO RECOVERY Liners appear to have contained same supersaturated slag, fill, and municipal waste as above; black.
18		16-20	<0.1				
19				NA			
20							
21				NA			
22		20-24	0.0				
23				NA			
24							
25							END OF BORING AT 24 FT BGS



ARCADIS

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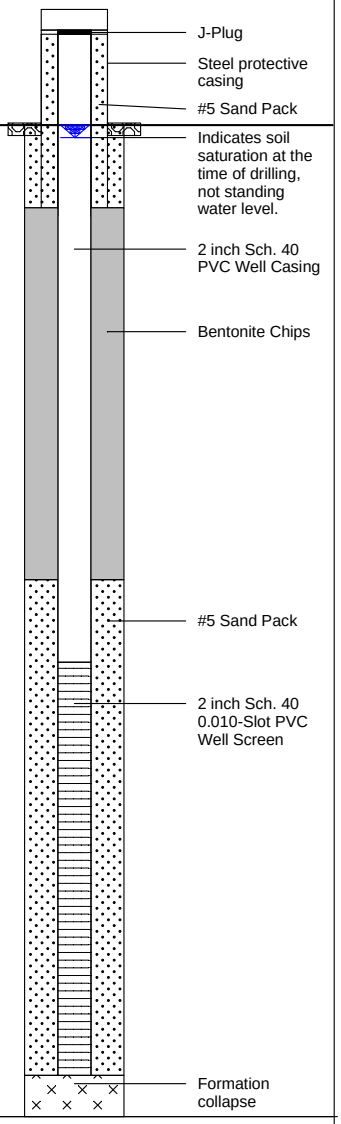
Interval descriptions expanded for full recovery.

MW-11 was installed adjacent to HPT-18.

Date Start/Finish: 03/09/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1825673.70 **Easting:** 1192587.07 **Casing Elevation:** 604.66 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 24 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-12** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				1.3			SAND and SILTY CLAY (FILL): low plasticity; soft; very fine grained sand; well sorted; little organics; dark brown; wet.
2		0-4	2.0				SAND (FILL): very fine sand; well sorted; medium dense; subrounded; dark brown.
3				0.9			SILTY CLAY and SAND (FILL): low plasticity; medium stiff to hard; fine to coarse sand and granule; little small to large pebble; subangular to subrounded; dark brown to black; moist.
4							
5				1.6			SAND (FILL): fine to coarse grained sand; poorly sorted; subrounded; loose to very loose; light brown.
6		4-8	3.0				CLAYEY SILT (FILL): low plasticity; very stiff to hard; light gray; dry to moist.
7				8.5			SLAG, FILL, and MUNICIPAL WASTE (FILL): silty matrix; soft; black to dark brown; oversaturated. (5.7-10.1) Slag, wood, glass shards, and brick rubble.
8							
9				4.9			
10		8-12	4.0				(10.1-13.7) Silt-like material with luster; very soft; cohesive; reddish-brown with black blotches.
11				243.0			
12					(FILL)		
13				146.0			
14		12-16	3.0				(13.7-16.0) Silt, paper pulp, and glass; black.
15				1,299			
16							(16.0-20.0) Silt, paper pulp, glass, and visible fibers; black.
17				13,010			
18		16-20	2.6				
19				11,060			
20							(20.0-22.0) Silt-like material with luster; very soft; cohesive; reddish-brown with black blotches.
21				3,740			
22		20-24	1.2				(22.0-24.0) Slag; gray.
23				8,659			
24							
25							END OF BORING AT 24 FT BGS



ARCADIS

Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

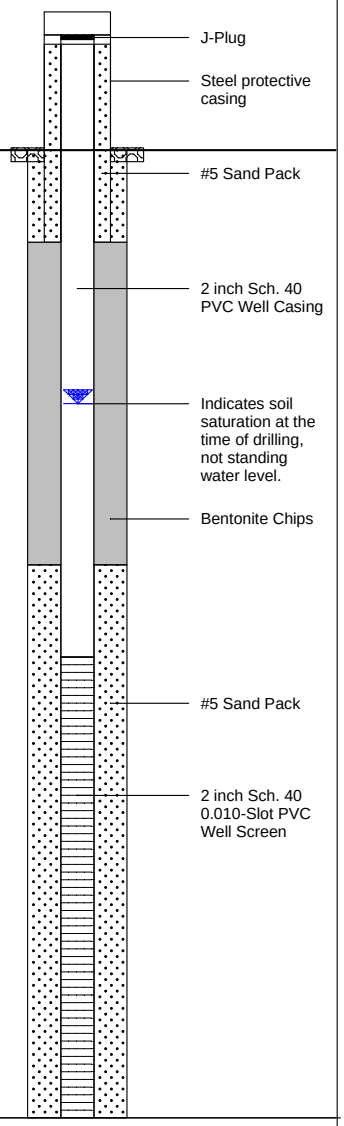
Interval descriptions expanded for full recovery.

MW-12 was installed adjacent to HPT-20.

Date Start/Finish: 03/09/2016 **Drilling Company:** ENVIRO-DYNAMICS, LLC **Driller's Name:** R. Mores & S. Baltus **Drilling Method:** Direct Push & HSA **Sampling Method:** 4 ft Macrocore **Rig Type:** Geoprobe 7822DT	**Northing:** 1826265.77 **Easting:** 1192755.15 **Casing Elevation:** 604.08 ft AMSL **Surface Elevation:** --- **Borehole Depth:** 21 ft bgs **Descriptions By:** M. Schettler	**Well/Boring ID:** **MW-13** **Client:** Lammers Barrel Performing Parties **Location:** Lake Calumet Cluster Site Chicago, Illinois

DEPTH (ft bgs)	ELEVATION (ft AMSL)	Sample Interval (feet)	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description
-4							
-3							
-2							
-1							
0	0						
1				0.3			SILTY CLAY and SAND (FILL): low plasticity; very stiff to hard; some fine to coarse sand and granule; little small to large pebble; poorly sorted; subangular to subrounded; dense; dark grayish-brown; dry to moist.
2		0-4	2.9				
3				0.3			
4							
5				0.8			
6		4-8	3.0				
7				0.5			
8							
9				0.5			SILTY CLAY (FILL): medium to high plasticity; stiff to very stiff; trace to little coarse sand and granule; dark grayish-brown; moist to wet.
10		8-12	3.1		(FILL)		
11				0.7			
12							
13				1.3			
14		12-16	2.7				
15				823.0			SLAG, FILL, and INDUSTRIAL WASTE (FILL): matrix medium dense; loosely consolidated; black; wet. (14.0-16.0) Slag; coarse; trace glass pieces. (16.0-20.0) Slag; coarse; with soft plastic, crushed brick, glass, and ashes.
16							
17				3,493			
18		16-20	1.8				
19				963.0			
20							
		20-21	0.0	NA	NA		NO RECOVERY Macrocore not collected.
21							
							END OF BORING AT 21 FT BGS
22							

Well/Boring Construction



ARCADIS

Remarks: ft = feet; in = inches; bgs = below ground surface; ags = above ground surface; ppm = parts per million; na = not applicable/not available; HSA = hollow-stem auger; AMSL = above mean sea level.

Interval descriptions expanded for full recovery.

MW-13 was installed adjacent to HPT-22.

APPENDIX F

Groundwater Monitoring Data Validation and Laboratory Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-110798-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
5/11/2016 4:08:55 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-110798-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-110798-1

Comments
No additional comments.

Receipt
The samples were received on 4/27/2016 4:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.8º C and 3.1º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 500-334714 was outside the method criteria for the following analyte: Hexachlorocyclopentadiene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 500-334925 was outside the method criteria for 8 analytes. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS associated with preparation batch 500-333076 and analytical batch 500-334925 had 3 analytes outside control limits: Hexachlorobutadiene, Hexachlorocyclopentadiene, and Hexachloroethane; therefore, corrective action was not performed. These results have been reported and qualified.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 500-334714 was outside the method criteria for 6 analytes. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method(s) 8270D: The following sample required a dilution due to the nature of the sample matrix: MW-3-GW-04272016 (500-110798-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-3-GW-04272016 (500-110798-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: Perylene-d12 (ISTD) responses fell below the QC limit for the following sample:MW-4-GW-04272016 (500-110798-2). For the associated analytes, the chromatograms and mass spectra have been evaluated. Analytes associated to this internal standard fell below the reporting limit; therefore re-extraction/re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: Tetrachloro-m-xylene surrogate recovery for the following samples were outside the upper control limit: MW-3-GW-04272016 (500-110798-1) and MW-4-GW-04272016 (500-110798-2). This sample did not contain any target analytes; therefore, re-extraction and re-analysis was not performed.

Job ID: 500-110798-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-3-GW-04272016 (500-110798-1), MW-4-GW-04272016 (500-110798-2) and MW-5-GW-04272016 (500-110798-3). The reagent lot number used was: 135581.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 333763 recovered below and outside the control limit for PCB 1260, peak 2, with a %D of -21%. The majority of samples associated with this CCV were non-detects for the affected analytes. The samples that had hits had sample results of less than 40% D between columns and internal standard recoveries within control limits; therefore, the data have been reported. The following samples are impacted: MW-3-GW-04272016 (500-110798-1), MW-4-GW-04272016 (500-110798-2) and MW-5-GW-04272016 (500-110798-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The low-level CCV at line 125 in 6010C batch 500-333246 was above the method acceptance limits of 70-130% recovery for Arsenic. The sample MW-3-GW-04272016 (500-110798-1), MW-4-GW-04272016 (500-110798-2) and MW-5-GW-04272016 (500-110798-3) was bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits. The samples were non-detects for Arsenic; the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016 — Lab Sample ID: 500-110798-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	250		10	2.9	ug/L	20		8260B	Total/NA
Ethylbenzene	42		10	3.7	ug/L	20		8260B	Total/NA
Toluene	280		10	3.0	ug/L	20		8260B	Total/NA
Xylenes, Total	290		20	4.4	ug/L	20		8260B	Total/NA
1,1'-Biphenyl	38		20	1.5	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	280		40	7.3	ug/L	5		8270D	Total/NA
2-Methylphenol	180		8.1	1.2	ug/L	5		8270D	Total/NA
Acenaphthene	29		4.0	1.2	ug/L	5		8270D	Total/NA
Acenaphthylene	3.7	J	4.0	1.1	ug/L	5		8270D	Total/NA
Anthracene	12		4.0	1.3	ug/L	5		8270D	Total/NA
Carbazole	140		20	1.4	ug/L	5		8270D	Total/NA
Dibenzofuran	56		8.1	1.1	ug/L	5		8270D	Total/NA
Fluoranthene	7.1		4.0	1.8	ug/L	5		8270D	Total/NA
Fluorene	83		4.0	0.98	ug/L	5		8270D	Total/NA
Phenanthrene	69		4.0	1.2	ug/L	5		8270D	Total/NA
Phenol	85		20	2.7	ug/L	5		8270D	Total/NA
Pyrene	4.7		4.0	1.7	ug/L	5		8270D	Total/NA
2-Methylnaphthalene - DL	360		4.0	0.53	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol - DL	280		16	3.6	ug/L	10		8270D	Total/NA
Naphthalene - DL2	3600		81	25	ug/L	100		8270D	Total/NA
Arsenic	0.0074	J ^	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.62		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.00097	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	58		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	7.4		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0024	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	80		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.33		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0068	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	53		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	280		1.0	0.43	mg/L	1		6010C	Total/NA
Arsenic	0.0046	J ^	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.61		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	57		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	7.3		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	79		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.31		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0063	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	52		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	270		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	50		10	4.0	mg/L	2		9038	Total/NA
Total Organic Carbon - Duplicates	21		1.0	0.23	mg/L	1		9060A	Total/NA
Total Suspended Solids	6.5		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	32	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.0091	J B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: MW-4-GW-04272016 — Lab Sample ID: 500-110798-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	11		1.0	0.41	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016 (Continued) — Lab Sample ID: 500-110798-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	56		1.0	0.39	ug/L	1		8260B	Total/NA
Acetone	19		5.0	1.7	ug/L	1		8260B	Total/NA
Carbon disulfide	9.3		2.0	0.45	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	3.4		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	0.97	J	1.0	0.49	ug/L	1		8260B	Total/NA
Ethylbenzene	2.6		0.50	0.18	ug/L	1		8260B	Total/NA
Methyl acetate	110		5.0	2.0	ug/L	1		8260B	Total/NA
Toluene	13		0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	0.72		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	5.2		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	3.5		1.0	0.22	ug/L	1		8260B	Total/NA
Benzene - DL	490		5.0	1.5	ug/L	10		8260B	Total/NA
2,4-Dimethylphenol	13		8.4	1.5	ug/L	1		8270D	Total/NA
2-Methylphenol	5.0		1.7	0.26	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	9.5		1.7	0.38	ug/L	1		8270D	Total/NA
Naphthalene	2.4		0.84	0.26	ug/L	1		8270D	Total/NA
Phenol	4.3		4.2	0.56	ug/L	1		8270D	Total/NA
PCB-1221	0.93		0.41	0.20	ug/L	1		8082A	Total/NA
PCB-1232	1.8		0.41	0.20	ug/L	1		8082A	Total/NA
Arsenic	0.0066	J ^	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.063		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	240		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	1.1		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0026	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	98		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	2.2		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	13		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	470		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0026	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Arsenic	0.0050	J ^	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.063		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	240		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0022	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	0.69		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0031	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	97		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	2.2		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0037	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	13		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	460		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0022	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	3.2		1.0	0.22	mg/L	1		9034	Total/NA
Sulfate	640		130	50	mg/L	25		9038	Total/NA
Total Organic Carbon - Duplicates	100		4.0	0.92	mg/L	4		9060A	Total/NA
Total Suspended Solids	7.0		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	0.31	B	0.20	0.043	mg/L	1		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.011	J B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016 — Lab Sample ID: 500-110798-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	4.0		1.0	0.36	ug/L	1		8260B	Total/NA
Chlorobenzene	4.6		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.4		1.0	0.49	ug/L	1		8260B	Total/NA
Isopropylbenzene	36		1.0	0.39	ug/L	1		8260B	Total/NA
Xylenes, Total	0.73	J	1.0	0.22	ug/L	1		8260B	Total/NA
2-Methylnaphthalene	0.64		0.40	0.053	ug/L	1		8270D	Total/NA
Acenaphthene	0.31	J	0.81	0.25	ug/L	1		8270D	Total/NA
Fluorene	0.20	J	0.81	0.20	ug/L	1		8270D	Total/NA
Naphthalene	0.64	J	0.81	0.25	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	1.2		0.81	0.30	ug/L	1		8270D	Total/NA
Barium	0.96		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.00094	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	88		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	28		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.097		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0043	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	47		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	170		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.91		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	82		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	26		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	110		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.093		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0040	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	45		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	170		1.0	0.43	mg/L	1		6010C	Dissolved
Total Organic Carbon - Duplicates	18		1.0	0.23	mg/L	1		9060A	Total/NA
Total Suspended Solids	72		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	57	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.010	J B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

This Detection Summary does not include radiochemical test results.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 6, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-110798-1**

Pace Workorder: 18927

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, April 29, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 05/06/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 95

CERTIFICATE OF ANALYSIS

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without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 18927 500-110798-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received
189270001	MW-3-GW-04272016	Water	4/27/2016 09:52	4/29/2016 11:00
189270002	MW-4-GW-04272016	Water	4/27/2016 12:17	4/29/2016 11:00
189270003	MW-5-GW-04272016	Water	4/27/2016 14:30	4/29/2016 11:00

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ANALYTICAL RESULTS

Workorder: 18927 500-110798-1

Lab ID: 189270001 Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: MW-3-GW-04272016 Date Collected: 4/27/2016 09:52

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**18000**	ug/l	0.50	0.033	1	4/30/2016 12:10	TD	n
Carbon Dioxide	**19**	mg/l	5.0	0.26	1	4/30/2016 12:09	TD	n
Oxygen	**2.5**	mg/l	0.50	0.097	1	4/30/2016 12:09	TD	n
Nitrogen	**8.2**	mg/l	2.0	0.20	1	4/30/2016 12:09	TD	n

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ANALYTICAL RESULTS

Workorder: 18927 500-110798-1

Lab ID: 189270002 Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: MW-4-GW-04272016 Date Collected: 4/27/2016 12:17

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	17000	ug/l	0.50	0.033	1	4/30/2016 12:23	TD	n
Carbon Dioxide	27	mg/l	5.0	0.26	1	4/30/2016 12:23	TD	n
Oxygen	1.0	mg/l	0.50	0.097	1	4/30/2016 12:23	TD	n
Nitrogen	8.4	mg/l	2.0	0.20	1	4/30/2016 12:23	TD	n

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ANALYTICAL RESULTS

Workorder: 18927 500-110798-1

Lab ID: 189270003 Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: MW-5-GW-04272016 Date Collected: 4/27/2016 14:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	14000	ug/l	0.50	0.033	1	4/30/2016 12:35	TD	n
Carbon Dioxide	230	mg/l	5.0	0.26	1	4/30/2016 12:35	TD	n
Oxygen	1.7	mg/l	0.50	0.097	1	4/30/2016 12:35	TD	n
Nitrogen	7.0	mg/l	2.0	0.20	1	4/30/2016 12:35	TD	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 18927 500-110798-1

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAx, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 18927 500-110798-1

QC Batch: DISG/5334 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 189270001, 189270002, 189270003

METHOD BLANK: 41624

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 41625

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 41626 41628

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	810	740	109	100	80-120	8.6	20	n

LABORATORY CONTROL SAMPLE & LCSD: 41627 41629

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	110	110	80-120	0	20	n
Oxygen	mg/l	11	12	11	109	94	80-120	15	20	n
Nitrogen	mg/l	140	130	120	92	86	80-120	6.7	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 18927 500-110798-1

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 18927 500-110798-1

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
189270001	MW-3-GW-04272016			AM20GAX	DISG/5334
189270002	MW-4-GW-04272016			AM20GAX	DISG/5334
189270003	MW-5-GW-04272016			AM20GAX	DISG/5334

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Chain of Custody Documents

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

18927

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

WO 18927

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-72732.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-110798-1
Address: 220 William Pitt Way,	Due Date Requested: 5/9/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-3-GW-04272016 (500-110798-1)	4/27/16	09:52 Central		Water			X	2	
MW-4-GW-04272016 (500-110798-2)	4/27/16	12:17 Central		Water			X	2	
MW-5-GW-04272016 (500-110798-3)	4/27/16	14:30 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 04/28/16 1600	Company: TAL	Received by:	Date/Time: 4.29.16 11 00	Company: PASS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Cooler Receipt Form

Client Name: TA Chicago Project: 500-110798-1 Lab Work Order: 18927

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 6514 8423 6383

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: EJ Date: 4.29.16

Project Manager Review: AO Date: 4-30-16

F-PAE-Q-009-rev.00, 20 Nov2014

WO 18927

Sample Tracking Record

Client Name: Test America

Page ____ of ____

Client Project Number: 500-110798-1

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas				
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
18927/1-3				see above	LY	4.29.16	11:00
18927 0001→3	TJ	4-30-16	5:00		~~1400~~ TJ	4-30-16	1400

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

WO 18927

1

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI
Local Method	General Sub Contract Method	NONE	SC0015

Protocol References:

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

SC0015 = Pace-Pittsburgh (Microseeps), 220 William Pitt Way, Pittsburgh, PA 15238, TEL (412)826-5245

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-110798-1	MW-3-GW-04272016	Water	04/27/16 09:52	04/27/16 16:20
500-110798-2	MW-4-GW-04272016	Water	04/27/16 12:17	04/27/16 16:20
500-110798-3	MW-5-GW-04272016	Water	04/27/16 14:30	04/27/16 16:20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Lab Sample ID: 500-110798-1

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<20		20	7.6	ug/L			05/10/16 18:31	20
1,1,2,2-Tetrachloroethane	<20		20	8.0	ug/L			05/10/16 18:31	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<20		20	9.2	ug/L			05/10/16 18:31	20
1,1,2-Trichloroethane	<20		20	7.0	ug/L			05/10/16 18:31	20
1,1-Dichloroethane	<20		20	8.2	ug/L			05/10/16 18:31	20
1,1-Dichloroethene	<20		20	7.8	ug/L			05/10/16 18:31	20
1,2,4-Trichlorobenzene	<20		20	6.8	ug/L			05/10/16 18:31	20
1,2-Dibromo-3-Chloropropane	<100		100	40	ug/L			05/10/16 18:31	20
1,2-Dibromoethane	<20		20	7.7	ug/L			05/10/16 18:31	20
1,2-Dichlorobenzene	<20		20	6.7	ug/L			05/10/16 18:31	20
1,2-Dichloroethane	<20		20	7.8	ug/L			05/10/16 18:31	20
1,2-Dichloropropane	<20		20	8.6	ug/L			05/10/16 18:31	20
1,3-Dichlorobenzene	<20		20	8.0	ug/L			05/10/16 18:31	20
1,4-Dichlorobenzene	<20		20	7.3	ug/L			05/10/16 18:31	20
2-Hexanone	<100		100	31	ug/L			05/10/16 18:31	20
Acetone	<100		100	35	ug/L			05/10/16 18:31	20
Benzene	**250**		10	2.9	ug/L			05/10/16 18:31	20
Bromodichloromethane	<20		20	7.4	ug/L			05/10/16 18:31	20
Bromoform	<20		20	9.7	ug/L			05/10/16 18:31	20
Bromomethane	<40		40	16	ug/L			05/10/16 18:31	20
Carbon disulfide	<40		40	9.0	ug/L			05/10/16 18:31	20
Carbon tetrachloride	<20		20	7.7	ug/L			05/10/16 18:31	20
Chlorobenzene	<20		20	7.7	ug/L			05/10/16 18:31	20
Chloroethane	<20		20	10	ug/L			05/10/16 18:31	20
Chloroform	<20		20	7.4	ug/L			05/10/16 18:31	20
Chloromethane	<20		20	6.4	ug/L			05/10/16 18:31	20
cis-1,2-Dichloroethene	<20		20	8.2	ug/L			05/10/16 18:31	20
cis-1,3-Dichloropropene	<20		20	8.3	ug/L			05/10/16 18:31	20
Cyclohexane	<20		20	9.7	ug/L			05/10/16 18:31	20
Dibromochloromethane	<20		20	9.8	ug/L			05/10/16 18:31	20
Dichlorodifluoromethane	<40		40	13	ug/L			05/10/16 18:31	20
Ethylbenzene	**42**		10	3.7	ug/L			05/10/16 18:31	20
Isopropylbenzene	<20		20	7.7	ug/L			05/10/16 18:31	20
Methyl acetate	<100		100	40	ug/L			05/10/16 18:31	20
Methyl Ethyl Ketone	<100		100	42	ug/L			05/10/16 18:31	20
methyl isobutyl ketone	<100		100	43	ug/L			05/10/16 18:31	20
Methyl tert-butyl ether	<20		20	7.9	ug/L			05/10/16 18:31	20
Methylcyclohexane	<20		20	6.3	ug/L			05/10/16 18:31	20
Methylene Chloride	<100		100	33	ug/L			05/10/16 18:31	20
Styrene	<20		20	7.7	ug/L			05/10/16 18:31	20
Tetrachloroethene	<20		20	7.4	ug/L			05/10/16 18:31	20
Toluene	**280**		10	3.0	ug/L			05/10/16 18:31	20
trans-1,2-Dichloroethene	<20		20	7.0	ug/L			05/10/16 18:31	20
trans-1,3-Dichloropropene	<20		20	7.2	ug/L			05/10/16 18:31	20
Trichloroethene	<10		10	3.3	ug/L			05/10/16 18:31	20
Trichlorofluoromethane	<20	F1	20	8.5	ug/L			05/10/16 18:31	20
Vinyl chloride	<10		10	4.1	ug/L			05/10/16 18:31	20
Xylenes, Total	**290**		20	4.4	ug/L			05/10/16 18:31	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*05/10/16 18:31*	*20*
4-Bromofluorobenzene (Surr)	*84*		*71 - 120*		*05/10/16 18:31*	*20*
Dibromofluoromethane	*108*		*70 - 120*		*05/10/16 18:31*	*20*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/10/16 18:31*	*20*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	**38**		20	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,2'-oxybis[1-chloropropane]	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4,5-Trichlorophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4,6-Trichlorophenol	<20		20	2.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dichlorophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dimethylphenol	**280**		40	7.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dinitrophenol	<81		81	35	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dinitrotoluene	<4.0		4.0	0.99	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,6-Dinitrotoluene	<2.0		2.0	0.30	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Chloronaphthalene	<8.1		8.1	0.95	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Chlorophenol	<20		20	2.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Methylphenol	**180**		8.1	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Nitroaniline	<20		20	5.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Nitrophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
3,3'-Dichlorobenzidine	<20		20	6.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
3-Nitroaniline	<40		40	7.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
4,6-Dinitro-2-methylphenol	<81		81	24	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Bromophenyl phenyl ether	<20		20	2.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chloro-3-methylphenol	<40		40	9.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chloroaniline	<40		40	8.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chlorophenyl phenyl ether	<20		20	2.6	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Nitroaniline	<40		40	6.7	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Nitrophenol	<81		81	30	ug/L		04/28/16 08:38	05/10/16 15:04	5
Acenaphthene	**29**		4.0	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Acenaphthylene	**3.7**	**J**	4.0	1.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
Acetophenone	<20		20	2.7	ug/L		04/28/16 08:38	05/10/16 15:04	5
Anthracene	**12**		4.0	1.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
Atrazine	<20		20	2.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzaldehyde	<81		81	61	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[a]anthracene	<0.81		0.81	0.23	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[a]pyrene	<0.81		0.81	0.40	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[b]fluoranthene	<0.81		0.81	0.33	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[g,h,i]perylene	<4.0		4.0	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[k]fluoranthene	<0.81		0.81	0.26	ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-chloroethoxy)methane	<8.1		8.1	1.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-chloroethyl)ether	<8.1		8.1	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-ethylhexyl) phthalate	<40		40	6.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
Butyl benzyl phthalate	<8.1		8.1	1.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
Caprolactam	<40		40	6.0	ug/L		04/28/16 08:38	05/10/16 15:04	5
Carbazole	**140**		20	1.4	ug/L		04/28/16 08:38	05/10/16 15:04	5
Chrysene	<2.0		2.0	0.27	ug/L		04/28/16 08:38	05/10/16 15:04	5
Dibenz(a,h)anthracene	<1.2		1.2	0.20	ug/L		04/28/16 08:38	05/10/16 15:04	5
Dibenzofuran	**56**		8.1	1.1	ug/L		04/28/16 08:38	05/10/16 15:04	5

Client Sample ID: MW-3-GW-04272016

Lab Sample ID: 500-110798-1

Date Collected: 04/27/16 09:52

Matrix: Water

Date Received: 04/27/16 16:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl phthalate	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Dimethyl phthalate	<8.1		8.1	1.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
Di-n-butyl phthalate	<20		20	2.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
Di-n-octyl phthalate	<40		40	4.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Fluoranthene	**7.1**		4.0	1.8	ug/L		04/28/16 08:38	05/10/16 15:04	5
Fluorene	**83**		4.0	0.98	ug/L		04/28/16 08:38	05/10/16 15:04	5
Hexachlorobenzene	<2.0		2.0	0.32	ug/L		04/28/16 08:38	05/10/16 15:04	5
Hexachlorobutadiene	<20	*	20	2.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
Hexachlorocyclopentadiene	<81	*	81	26	ug/L		04/28/16 08:38	05/10/16 15:04	5
Hexachloroethane	<20	*	20	2.4	ug/L		04/28/16 08:38	05/10/16 15:04	5
Indeno[1,2,3-cd]pyrene	<0.81		0.81	0.30	ug/L		04/28/16 08:38	05/10/16 15:04	5
Isophorone	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Nitrobenzene	<4.0		4.0	1.8	ug/L		04/28/16 08:38	05/10/16 15:04	5
N-Nitrosodi-n-propylamine	<2.0		2.0	0.62	ug/L		04/28/16 08:38	05/10/16 15:04	5
N-Nitrosodiphenylamine	<4.0		4.0	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Pentachlorophenol	<81		81	16	ug/L		04/28/16 08:38	05/10/16 15:04	5
Phenanthrene	**69**		4.0	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Phenol	**85**		20	2.7	ug/L		04/28/16 08:38	05/10/16 15:04	5
Pyrene	**4.7**		4.0	1.7	ug/L		04/28/16 08:38	05/10/16 15:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*94*		*30 - 123*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
2-Fluorophenol (Surr)	*75*		*30 - 110*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
Phenol-d5 (Surr)	*66*		*20 - 100*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
Terphenyl-d14 (Surr)	*113*		*42 - 150*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*04/28/16 08:38*	*05/10/16 15:04*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**360**		4.0	0.53	ug/L		04/28/16 08:38	05/10/16 17:59	10
3 & 4 Methylphenol	**280**		16	3.6	ug/L		04/28/16 08:38	05/10/16 17:59	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**3600**		81	25	ug/L		04/28/16 08:38	05/10/16 18:24	100

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/28/16 10:21	05/02/16 19:42	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/28/16 10:21	05/02/16 19:42	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/28/16 10:21	05/02/16 19:42	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 19:42	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 19:42	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/28/16 10:21	05/02/16 19:42	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/28/16 10:21	05/02/16 19:42	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 19:42	1
Dieldrin	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/28/16 10:21	05/02/16 19:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endrin	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/28/16 10:21	05/02/16 19:42	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/28/16 10:21	05/02/16 19:42	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		04/28/16 10:21	05/02/16 19:42	1
Heptachlor	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	1
Methoxychlor	<0.080		0.080	0.023	ug/L		04/28/16 10:21	05/02/16 19:42	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/02/16 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*50*		*30 - 143*	*04/28/16 10:21*	*05/02/16 19:42*	*1*
Tetrachloro-m-xylene	*122*	*X*	*30 - 120*	*04/28/16 10:21*	*05/02/16 19:42*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1260	<0.40		0.40	0.070	ug/L		04/28/16 10:21	05/03/16 15:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 127*	*04/28/16 10:21*	*05/03/16 15:32*	*1*
DCB Decachlorobiphenyl	*69*		*30 - 150*	*04/28/16 10:21*	*05/03/16 15:32*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:29	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:29	1
Arsenic	**0.0074**	**J ^**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:29	1
Barium	**0.62**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:29	1
Cadmium	**0.00097**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:29	1
Calcium	**58**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:29	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:29	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:29	1
Iron	**7.4**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:29	1
Lead	**0.0024**	**J**	0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:29	1
Magnesium	**80**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:29	1
Manganese	**0.33**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:29	1
Nickel	**0.0068**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:29	1
Potassium	**53**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:29	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:29	1
Sodium	**280**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-1
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:29	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:34	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:34	1
Arsenic	**0.0046**	**J ^**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:34	1
Barium	**0.61**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:34	1
Calcium	**57**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:34	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:34	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:34	1
Iron	**7.3**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:34	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:34	1
Magnesium	**79**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:34	1
Manganese	**0.31**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:34	1
Nickel	**0.0063**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:34	1
Potassium	**52**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:34	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:34	1
Sodium	**270**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:34	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:34	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:10	1
Sulfate	**50**		10	4.0	mg/L			05/05/16 08:01	2
Total Organic Carbon - Duplicates	**21**		1.0	0.23	mg/L			05/08/16 16:02	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**6.5**		5.0	1.6	mg/L			04/29/16 10:26	1
Ammonia	**32**	**B**	4.0	0.86	mg/L		05/09/16 19:05	05/09/16 21:52	20
Nitrogen, Nitrite	**0.0091**	**J B**	0.020	0.0032	mg/L			04/28/16 11:47	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Lab Sample ID: 500-110798-2

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/10/16 17:37	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/10/16 17:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/10/16 17:37	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/10/16 17:37	1
1,1-Dichloroethane	**11**		1.0	0.41	ug/L			05/10/16 17:37	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/10/16 17:37	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/10/16 17:37	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/10/16 17:37	1
1,2-Dichloroethane	**56**		1.0	0.39	ug/L			05/10/16 17:37	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/10/16 17:37	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/10/16 17:37	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/10/16 17:37	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/10/16 17:37	1
Acetone	**19**		5.0	1.7	ug/L			05/10/16 17:37	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/10/16 17:37	1
Bromoform	<1.0		1.0	0.48	ug/L			05/10/16 17:37	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/10/16 17:37	1
Carbon disulfide	**9.3**		2.0	0.45	ug/L			05/10/16 17:37	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/10/16 17:37	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/10/16 17:37	1
Chloroform	<1.0		1.0	0.37	ug/L			05/10/16 17:37	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/10/16 17:37	1
cis-1,2-Dichloroethene	**3.4**		1.0	0.41	ug/L			05/10/16 17:37	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/10/16 17:37	1
Cyclohexane	**0.97**	**J**	1.0	0.49	ug/L			05/10/16 17:37	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/10/16 17:37	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/10/16 17:37	1
Ethylbenzene	**2.6**		0.50	0.18	ug/L			05/10/16 17:37	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Methyl acetate	**110**		5.0	2.0	ug/L			05/10/16 17:37	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/10/16 17:37	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/10/16 17:37	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/10/16 17:37	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/10/16 17:37	1
Styrene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/10/16 17:37	1
Toluene	**13**		0.50	0.15	ug/L			05/10/16 17:37	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/10/16 17:37	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/10/16 17:37	1
Trichloroethene	**0.72**		0.50	0.16	ug/L			05/10/16 17:37	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/10/16 17:37	1
Vinyl chloride	**5.2**		0.50	0.20	ug/L			05/10/16 17:37	1
Xylenes, Total	**3.5**		1.0	0.22	ug/L			05/10/16 17:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*		*05/10/16 17:37*	*1*
4-Bromofluorobenzene (Surr)	*87*		*71 - 120*		*05/10/16 17:37*	*1*
Dibromofluoromethane	*105*		*70 - 120*		*05/10/16 17:37*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/10/16 17:37*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**490**		5.0	1.5	ug/L			05/10/16 18:04	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*71 - 127*		*05/10/16 18:04*	*10*
4-Bromofluorobenzene (Surr)	*85*		*71 - 120*		*05/10/16 18:04*	*10*
Dibromofluoromethane	*107*		*70 - 120*		*05/10/16 18:04*	*10*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/10/16 18:04*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<4.2		4.2	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4,5-Trichlorophenol	<8.4		8.4	2.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4,6-Trichlorophenol	<4.2		4.2	0.60	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dichlorophenol	<8.4		8.4	2.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dimethylphenol	**13**		8.4	1.5	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dinitrophenol	<17		17	7.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dinitrotoluene	<0.84		0.84	0.21	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,6-Dinitrotoluene	<0.42		0.42	0.062	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Chloronaphthalene	<1.7		1.7	0.20	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Chlorophenol	<4.2		4.2	0.47	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Methylnaphthalene	<0.42		0.42	0.055	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Methylphenol	**5.0**		1.7	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Nitroaniline	<4.2		4.2	1.1	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Nitrophenol	<8.4		8.4	2.1	ug/L		04/28/16 08:38	05/10/16 15:29	1
3 & 4 Methylphenol	**9.5**		1.7	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
3,3'-Dichlorobenzidine	<4.2		4.2	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
3-Nitroaniline	<8.4		8.4	1.5	ug/L		04/28/16 08:38	05/10/16 15:29	1
4,6-Dinitro-2-methylphenol	<17		17	5.0	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Bromophenyl phenyl ether	<4.2		4.2	0.45	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chloro-3-methylphenol	<8.4		8.4	1.9	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chloroaniline	<8.4		8.4	1.7	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chlorophenyl phenyl ether	<4.2		4.2	0.53	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Nitroaniline	<8.4		8.4	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Nitrophenol	<17		17	6.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
Acenaphthene	<0.84		0.84	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Acenaphthylene	<0.84		0.84	0.22	ug/L		04/28/16 08:38	05/10/16 15:29	1
Acetophenone	<4.2		4.2	0.56	ug/L		04/28/16 08:38	05/10/16 15:29	1
Anthracene	<0.84		0.84	0.28	ug/L		04/28/16 08:38	05/10/16 15:29	1
Atrazine	<4.2		4.2	0.52	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzaldehyde	<17		17	13	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[a]anthracene	<0.17		0.17	0.048	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[a]pyrene	<0.17	*	0.17	0.083	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[b]fluoranthene	<0.17	*	0.17	0.068	ug/L		04/28/16 08:38	05/10/16 15:29	1

Client Sample ID: MW-4-GW-04272016

Lab Sample ID: 500-110798-2

Date Collected: 04/27/16 12:17

Matrix: Water

Date Received: 04/27/16 16:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	<0.84	*	0.84	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[k]fluoranthene	<0.17	*	0.17	0.054	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-chloroethyl)ether	<1.7		1.7	0.25	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-ethylhexyl) phthalate	<8.4		8.4	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
Butyl benzyl phthalate	<1.7		1.7	0.40	ug/L		04/28/16 08:38	05/10/16 15:29	1
Caprolactam	<8.4		8.4	1.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
Carbazole	<4.2		4.2	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
Chrysene	<0.42		0.42	0.057	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dibenz(a,h)anthracene	<0.25	*	0.25	0.043	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		04/28/16 08:38	05/10/16 15:29	1
Diethyl phthalate	<1.7		1.7	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dimethyl phthalate	<1.7		1.7	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Di-n-butyl phthalate	<4.2		4.2	0.61	ug/L		04/28/16 08:38	05/10/16 15:29	1
Di-n-octyl phthalate	<8.4		8.4	0.88	ug/L		04/28/16 08:38	05/10/16 15:29	1
Fluoranthene	<0.84		0.84	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
Fluorene	<0.84		0.84	0.20	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorobenzene	<0.42		0.42	0.067	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorobutadiene	<4.2	*	4.2	0.43	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorocyclopentadiene	<17	*	17	5.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachloroethane	<4.2	*	4.2	0.50	ug/L		04/28/16 08:38	05/10/16 15:29	1
Indeno[1,2,3-cd]pyrene	<0.17	*	0.17	0.063	ug/L		04/28/16 08:38	05/10/16 15:29	1
Isophorone	<1.7		1.7	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Naphthalene	**2.4**		0.84	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Nitrobenzene	<0.84		0.84	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
N-Nitrosodi-n-propylamine	<0.42		0.42	0.13	ug/L		04/28/16 08:38	05/10/16 15:29	1
N-Nitrosodiphenylamine	<0.84		0.84	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Pentachlorophenol	<17		17	3.3	ug/L		04/28/16 08:38	05/10/16 15:29	1
Phenanthrene	<0.84		0.84	0.25	ug/L		04/28/16 08:38	05/10/16 15:29	1
Phenol	**4.3**		4.2	0.56	ug/L		04/28/16 08:38	05/10/16 15:29	1
Pyrene	<0.84		0.84	0.36	ug/L		04/28/16 08:38	05/10/16 15:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*30 - 123*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
Nitrobenzene-d5 (Surr)	*75*		*33 - 139*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
Phenol-d5 (Surr)	*62*		*20 - 100*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
Terphenyl-d14 (Surr)	*120*		*42 - 150*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*	*04/28/16 08:38*	*05/10/16 15:29*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0054	ug/L		04/28/16 10:21	05/02/16 20:01	1
alpha-BHC	<0.041		0.041	0.0026	ug/L		04/28/16 10:21	05/02/16 20:01	1
alpha-Chlordane	<0.041		0.041	0.0045	ug/L		04/28/16 10:21	05/02/16 20:01	1
beta-BHC	<0.041		0.041	0.010	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		04/28/16 10:21	05/02/16 20:01	1
delta-BHC	<0.041		0.041	0.010	ug/L		04/28/16 10:21	05/02/16 20:01	1

Client Sample ID: MW-4-GW-04272016

Lab Sample ID: 500-110798-2

Date Collected: 04/27/16 12:17

Matrix: Water

Date Received: 04/27/16 16:20

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.041		0.041	0.013	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endrin	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endrin ketone	<0.041		0.041	0.017	ug/L		04/28/16 10:21	05/02/16 20:01	1
gamma-BHC (Lindane)	<0.041		0.041	0.0057	ug/L		04/28/16 10:21	05/02/16 20:01	1
gamma-Chlordane	<0.041		0.041	0.0073	ug/L		04/28/16 10:21	05/02/16 20:01	1
Heptachlor	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Methoxychlor	<0.081		0.081	0.023	ug/L		04/28/16 10:21	05/02/16 20:01	1
Toxaphene	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/02/16 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*46*		*30 - 143*	*04/28/16 10:21*	*05/02/16 20:01*	*1*
Tetrachloro-m-xylene	*146*	*X*	*30 - 120*	*04/28/16 10:21*	*05/02/16 20:01*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.068	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1221	**0.93**		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1232	**1.8**		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1242	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1248	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1254	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1260	<0.41		0.41	0.071	ug/L		04/28/16 10:21	05/03/16 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*62*		*30 - 127*	*04/28/16 10:21*	*05/03/16 15:48*	*1*
DCB Decachlorobiphenyl	*39*		*30 - 150*	*04/28/16 10:21*	*05/03/16 15:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:40	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:40	1
Arsenic	**0.0066**	**J ^**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:40	1
Barium	**0.063**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:40	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:40	1
Calcium	**240**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:40	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:40	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:40	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:40	1
Iron	**1.1**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:40	1
Lead	**0.0026**	**J**	0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:40	1
Magnesium	**98**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:40	1
Manganese	**2.2**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:40	1
Nickel	<0.010		0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:40	1
Potassium	**13**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:40	1
Sodium	**470**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:40	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:40	1
Vanadium	**0.0026**	**J**	0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:40	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:40	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:45	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:45	1
Arsenic	**0.0050**	**J ^**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:45	1
Barium	**0.063**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:45	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:45	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:45	1
Calcium	**240**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:45	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:45	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:45	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:45	1
Iron	**0.69**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:45	1
Lead	**0.0031**	**J**	0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:45	1
Magnesium	**97**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:45	1
Manganese	**2.2**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:45	1
Nickel	**0.0037**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:45	1
Potassium	**13**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:45	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:45	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:45	1
Sodium	**460**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:45	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:45	1
Vanadium	**0.0022**	**J**	0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:45	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.2**		1.0	0.22	mg/L			05/03/16 05:18	1
Sulfate	**640**		130	50	mg/L			05/05/16 08:02	25
Total Organic Carbon - Duplicates	**100**		4.0	0.92	mg/L			05/08/16 16:22	4
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**7.0**		5.0	1.6	mg/L			04/29/16 10:28	1
Ammonia	**0.31**	**B**	0.20	0.043	mg/L		05/09/16 19:05	05/09/16 21:55	1
Nitrogen, Nitrite	**0.011**	**J B**	0.020	0.0032	mg/L			04/28/16 11:47	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30
Matrix: Water
Date Received: 04/27/16 16:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/10/16 15:50	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/10/16 15:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/10/16 15:50	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/10/16 15:50	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/10/16 15:50	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/10/16 15:50	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/10/16 15:50	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/10/16 15:50	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/10/16 15:50	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/10/16 15:50	1
1,4-Dichlorobenzene	**4.0**		1.0	0.36	ug/L			05/10/16 15:50	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/10/16 15:50	1
Acetone	<5.0		5.0	1.7	ug/L			05/10/16 15:50	1
Benzene	<0.50		0.50	0.15	ug/L			05/10/16 15:50	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/10/16 15:50	1
Bromoform	<1.0		1.0	0.48	ug/L			05/10/16 15:50	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/10/16 15:50	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/10/16 15:50	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/10/16 15:50	1
Chlorobenzene	**4.6**		1.0	0.39	ug/L			05/10/16 15:50	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/10/16 15:50	1
Chloroform	<1.0		1.0	0.37	ug/L			05/10/16 15:50	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/10/16 15:50	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/10/16 15:50	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/10/16 15:50	1
Cyclohexane	**1.4**		1.0	0.49	ug/L			05/10/16 15:50	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/10/16 15:50	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/10/16 15:50	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/10/16 15:50	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			05/10/16 15:50	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/10/16 15:50	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/10/16 15:50	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/10/16 15:50	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/10/16 15:50	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/10/16 15:50	1
Styrene	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/10/16 15:50	1
Toluene	<0.50		0.50	0.15	ug/L			05/10/16 15:50	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/10/16 15:50	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/10/16 15:50	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/10/16 15:50	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/10/16 15:50	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/10/16 15:50	1
Xylenes, Total	**0.73**	**J**	1.0	0.22	ug/L			05/10/16 15:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30
Matrix: Water
Date Received: 04/27/16 16:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 127*		*05/10/16 15:50*	*1*
4-Bromofluorobenzene (Surr)	*84*		*71 - 120*		*05/10/16 15:50*	*1*
Dibromofluoromethane	*110*		*70 - 120*		*05/10/16 15:50*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*05/10/16 15:50*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.31	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4,5-Trichlorophenol	<8.1		8.1	2.1	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4,6-Trichlorophenol	<4.0		4.0	0.58	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dichlorophenol	<8.1		8.1	2.1	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dimethylphenol	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dinitrophenol	<16		16	7.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dinitrotoluene	<0.81		0.81	0.20	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,6-Dinitrotoluene	<0.40		0.40	0.060	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Methylnaphthalene	**0.64**		0.40	0.053	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Methylphenol	<1.6		1.6	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Nitrophenol	<8.1		8.1	2.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		04/28/16 08:38	05/10/16 15:54	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	1
3-Nitroaniline	<8.1		8.1	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	1
4,6-Dinitro-2-methylphenol	<16		16	4.8	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.44	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Chloro-3-methylphenol	<8.1		8.1	1.9	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Chloroaniline	<8.1		8.1	1.6	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Nitroaniline	<8.1		8.1	1.3	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Nitrophenol	<16		16	6.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
Acenaphthene	**0.31**	**J**	0.81	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
Acenaphthylene	<0.81		0.81	0.22	ug/L		04/28/16 08:38	05/10/16 15:54	1
Acetophenone	<4.0		4.0	0.54	ug/L		04/28/16 08:38	05/10/16 15:54	1
Anthracene	<0.81		0.81	0.27	ug/L		04/28/16 08:38	05/10/16 15:54	1
Atrazine	<4.0		4.0	0.51	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzaldehyde	<16	^	16	12	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[a]anthracene	<0.16		0.16	0.046	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[a]pyrene	<0.16		0.16	0.080	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[g,h,i]perylene	<0.81		0.81	0.30	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[k]fluoranthene	<0.16		0.16	0.052	ug/L		04/28/16 08:38	05/10/16 15:54	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		04/28/16 08:38	05/10/16 15:54	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.24	ug/L		04/28/16 08:38	05/10/16 15:54	1
Bis(2-ethylhexyl) phthalate	<8.1		8.1	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	1
Butyl benzyl phthalate	<1.6		1.6	0.39	ug/L		04/28/16 08:38	05/10/16 15:54	1
Caprolactam	<8.1		8.1	1.2	ug/L		04/28/16 08:38	05/10/16 15:54	1
Carbazole	<4.0		4.0	0.29	ug/L		04/28/16 08:38	05/10/16 15:54	1
Chrysene	<0.40		0.40	0.055	ug/L		04/28/16 08:38	05/10/16 15:54	1

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30

Matrix: Water

Date Received: 04/27/16 16:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		04/28/16 08:38	05/10/16 15:54	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		04/28/16 08:38	05/10/16 15:54	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		04/28/16 08:38	05/10/16 15:54	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
Di-n-butyl phthalate	<4.0		4.0	0.59	ug/L		04/28/16 08:38	05/10/16 15:54	1
Di-n-octyl phthalate	<8.1		8.1	0.85	ug/L		04/28/16 08:38	05/10/16 15:54	1
Fluoranthene	<0.81		0.81	0.37	ug/L		04/28/16 08:38	05/10/16 15:54	1
Fluorene	**0.20**	**J**	0.81	0.20	ug/L		04/28/16 08:38	05/10/16 15:54	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		04/28/16 08:38	05/10/16 15:54	1
Hexachlorobutadiene	<4.0	*	4.0	0.42	ug/L		04/28/16 08:38	05/10/16 15:54	1
Hexachlorocyclopentadiene	<16	*	16	5.2	ug/L		04/28/16 08:38	05/10/16 15:54	1
Hexachloroethane	<4.0	*	4.0	0.48	ug/L		04/28/16 08:38	05/10/16 15:54	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.061	ug/L		04/28/16 08:38	05/10/16 15:54	1
Isophorone	<1.6		1.6	0.30	ug/L		04/28/16 08:38	05/10/16 15:54	1
Naphthalene	**0.64**	**J**	0.81	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
Nitrobenzene	<0.81		0.81	0.36	ug/L		04/28/16 08:38	05/10/16 15:54	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		04/28/16 08:38	05/10/16 15:54	1
N-Nitrosodiphenylamine	**1.2**		0.81	0.30	ug/L		04/28/16 08:38	05/10/16 15:54	1
Pentachlorophenol	<16		16	3.2	ug/L		04/28/16 08:38	05/10/16 15:54	1
Phenanthrene	<0.81		0.81	0.24	ug/L		04/28/16 08:38	05/10/16 15:54	1
Phenol	<4.0		4.0	0.54	ug/L		04/28/16 08:38	05/10/16 15:54	1
Pyrene	<0.81		0.81	0.35	ug/L		04/28/16 08:38	05/10/16 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*88*		*30 - 123*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
Nitrobenzene-d5 (Surr)	*80*		*33 - 139*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
Phenol-d5 (Surr)	*58*		*20 - 100*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
Terphenyl-d14 (Surr)	*112*		*42 - 150*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
2,4,6-Tribromophenol (Surr)	*110*		*30 - 150*	*04/28/16 08:38*	*05/10/16 15:54*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/28/16 10:21	05/02/16 20:20	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/28/16 10:21	05/02/16 20:20	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/28/16 10:21	05/02/16 20:20	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 20:20	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 20:20	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/28/16 10:21	05/02/16 20:20	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/28/16 10:21	05/02/16 20:20	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 20:20	1
Dieldrin	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endrin	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endrin aldehyde	<0.040		0.040	0.0081	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/28/16 10:21	05/02/16 20:20	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/28/16 10:21	05/02/16 20:20	1
gamma-Chlordane	<0.040		0.040	0.0071	ug/L		04/28/16 10:21	05/02/16 20:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30
Matrix: Water
Date Received: 04/27/16 16:20

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 20:20	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 20:20	1
Methoxychlor	<0.079		0.079	0.023	ug/L		04/28/16 10:21	05/02/16 20:20	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/02/16 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*44*		*30 - 143*	*04/28/16 10:21*	*05/02/16 20:20*	*1*
Tetrachloro-m-xylene	*76*		*30 - 120*	*04/28/16 10:21*	*05/02/16 20:20*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.066	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1260	<0.40		0.40	0.069	ug/L		04/28/16 10:21	05/03/16 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*04/28/16 10:21*	*05/03/16 16:03*	*1*
DCB Decachlorobiphenyl	*54*		*30 - 150*	*04/28/16 10:21*	*05/03/16 16:03*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:50	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:50	1
Arsenic	<0.010	^	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:50	1
Barium	**0.96**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:50	1
Cadmium	**0.00094**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:50	1
Calcium	**88**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:50	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:50	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:50	1
Iron	**28**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:50	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:50	1
Magnesium	**110**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:50	1
Manganese	**0.097**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:50	1
Nickel	**0.0043**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:50	1
Potassium	**47**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:50	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:50	1
Sodium	**170**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:50	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:50	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:50	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 20:01	1

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30

Matrix: Water

Date Received: 04/27/16 16:20

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 20:01	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 20:01	1
Barium	**0.91**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 20:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 20:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 20:01	1
Calcium	**82**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 20:01	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 20:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 20:01	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 20:01	1
Iron	**26**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 20:01	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 20:01	1
Magnesium	**110**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 20:01	1
Manganese	**0.093**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 20:01	1
Nickel	**0.0040**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 20:01	1
Potassium	**45**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 20:01	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 20:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 20:01	1
Sodium	**170**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 20:01	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 20:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 20:01	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 20:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:21	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:07	1
Total Organic Carbon - Duplicates	**18**		1.0	0.23	mg/L			05/08/16 16:43	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**72**		5.0	1.6	mg/L			04/29/16 10:29	1
Ammonia	**57**	**B**	4.0	0.86	mg/L		05/09/16 19:05	05/09/16 21:57	20
Nitrogen, Nitrite	**0.010**	**J B**	0.020	0.0032	mg/L			04/28/16 11:48	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:44	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

GC/MS VOA

Analysis Batch: 334676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	8260B	
500-110798-1 MS	MW-3-GW-04272016	Total/NA	Water	8260B	
500-110798-1 MSD	MW-3-GW-04272016	Total/NA	Water	8260B	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	8260B	
500-110798-2 - DL	MW-4-GW-04272016	Total/NA	Water	8260B	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	8260B	
LCS 500-334676/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-334676/6	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 333076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1 - DL	MW-3-GW-04272016	Total/NA	Water	3510C	
500-110798-1	MW-3-GW-04272016	Total/NA	Water	3510C	
500-110798-1 - DL2	MW-3-GW-04272016	Total/NA	Water	3510C	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	3510C	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	3510C	
LCS 500-333076/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 500-333076/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 334714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	8270D	333076
500-110798-1 - DL	MW-3-GW-04272016	Total/NA	Water	8270D	333076
500-110798-1 - DL2	MW-3-GW-04272016	Total/NA	Water	8270D	333076
500-110798-2	MW-4-GW-04272016	Total/NA	Water	8270D	333076
500-110798-3	MW-5-GW-04272016	Total/NA	Water	8270D	333076

Analysis Batch: 334925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-333076/2-A	Lab Control Sample	Total/NA	Water	8270D	333076
MB 500-333076/1-A	Method Blank	Total/NA	Water	8270D	333076

GC Semi VOA

Prep Batch: 333099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	3510C	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	3510C	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	3510C	
LCS 500-333099/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-333099/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-333099/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-333099/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 500-333099/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 333580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	8081B	333099

GC Semi VOA (Continued)

Analysis Batch: 333580 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-2	MW-4-GW-04272016	Total/NA	Water	8081B	333099
500-110798-3	MW-5-GW-04272016	Total/NA	Water	8081B	333099
LCS 500-333099/2-A	Lab Control Sample	Total/NA	Water	8081B	333099
LCSD 500-333099/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	333099
MB 500-333099/1-A	Method Blank	Total/NA	Water	8081B	333099

Analysis Batch: 333763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	8082A	333099
500-110798-2	MW-4-GW-04272016	Total/NA	Water	8082A	333099
500-110798-3	MW-5-GW-04272016	Total/NA	Water	8082A	333099
LCS 500-333099/4-A	Lab Control Sample	Total/NA	Water	8082A	333099
LCSD 500-333099/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	333099
MB 500-333099/1-A	Method Blank	Total/NA	Water	8082A	333099

Metals

Prep Batch: 333063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Dissolved	Water	3010A	
500-110798-1	MW-3-GW-04272016	Total/NA	Water	3010A	
500-110798-2	MW-4-GW-04272016	Dissolved	Water	3010A	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	3010A	
500-110798-3	MW-5-GW-04272016	Dissolved	Water	3010A	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	3010A	
LCS 500-333063/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-333063/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 333246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Dissolved	Water	6010C	333063
500-110798-1	MW-3-GW-04272016	Total/NA	Water	6010C	333063
500-110798-2	MW-4-GW-04272016	Dissolved	Water	6010C	333063
500-110798-2	MW-4-GW-04272016	Total/NA	Water	6010C	333063
500-110798-3	MW-5-GW-04272016	Dissolved	Water	6010C	333063
500-110798-3	MW-5-GW-04272016	Total/NA	Water	6010C	333063
LCS 500-333063/2-A	Lab Control Sample	Total/NA	Water	6010C	333063
MB 500-333063/1-A	Method Blank	Total/NA	Water	6010C	333063

Prep Batch: 333371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Dissolved	Water	7470A	
500-110798-1	MW-3-GW-04272016	Total/NA	Water	7470A	
500-110798-2	MW-4-GW-04272016	Dissolved	Water	7470A	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	7470A	
500-110798-3	MW-5-GW-04272016	Dissolved	Water	7470A	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	7470A	
LCS 500-333371/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-333371/12-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Analysis Batch: 333602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Dissolved	Water	7470A	333371
500-110798-1	MW-3-GW-04272016	Total/NA	Water	7470A	333371
500-110798-2	MW-4-GW-04272016	Dissolved	Water	7470A	333371
500-110798-2	MW-4-GW-04272016	Total/NA	Water	7470A	333371
500-110798-3	MW-5-GW-04272016	Dissolved	Water	7470A	333371
500-110798-3	MW-5-GW-04272016	Total/NA	Water	7470A	333371
LCS 500-333371/13-A	Lab Control Sample	Total/NA	Water	7470A	333371
MB 500-333371/12-A	Method Blank	Total/NA	Water	7470A	333371

General Chemistry

Analysis Batch: 333315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	SM 2540D	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	SM 2540D	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	SM 2540D	
LCS 500-333315/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 500-333315/1	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 333341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	SM 4500 NO2 B	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	SM 4500 NO2 B	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	SM 4500 NO2 B	
LCS 500-333341/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	
MB 500-333341/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 333669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	SM 4500 NO3 F	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	SM 4500 NO3 F	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	SM 4500 NO3 F	
LCS 500-333669/4	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	
MB 500-333669/3	Method Blank	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 333690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	9034	
500-110798-1 MS	MW-3-GW-04272016	Total/NA	Water	9034	
500-110798-1 MSD	MW-3-GW-04272016	Total/NA	Water	9034	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	9034	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	9034	
LCS 500-333690/2	Lab Control Sample	Total/NA	Water	9034	
MB 500-333690/1	Method Blank	Total/NA	Water	9034	

Analysis Batch: 333786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	Nitrate by calc	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	Nitrate by calc	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	Nitrate by calc	

General Chemistry (Continued)

Analysis Batch: 334094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	9038	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	9038	
LCS 500-334094/4	Lab Control Sample	Total/NA	Water	9038	
MB 500-334094/3	Method Blank	Total/NA	Water	9038	

Analysis Batch: 334308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-3	MW-5-GW-04272016	Total/NA	Water	9038	
500-110798-3 MS	MW-5-GW-04272016	Total/NA	Water	9038	
500-110798-3 MSD	MW-5-GW-04272016	Total/NA	Water	9038	
LCS 500-334308/4	Lab Control Sample	Total/NA	Water	9038	
MB 500-334308/3	Method Blank	Total/NA	Water	9038	

Analysis Batch: 334591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	9060A	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	9060A	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	9060A	
LCS 500-334591/4	Lab Control Sample	Total/NA	Water	9060A	
MB 500-334591/3	Method Blank	Total/NA	Water	9060A	

Prep Batch: 334645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	SM 4500 NH3 B	
500-110798-2	MW-4-GW-04272016	Total/NA	Water	SM 4500 NH3 B	
500-110798-3	MW-5-GW-04272016	Total/NA	Water	SM 4500 NH3 B	
LCS 500-334645/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-334645/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 334656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110798-1	MW-3-GW-04272016	Total/NA	Water	SM 4500 NH3 G	334645
500-110798-2	MW-4-GW-04272016	Total/NA	Water	SM 4500 NH3 G	334645
500-110798-3	MW-5-GW-04272016	Total/NA	Water	SM 4500 NH3 G	334645
LCS 500-334645/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	334645
MB 500-334645/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	334645

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(71-127)	(71-120)	(70-120)	(75-120)
500-110798-1	MW-3-GW-04272016	109	84	108	95
500-110798-1 MS	MW-3-GW-04272016	109	88	112	95
500-110798-1 MSD	MW-3-GW-04272016	112	89	114	95
500-110798-2	MW-4-GW-04272016	105	87	105	95
500-110798-2 - DL	MW-4-GW-04272016	108	85	107	94
500-110798-3	MW-5-GW-04272016	111	84	110	93
LCS 500-334676/4	Lab Control Sample	102	89	108	98
MB 500-334676/6	Method Blank	107	88	106	98

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-110798-1	MW-3-GW-04272016	94	75	84	66	113	114
500-110798-1 - DL	MW-3-GW-04272016	90	69	76	62	108	101
500-110798-1 - DL2	MW-3-GW-04272016	0 D	0 D	0 D	0 D	0 D	0 D
500-110798-2	MW-4-GW-04272016	72	72	75	62	120	101
500-110798-3	MW-5-GW-04272016	88	72	80	58	112	110
LCS 500-333076/2-A	Lab Control Sample	82	63	74	58	96	90
MB 500-333076/1-A	Method Blank	75	62	72	52	96	72

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-110798-1	MW-3-GW-04272016	50	122 X
500-110798-2	MW-4-GW-04272016	46	146 X
500-110798-3	MW-5-GW-04272016	44	76
LCS 500-333099/2-A	Lab Control Sample	77	47
LCSD 500-333099/3-A	Lab Control Sample Dup	52	50
MB 500-333099/1-A	Method Blank	59	53

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	**Client Sample ID**	**(30-127)**	**(30-127)**	**(30-150)**	**(30-150)**
500-110798-1	MW-3-GW-04272016		60		69
500-110798-2	MW-4-GW-04272016	84	62	37	39
500-110798-3	MW-5-GW-04272016		66		54
LCS 500-333099/4-A	Lab Control Sample	73	59	48	54
LCSD 500-333099/5-A	Lab Control Sample Dup	84	62	40	44
MB 500-333099/1-A	Method Blank	89	74	51	58

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-334676/6
Matrix: Water
Analysis Batch: 334676

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/10/16 10:02	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/10/16 10:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/10/16 10:02	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/10/16 10:02	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/10/16 10:02	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/10/16 10:02	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/10/16 10:02	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/10/16 10:02	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/10/16 10:02	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/10/16 10:02	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/10/16 10:02	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/10/16 10:02	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/10/16 10:02	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/10/16 10:02	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/10/16 10:02	1
Acetone	<5.0		5.0	1.7	ug/L			05/10/16 10:02	1
Benzene	<0.50		0.50	0.15	ug/L			05/10/16 10:02	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/10/16 10:02	1
Bromoform	<1.0		1.0	0.48	ug/L			05/10/16 10:02	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/10/16 10:02	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/10/16 10:02	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/10/16 10:02	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/10/16 10:02	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/10/16 10:02	1
Chloroform	<1.0		1.0	0.37	ug/L			05/10/16 10:02	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/10/16 10:02	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/10/16 10:02	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/10/16 10:02	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/10/16 10:02	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/10/16 10:02	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/10/16 10:02	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/10/16 10:02	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/10/16 10:02	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/10/16 10:02	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/10/16 10:02	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/10/16 10:02	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/10/16 10:02	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/10/16 10:02	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/10/16 10:02	1
Styrene	<1.0		1.0	0.39	ug/L			05/10/16 10:02	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/10/16 10:02	1
Toluene	<0.50		0.50	0.15	ug/L			05/10/16 10:02	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/10/16 10:02	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/10/16 10:02	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/10/16 10:02	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/10/16 10:02	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/10/16 10:02	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			05/10/16 10:02	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		71 - 127		05/10/16 10:02	1
4-Bromofluorobenzene (Surr)	88		71 - 120		05/10/16 10:02	1
Dibromofluoromethane	106		70 - 120		05/10/16 10:02	1
Toluene-d8 (Surr)	98		75 - 120		05/10/16 10:02	1

Lab Sample ID: LCS 500-334676/4
Matrix: Water
Analysis Batch: 334676

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	48.8		ug/L		98	70 - 125
1,1,2,2-Tetrachloroethane	50.0	40.1		ug/L		80	68 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.0		ug/L		100	57 - 141
1,1,2-Trichloroethane	50.0	42.4		ug/L		85	70 - 125
1,1-Dichloroethane	50.0	42.5		ug/L		85	70 - 125
1,1-Dichloroethene	50.0	47.1		ug/L		94	70 - 125
1,2,4-Trichlorobenzene	50.0	45.7		ug/L		91	64 - 126
1,2-Dibromo-3-Chloropropane	50.0	40.0		ug/L		80	51 - 125
1,2-Dibromoethane	50.0	45.1		ug/L		90	70 - 125
1,2-Dichlorobenzene	50.0	44.7		ug/L		89	70 - 125
1,2-Dichloroethane	50.0	45.1		ug/L		90	70 - 125
1,2-Dichloropropane	50.0	39.5		ug/L		79	70 - 125
1,3-Dichlorobenzene	50.0	44.6		ug/L		89	70 - 125
1,4-Dichlorobenzene	50.0	44.6		ug/L		89	70 - 125
2-Hexanone	50.0	37.2		ug/L		74	49 - 139
Acetone	50.0	40.4		ug/L		81	37 - 141
Benzene	50.0	40.4		ug/L		81	70 - 125
Bromodichloromethane	50.0	44.6		ug/L		89	70 - 125
Bromoform	50.0	48.8		ug/L		98	54 - 128
Bromomethane	50.0	50.7		ug/L		101	40 - 150
Carbon disulfide	50.0	38.2		ug/L		76	68 - 125
Carbon tetrachloride	50.0	54.7		ug/L		109	70 - 125
Chlorobenzene	50.0	45.0		ug/L		90	70 - 125
Chloroethane	50.0	42.8		ug/L		86	60 - 139
Chloroform	50.0	44.8		ug/L		90	70 - 125
Chloromethane	50.0	37.7		ug/L		75	60 - 140
cis-1,2-Dichloroethene	50.0	44.3		ug/L		89	70 - 125
cis-1,3-Dichloropropene	50.0	42.7		ug/L		85	70 - 125
Cyclohexane	50.0	36.7		ug/L		73	56 - 149
Dibromochloromethane	50.0	47.5		ug/L		95	66 - 125
Dichlorodifluoromethane	50.0	49.7		ug/L		99	51 - 140
Ethylbenzene	50.0	43.7		ug/L		87	70 - 125
Isopropylbenzene	50.0	44.1		ug/L		88	70 - 125
Methyl acetate	250	168		ug/L		67	60 - 148
Methyl Ethyl Ketone	50.0	38.7		ug/L		77	52 - 142
methyl isobutyl ketone	50.0	36.5		ug/L		73	47 - 140
Methyl tert-butyl ether	50.0	44.6		ug/L		89	67 - 125
Methylcyclohexane	50.0	44.0		ug/L		88	70 - 127
Methylene Chloride	50.0	40.2		ug/L		80	68 - 125
Styrene	50.0	43.0		ug/L		86	70 - 125
Tetrachloroethene	50.0	49.7		ug/L		99	70 - 125
Toluene	50.0	41.5		ug/L		83	70 - 125
trans-1,2-Dichloroethene	50.0	43.6		ug/L		87	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-334676/4
Matrix: Water
Analysis Batch: 334676

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	50.0	44.6		ug/L		89	70 - 125
Trichloroethene	50.0	46.0		ug/L		92	70 - 125
Trichlorofluoromethane	50.0	61.9		ug/L		124	60 - 126
Vinyl chloride	50.0	44.1		ug/L		88	70 - 126
Xylenes, Total	100	87.5		ug/L		88	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*71 - 127*
4-Bromofluorobenzene (Surr)	*89*		*71 - 120*
Dibromofluoromethane	*108*		*70 - 120*
Toluene-d8 (Surr)	*98*		*75 - 120*

Lab Sample ID: 500-110798-1 MS
Matrix: Water
Analysis Batch: 334676

Client Sample ID: MW-3-GW-04272016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	<20		1000	1050		ug/L		105	70 - 125
1,1,2,2-Tetrachloroethane	<20		1000	926		ug/L		93	68 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	<20		1000	1100		ug/L		110	57 - 141
1,1,2-Trichloroethane	<20		1000	974		ug/L		97	70 - 125
1,1-Dichloroethane	<20		1000	947		ug/L		95	70 - 125
1,1-Dichloroethene	<20		1000	1020		ug/L		102	70 - 125
1,2,4-Trichlorobenzene	<20		1000	1110		ug/L		111	64 - 126
1,2-Dibromo-3-Chloropropane	<100		1000	1030		ug/L		103	51 - 125
1,2-Dibromoethane	<20		1000	1030		ug/L		103	70 - 125
1,2-Dichlorobenzene	<20		1000	999		ug/L		100	70 - 125
1,2-Dichloroethane	<20		1000	1060		ug/L		106	70 - 125
1,2-Dichloropropane	<20		1000	890		ug/L		89	70 - 125
1,3-Dichlorobenzene	<20		1000	970		ug/L		97	70 - 125
1,4-Dichlorobenzene	<20		1000	950		ug/L		95	70 - 125
2-Hexanone	<100		1000	863		ug/L		86	49 - 139
Acetone	<100		1000	1020		ug/L		102	37 - 141
Benzene	250		1000	1160		ug/L		91	70 - 125
Bromodichloromethane	<20		1000	1020		ug/L		102	70 - 125
Bromoform	<20		1000	1110		ug/L		111	54 - 128
Bromomethane	<40		1000	1170		ug/L		117	40 - 150
Carbon disulfide	<40		1000	805		ug/L		80	68 - 125
Carbon tetrachloride	<20		1000	1170		ug/L		117	70 - 125
Chlorobenzene	<20		1000	1000		ug/L		100	70 - 125
Chloroethane	<20		1000	883		ug/L		88	60 - 139
Chloroform	<20		1000	1030		ug/L		103	70 - 125
Chloromethane	<20		1000	741		ug/L		74	60 - 140
cis-1,2-Dichloroethene	<20		1000	1000		ug/L		100	70 - 125
cis-1,3-Dichloropropene	<20		1000	938		ug/L		94	70 - 125
Cyclohexane	<20		1000	779		ug/L		78	56 - 149
Dibromochloromethane	<20		1000	1060		ug/L		106	66 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-110798-1 MS
Matrix: Water
Analysis Batch: 334676

Client Sample ID: MW-3-GW-04272016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	<40		1000	1030		ug/L		103	51 - 140
Ethylbenzene	42		1000	973		ug/L		93	70 - 125
Isopropylbenzene	<20		1000	902		ug/L		90	70 - 125
Methyl acetate	<100		5000	4240		ug/L		85	60 - 148
Methyl Ethyl Ketone	<100		1000	930		ug/L		93	52 - 142
methyl isobutyl ketone	<100		1000	838		ug/L		84	47 - 140
Methyl tert-butyl ether	<20		1000	1100		ug/L		110	67 - 125
Methylcyclohexane	<20		1000	939		ug/L		94	70 - 127
Methylene Chloride	<100		1000	953		ug/L		95	68 - 125
Styrene	<20		1000	961		ug/L		96	70 - 125
Tetrachloroethene	<20		1000	1020		ug/L		102	70 - 125
Toluene	280		1000	1160		ug/L		89	70 - 125
trans-1,2-Dichloroethene	<20		1000	943		ug/L		94	70 - 125
trans-1,3-Dichloropropene	<20		1000	996		ug/L		100	70 - 125
Trichloroethene	<10		1000	994		ug/L		99	70 - 125
Trichlorofluoromethane	<20	F1	1000	1270	F1	ug/L		127	60 - 126
Vinyl chloride	<10		1000	947		ug/L		95	70 - 126
Xylenes, Total	290		2000	2190		ug/L		95	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*
4-Bromofluorobenzene (Surr)	*88*		*71 - 120*
Dibromofluoromethane	*112*		*70 - 120*
Toluene-d8 (Surr)	*95*		*75 - 120*

Lab Sample ID: 500-110798-1 MSD
Matrix: Water
Analysis Batch: 334676

Client Sample ID: MW-3-GW-04272016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	<20		1000	1000		ug/L		100	70 - 125	4	20
1,1,2,2-Tetrachloroethane	<20		1000	954		ug/L		95	68 - 125	3	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<20		1000	1000		ug/L		100	57 - 141	9	20
1,1,2-Trichloroethane	<20		1000	962		ug/L		96	70 - 125	1	20
1,1-Dichloroethane	<20		1000	900		ug/L		90	70 - 125	5	20
1,1-Dichloroethene	<20		1000	968		ug/L		97	70 - 125	6	20
1,2,4-Trichlorobenzene	<20		1000	1020		ug/L		102	64 - 126	9	20
1,2-Dibromo-3-Chloropropane	<100		1000	907		ug/L		91	51 - 125	13	20
1,2-Dibromoethane	<20		1000	1010		ug/L		101	70 - 125	3	20
1,2-Dichlorobenzene	<20		1000	953		ug/L		95	70 - 125	5	20
1,2-Dichloroethane	<20		1000	1080		ug/L		108	70 - 125	2	20
1,2-Dichloropropane	<20		1000	860		ug/L		86	70 - 125	3	20
1,3-Dichlorobenzene	<20		1000	922		ug/L		92	70 - 125	5	20
1,4-Dichlorobenzene	<20		1000	912		ug/L		91	70 - 125	4	20
2-Hexanone	<100		1000	824		ug/L		82	49 - 139	5	20
Acetone	<100		1000	930		ug/L		93	37 - 141	9	20
Benzene	250		1000	1120		ug/L		86	70 - 125	4	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-110798-1 MSD
Matrix: Water
Analysis Batch: 334676

Client Sample ID: MW-3-GW-04272016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromodichloromethane	<20		1000	1020		ug/L		102	70 - 125	0	20
Bromoform	<20		1000	1130		ug/L		113	54 - 128	2	20
Bromomethane	<40		1000	1040		ug/L		104	40 - 150	12	20
Carbon disulfide	<40		1000	747		ug/L		75	68 - 125	8	20
Carbon tetrachloride	<20		1000	1120		ug/L		112	70 - 125	4	20
Chlorobenzene	<20		1000	968		ug/L		97	70 - 125	4	20
Chloroethane	<20		1000	807		ug/L		81	60 - 139	9	20
Chloroform	<20		1000	999		ug/L		100	70 - 125	3	20
Chloromethane	<20		1000	697		ug/L		70	60 - 140	6	20
cis-1,2-Dichloroethene	<20		1000	968		ug/L		97	70 - 125	4	20
cis-1,3-Dichloropropene	<20		1000	934		ug/L		93	70 - 125	0	20
Cyclohexane	<20		1000	739		ug/L		74	56 - 149	5	20
Dibromochloromethane	<20		1000	1060		ug/L		106	66 - 125	0	20
Dichlorodifluoromethane	<40		1000	966		ug/L		97	51 - 140	6	20
Ethylbenzene	42		1000	939		ug/L		90	70 - 125	4	20
Isopropylbenzene	<20		1000	892		ug/L		89	70 - 125	1	20
Methyl acetate	<100		5000	4080		ug/L		82	60 - 148	4	20
Methyl Ethyl Ketone	<100		1000	839		ug/L		84	52 - 142	10	20
methyl isobutyl ketone	<100		1000	761		ug/L		76	47 - 140	10	20
Methyl tert-butyl ether	<20		1000	1050		ug/L		105	67 - 125	4	20
Methylcyclohexane	<20		1000	887		ug/L		89	70 - 127	6	20
Methylene Chloride	<100		1000	900		ug/L		90	68 - 125	6	20
Styrene	<20		1000	948		ug/L		95	70 - 125	1	20
Tetrachloroethene	<20		1000	1010		ug/L		101	70 - 125	1	20
Toluene	280		1000	1130		ug/L		85	70 - 125	3	20
trans-1,2-Dichloroethene	<20		1000	906		ug/L		91	70 - 125	4	20
trans-1,3-Dichloropropene	<20		1000	996		ug/L		100	70 - 125	0	20
Trichloroethene	<10		1000	992		ug/L		99	70 - 125	0	20
Trichlorofluoromethane	<20	F1	1000	1090		ug/L		109	60 - 126	15	20
Vinyl chloride	<10		1000	843		ug/L		84	70 - 126	12	20
Xylenes, Total	290		2000	2110		ug/L		91	70 - 125	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*
4-Bromofluorobenzene (Surr)	*89*		*71 - 120*
Dibromofluoromethane	*114*		*70 - 120*
Toluene-d8 (Surr)	*95*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-333076/1-A
Matrix: Water
Analysis Batch: 334925

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333076

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		04/28/16 08:38	05/11/16 11:11	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		04/28/16 08:38	05/11/16 11:11	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		04/28/16 08:38	05/11/16 11:11	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-333076/1-A
Matrix: Water
Analysis Batch: 334925

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333076

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		04/28/16 08:38	05/11/16 11:11	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		04/28/16 08:38	05/11/16 11:11	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		04/28/16 08:38	05/11/16 11:11	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		04/28/16 08:38	05/11/16 11:11	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		04/28/16 08:38	05/11/16 11:11	1
2,6-Dinitrotoluene	<0.40		0.40	0.059	ug/L		04/28/16 08:38	05/11/16 11:11	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		04/28/16 08:38	05/11/16 11:11	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		04/28/16 08:38	05/11/16 11:11	1
2-Methylnaphthalene	<0.40		0.40	0.052	ug/L		04/28/16 08:38	05/11/16 11:11	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		04/28/16 08:38	05/11/16 11:11	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		04/28/16 08:38	05/11/16 11:11	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		04/28/16 08:38	05/11/16 11:11	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		04/28/16 08:38	05/11/16 11:11	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		04/28/16 08:38	05/11/16 11:11	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		04/28/16 08:38	05/11/16 11:11	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		04/28/16 08:38	05/11/16 11:11	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		04/28/16 08:38	05/11/16 11:11	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		04/28/16 08:38	05/11/16 11:11	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		04/28/16 08:38	05/11/16 11:11	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		04/28/16 08:38	05/11/16 11:11	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		04/28/16 08:38	05/11/16 11:11	1
4-Nitrophenol	<16		16	5.9	ug/L		04/28/16 08:38	05/11/16 11:11	1
Acenaphthene	<0.80		0.80	0.25	ug/L		04/28/16 08:38	05/11/16 11:11	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		04/28/16 08:38	05/11/16 11:11	1
Acetophenone	<4.0		4.0	0.53	ug/L		04/28/16 08:38	05/11/16 11:11	1
Anthracene	<0.80		0.80	0.27	ug/L		04/28/16 08:38	05/11/16 11:11	1
Atrazine	<4.0		4.0	0.50	ug/L		04/28/16 08:38	05/11/16 11:11	1
Benzaldehyde	<16	^	16	12	ug/L		04/28/16 08:38	05/11/16 11:11	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		04/28/16 08:38	05/11/16 11:11	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		04/28/16 08:38	05/11/16 11:11	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		04/28/16 08:38	05/11/16 11:11	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		04/28/16 08:38	05/11/16 11:11	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		04/28/16 08:38	05/11/16 11:11	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		04/28/16 08:38	05/11/16 11:11	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		04/28/16 08:38	05/11/16 11:11	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		04/28/16 08:38	05/11/16 11:11	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		04/28/16 08:38	05/11/16 11:11	1
Caprolactam	<8.0		8.0	1.2	ug/L		04/28/16 08:38	05/11/16 11:11	1
Carbazole	<4.0		4.0	0.28	ug/L		04/28/16 08:38	05/11/16 11:11	1
Chrysene	<0.40		0.40	0.055	ug/L		04/28/16 08:38	05/11/16 11:11	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		04/28/16 08:38	05/11/16 11:11	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		04/28/16 08:38	05/11/16 11:11	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		04/28/16 08:38	05/11/16 11:11	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		04/28/16 08:38	05/11/16 11:11	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		04/28/16 08:38	05/11/16 11:11	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		04/28/16 08:38	05/11/16 11:11	1
Fluoranthene	<0.80		0.80	0.36	ug/L		04/28/16 08:38	05/11/16 11:11	1
Fluorene	<0.80		0.80	0.20	ug/L		04/28/16 08:38	05/11/16 11:11	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-333076/1-A
Matrix: Water
Analysis Batch: 334925

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333076

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		04/28/16 08:38	05/11/16 11:11	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		04/28/16 08:38	05/11/16 11:11	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		04/28/16 08:38	05/11/16 11:11	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		04/28/16 08:38	05/11/16 11:11	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		04/28/16 08:38	05/11/16 11:11	1
Isophorone	<1.6		1.6	0.30	ug/L		04/28/16 08:38	05/11/16 11:11	1
Naphthalene	<0.80		0.80	0.25	ug/L		04/28/16 08:38	05/11/16 11:11	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		04/28/16 08:38	05/11/16 11:11	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		04/28/16 08:38	05/11/16 11:11	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		04/28/16 08:38	05/11/16 11:11	1
Pentachlorophenol	<16		16	3.2	ug/L		04/28/16 08:38	05/11/16 11:11	1
Phenanthrene	<0.80		0.80	0.24	ug/L		04/28/16 08:38	05/11/16 11:11	1
Phenol	<4.0		4.0	0.54	ug/L		04/28/16 08:38	05/11/16 11:11	1
Pyrene	<0.80		0.80	0.34	ug/L		04/28/16 08:38	05/11/16 11:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*75*		*30 - 123*	*04/28/16 08:38*	*05/11/16 11:11*	*1*
2-Fluorophenol (Surr)	*62*		*30 - 110*	*04/28/16 08:38*	*05/11/16 11:11*	*1*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*04/28/16 08:38*	*05/11/16 11:11*	*1*
Phenol-d5 (Surr)	*52*		*20 - 100*	*04/28/16 08:38*	*05/11/16 11:11*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*04/28/16 08:38*	*05/11/16 11:11*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*30 - 150*	*04/28/16 08:38*	*05/11/16 11:11*	*1*

Lab Sample ID: LCS 500-333076/2-A
Matrix: Water
Analysis Batch: 334925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333076

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,2'-oxybis[1-chloropropane]	32.0	27.1		ug/L		85	34 - 110
2,4,5-Trichlorophenol	32.0	29.4		ug/L		92	63 - 121
2,4,6-Trichlorophenol	32.0	28.1		ug/L		88	61 - 120
2,4-Dichlorophenol	32.0	24.2		ug/L		76	53 - 123
2,4-Dimethylphenol	32.0	19.0		ug/L		59	42 - 115
2,4-Dinitrophenol	64.0	65.7		ug/L		103	20 - 140
2,4-Dinitrotoluene	32.0	32.6		ug/L		102	67 - 131
2,6-Dinitrotoluene	32.0	33.5		ug/L		105	66 - 125
2-Chloronaphthalene	32.0	17.1		ug/L		53	38 - 110
2-Chlorophenol	32.0	22.4		ug/L		70	49 - 110
2-Methylnaphthalene	32.0	12.6		ug/L		39	32 - 110
2-Methylphenol	32.0	22.8		ug/L		71	49 - 113
2-Nitroaniline	32.0	36.0		ug/L		113	61 - 126
2-Nitrophenol	32.0	25.2		ug/L		79	51 - 120
3 & 4 Methylphenol	32.0	25.1		ug/L		78	49 - 114
3,3'-Dichlorobenzidine	32.0	34.7		ug/L		108	57 - 145
3-Nitroaniline	32.0	27.4		ug/L		86	42 - 134
4,6-Dinitro-2-methylphenol	64.0	65.6		ug/L		103	34 - 152
4-Bromophenyl phenyl ether	32.0	27.5		ug/L		86	60 - 124
4-Chloro-3-methylphenol	32.0	28.1		ug/L		88	63 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-333076/2-A
Matrix: Water
Analysis Batch: 334925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333076

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	32.0	20.1		ug/L		63	15 - 125
4-Chlorophenyl phenyl ether	32.0	26.8		ug/L		84	55 - 115
4-Nitroaniline	32.0	31.9		ug/L		100	40 - 142
4-Nitrophenol	64.0	21.8		ug/L		34	21 - 110
Acenaphthene	32.0	21.3		ug/L		66	41 - 112
Acenaphthylene	32.0	23.5		ug/L		73	48 - 110
Acetophenone	32.0	25.1		ug/L		79	54 - 116
Anthracene	32.0	29.4		ug/L		92	65 - 118
Benzo[a]anthracene	32.0	29.4		ug/L		92	69 - 121
Benzo[a]pyrene	32.0	31.8		ug/L		99	69 - 130
Benzo[b]fluoranthene	32.0	31.8		ug/L		99	66 - 133
Benzo[g,h,i]perylene	32.0	31.7		ug/L		99	47 - 145
Benzo[k]fluoranthene	32.0	31.3		ug/L		98	64 - 134
Bis(2-chloroethoxy)methane	32.0	27.3		ug/L		85	55 - 115
Bis(2-chloroethyl)ether	32.0	24.4		ug/L		76	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	31.2		ug/L		97	60 - 132
Butyl benzyl phthalate	32.0	29.3		ug/L		92	63 - 127
Carbazole	32.0	38.4		ug/L		120	71 - 132
Chrysene	32.0	29.5		ug/L		92	70 - 126
Dibenz(a,h)anthracene	32.0	33.8		ug/L		106	59 - 145
Dibenzofuran	32.0	24.9		ug/L		78	54 - 111
Diethyl phthalate	32.0	33.2		ug/L		104	64 - 126
Dimethyl phthalate	32.0	31.6		ug/L		99	66 - 120
Di-n-butyl phthalate	32.0	30.3		ug/L		95	67 - 125
Di-n-octyl phthalate	32.0	30.6		ug/L		96	63 - 133
Fluoranthene	32.0	30.2		ug/L		95	68 - 127
Fluorene	32.0	28.3		ug/L		89	54 - 113
Hexachlorobenzene	32.0	27.9		ug/L		87	63 - 127
Hexachlorobutadiene	32.0	5.08	*	ug/L		16	20 - 110
Hexachlorocyclopentadiene	32.0	<16	*	ug/L		2	10 - 110
Hexachloroethane	32.0	5.88	*	ug/L		18	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	40.0		ug/L		125	52 - 150
Isophorone	32.0	25.7		ug/L		80	55 - 120
Naphthalene	32.0	13.4		ug/L		42	32 - 110
Nitrobenzene	32.0	23.3		ug/L		73	49 - 116
N-Nitrosodi-n-propylamine	32.0	29.9		ug/L		93	52 - 122
N-Nitrosodiphenylamine	32.0	30.6		ug/L		96	63 - 117
Pentachlorophenol	64.0	44.8		ug/L		70	29 - 138
Phenanthrene	32.0	29.3		ug/L		92	63 - 121
Phenol	32.0	21.1		ug/L		66	33 - 100
Pyrene	32.0	29.6		ug/L		92	65 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*82*		*30 - 123*
2-Fluorophenol (Surr)	*63*		*30 - 110*
Nitrobenzene-d5 (Surr)	*74*		*33 - 139*
Phenol-d5 (Surr)	*58*		*20 - 100*
Terphenyl-d14 (Surr)	*96*		*42 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-333076/2-A
Matrix: Water
Analysis Batch: 334925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333076

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*90*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-333099/1-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333099

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/28/16 10:21	05/02/16 18:45	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/28/16 10:21	05/02/16 18:45	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/28/16 10:21	05/02/16 18:45	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 18:45	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 18:45	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/28/16 10:21	05/02/16 18:45	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/28/16 10:21	05/02/16 18:45	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 18:45	1
Dieldrin	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 18:45	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/28/16 10:21	05/02/16 18:45	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/28/16 10:21	05/02/16 18:45	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/28/16 10:21	05/02/16 18:45	1
Endrin	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 18:45	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		04/28/16 10:21	05/02/16 18:45	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/28/16 10:21	05/02/16 18:45	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/28/16 10:21	05/02/16 18:45	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		04/28/16 10:21	05/02/16 18:45	1
Heptachlor	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 18:45	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 18:45	1
Methoxychlor	<0.080		0.080	0.023	ug/L		04/28/16 10:21	05/02/16 18:45	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/02/16 18:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*59*		*30 - 143*	*04/28/16 10:21*	*05/02/16 18:45*	*1*
Tetrachloro-m-xylene	*53*		*30 - 120*	*04/28/16 10:21*	*05/02/16 18:45*	*1*

Lab Sample ID: LCS 500-333099/2-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333099

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.188		ug/L		59	40 - 130
alpha-BHC	0.320	0.288		ug/L		90	70 - 130
alpha-Chlordane	0.320	0.252		ug/L		79	70 - 130
beta-BHC	0.320	0.301		ug/L		94	70 - 130
4,4'-DDD	0.320	0.337		ug/L		105	70 - 130
4,4'-DDE	0.320	0.253		ug/L		79	56 - 130
4,4'-DDT	0.320	0.280		ug/L		88	50 - 137

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-333099/2-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333099

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
delta-BHC	0.320	0.343		ug/L		107	70 - 130
Dieldrin	0.320	0.260		ug/L		81	70 - 130
Endosulfan I	0.320	0.198		ug/L		62	40 - 130
Endosulfan II	0.320	0.248		ug/L		77	49 - 130
Endosulfan sulfate	0.320	0.252		ug/L		79	70 - 130
Endrin	0.320	0.298		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.287		ug/L		90	63 - 130
Endrin ketone	0.320	0.289		ug/L		90	54 - 141
gamma-BHC (Lindane)	0.320	0.304		ug/L		95	70 - 130
gamma-Chlordane	0.320	0.252		ug/L		79	63 - 130
Heptachlor	0.320	0.239		ug/L		75	40 - 130
Heptachlor epoxide	0.320	0.257		ug/L		80	70 - 130
Methoxychlor	0.320	0.232		ug/L		72	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*77*		*30 - 143*
Tetrachloro-m-xylene	*47*		*30 - 120*

Lab Sample ID: LCSD 500-333099/3-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 333099

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.205		ug/L		64	40 - 130	9	20
alpha-BHC	0.320	0.277		ug/L		87	70 - 130	4	20
alpha-Chlordane	0.320	0.248		ug/L		77	70 - 130	2	20
beta-BHC	0.320	0.283		ug/L		88	70 - 130	6	20
4,4'-DDD	0.320	0.305		ug/L		95	70 - 130	10	20
4,4'-DDE	0.320	0.254		ug/L		79	56 - 130	0	20
4,4'-DDT	0.320	0.262		ug/L		82	50 - 137	7	20
delta-BHC	0.320	0.326		ug/L		102	70 - 130	5	20
Dieldrin	0.320	0.264		ug/L		83	70 - 130	1	20
Endosulfan I	0.320	0.205		ug/L		64	40 - 130	3	20
Endosulfan II	0.320	0.227		ug/L		71	49 - 130	9	20
Endosulfan sulfate	0.320	0.296		ug/L		92	70 - 130	16	20
Endrin	0.320	0.280		ug/L		88	69 - 130	6	20
Endrin aldehyde	0.320	0.279		ug/L		87	63 - 130	3	20
Endrin ketone	0.320	0.327		ug/L		102	54 - 141	12	20
gamma-BHC (Lindane)	0.320	0.293		ug/L		91	70 - 130	4	20
gamma-Chlordane	0.320	0.253		ug/L		79	63 - 130	0	20
Heptachlor	0.320	0.212		ug/L		66	40 - 130	12	20
Heptachlor epoxide	0.320	0.266		ug/L		83	70 - 130	4	20
Methoxychlor	0.320	0.269		ug/L		84	47 - 153	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*52*		*30 - 143*
Tetrachloro-m-xylene	*50*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-333099/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333763 — **Prep Batch: 333099**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		04/28/16 10:21	05/03/16 14:46	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 14:46	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 14:46	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 14:46	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 14:46	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 14:46	1
PCB-1260	<0.40		0.40	0.070	ug/L		04/28/16 10:21	05/03/16 14:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 127*	*04/28/16 10:21*	*05/03/16 14:46*	*1*
DCB Decachlorobiphenyl	*58*		*30 - 150*	*04/28/16 10:21*	*05/03/16 14:46*	*1*

Lab Sample ID: LCS 500-333099/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333763 — **Prep Batch: 333099**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.40		ug/L		85	58 - 121
PCB-1260	4.00	3.48		ug/L		87	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*59*		*30 - 127*
DCB Decachlorobiphenyl	*54*		*30 - 150*

Lab Sample ID: LCSD 500-333099/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333763 — **Prep Batch: 333099**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.06		ug/L		76	58 - 121	11	20
PCB-1260	4.00	3.18		ug/L		80	62 - 137	9	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*62*		*30 - 127*
DCB Decachlorobiphenyl	*44*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-333063/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333246 — **Prep Batch: 333063**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 19:37	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 19:37	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 19:37	1
Barium	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 19:37	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-333063/1-A
Matrix: Water
Analysis Batch: 333246

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333063

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 19:37	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 19:37	1
Calcium	<0.20		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 19:37	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 19:37	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 19:37	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 19:37	1
Iron	<0.20		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 19:37	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 19:37	1
Magnesium	<0.10		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 19:37	1
Manganese	<0.010		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 19:37	1
Nickel	<0.010		0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 19:37	1
Potassium	<0.50		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 19:37	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 19:37	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 19:37	1
Sodium	<1.0		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 19:37	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 19:37	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 19:37	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 19:37	1

Lab Sample ID: LCS 500-333063/2-A
Matrix: Water
Analysis Batch: 333246

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333063

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.86		mg/L		93	80 - 120
Antimony	0.500	0.511		mg/L		102	80 - 120
Arsenic	0.100	0.101		mg/L		101	80 - 120
Barium	2.00	2.03		mg/L		102	80 - 120
Beryllium	0.0500	0.0531		mg/L		106	80 - 120
Cadmium	0.0500	0.0515		mg/L		103	80 - 120
Calcium	10.0	10.0		mg/L		100	80 - 120
Chromium	0.200	0.209		mg/L		105	80 - 120
Cobalt	0.500	0.531		mg/L		106	80 - 120
Copper	0.250	0.261		mg/L		104	80 - 120
Iron	1.00	1.14		mg/L		114	80 - 120
Lead	0.100	0.103		mg/L		103	80 - 120
Magnesium	10.0	9.95		mg/L		99	80 - 120
Manganese	0.500	0.518		mg/L		104	80 - 120
Nickel	0.500	0.523		mg/L		105	80 - 120
Potassium	10.0	9.96		mg/L		100	80 - 120
Selenium	0.100	0.0945		mg/L		94	80 - 120
Silver	0.0500	0.0495		mg/L		99	80 - 120
Sodium	10.0	9.97		mg/L		100	80 - 120
Thallium	0.100	0.100		mg/L		100	80 - 120
Vanadium	0.500	0.537		mg/L		107	80 - 120
Zinc	0.500	0.520		mg/L		104	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-333371/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333602 — **Prep Batch: 333371**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:12	1

Lab Sample ID: LCS 500-333371/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333602 — **Prep Batch: 333371**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00185		mg/L		93	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-333690/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 04:59	1

Lab Sample ID: LCS 500-333690/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	4.02	4.10		mg/L		102	80 - 120

Lab Sample ID: 500-110798-1 MS — **Client Sample ID: MW-3-GW-04272016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	<1.0		4.02	3.81		mg/L		95	75 - 125

Lab Sample ID: 500-110798-1 MSD — **Client Sample ID: MW-3-GW-04272016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	<1.0		4.02	4.05		mg/L		101	75 - 125	6	20

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-334094/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334094

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0	2.0	mg/L			05/05/16 07:44	1

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: LCS 500-334094/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334094

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.0		mg/L		95	80 - 120

Lab Sample ID: MB 500-334308/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:04	1

Lab Sample ID: LCS 500-334308/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.4		mg/L		97	80 - 120

Lab Sample ID: 500-110798-3 MS — **Client Sample ID: MW-5-GW-04272016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<5.0		20.0	18.4		mg/L		92	75 - 125

Lab Sample ID: 500-110798-3 MSD — **Client Sample ID: MW-5-GW-04272016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<5.0		20.0	18.4		mg/L		92	75 - 125	0	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-334591/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.23	mg/L			05/08/16 15:05	1

Lab Sample ID: LCS 500-334591/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334591

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	8.70		mg/L		87	80 - 120
TOC Result 1	10.0	8.71		mg/L		87	80 - 120
TOC Result 2	10.0	8.69		mg/L		87	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-333315/1
Matrix: Water
Analysis Batch: 333315

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.6	mg/L			04/29/16 10:10	1

Lab Sample ID: LCS 500-333315/2
Matrix: Water
Analysis Batch: 333315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	172		mg/L		86	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-334645/1-A
Matrix: Water
Analysis Batch: 334656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 334645

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0560	J	0.20	0.043	mg/L		05/09/16 19:05	05/09/16 21:46	1

Lab Sample ID: LCS 500-334645/2-A
Matrix: Water
Analysis Batch: 334656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 334645

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.41		mg/L		96	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-333341/3
Matrix: Water
Analysis Batch: 333341

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	0.00540	J	0.020	0.0032	mg/L			04/28/16 11:45	1

Lab Sample ID: LCS 500-333341/4
Matrix: Water
Analysis Batch: 333341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.101		mg/L		101	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-333669/3
Matrix: Water
Analysis Batch: 333669

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:35	1

Lab Sample ID: LCS 500-333669/4
Matrix: Water
Analysis Batch: 333669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.971		mg/L		97	80 - 120

Client Sample ID: MW-3-GW-04272016 — Lab Sample ID: 500-110798-1

Date Collected: 04/27/16 09:52 — **Matrix: Water**
Date Received: 04/27/16 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	334676	05/10/16 18:31	JMP	TAL CHI
Total/NA	Prep	3510C			333076	04/28/16 08:38	SML	TAL CHI
Total/NA	Analysis	8270D		5	334714	05/10/16 15:04	AJD	TAL CHI
Total/NA	Prep	3510C	DL		333076	04/28/16 08:38	SML	TAL CHI
Total/NA	Analysis	8270D	DL	10	334714	05/10/16 17:59	AJD	TAL CHI
Total/NA	Prep	3510C	DL2		333076	04/28/16 08:38	SML	TAL CHI
Total/NA	Analysis	8270D	DL2	100	334714	05/10/16 18:24	AJD	TAL CHI
Total/NA	Prep	3510C			333099	04/28/16 10:21	SML	TAL CHI
Total/NA	Analysis	8081B		1	333580	05/02/16 19:42	PJG	TAL CHI
Total/NA	Prep	3510C			333099	04/28/16 10:21	SML	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 15:32	RLL	TAL CHI
Dissolved	Prep	3010A			333063	04/28/16 08:11	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333246	04/28/16 21:34	PJ1	TAL CHI
Total/NA	Prep	3010A			333063	04/28/16 08:11	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333246	04/28/16 21:29	PJ1	TAL CHI
Dissolved	Prep	7470A			333371	04/29/16 16:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	333602	05/02/16 11:47	MJD	TAL CHI
Total/NA	Prep	7470A			333371	04/29/16 16:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	333602	05/02/16 11:45	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:10		
					(End)	05/03/16 05:13		
Total/NA	Analysis	9038		2	334094		CLB	TAL CHI
					(Start)	05/05/16 08:01		
					(End)	05/05/16 08:02		
Total/NA	Analysis	9060A		1	334591	05/08/16 16:02	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333315		SMO	TAL CHI
					(Start)	04/29/16 10:26		
					(End)	04/29/16 10:28		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	334656	05/09/16 21:52	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333341		EAT	TAL CHI
					(Start)	04/28/16 11:47		
					(End)	04/28/16 11:47		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 18:39	CCK	TAL CHI

Client Sample ID: MW-4-GW-04272016 — Lab Sample ID: 500-110798-2

Date Collected: 04/27/16 12:17 — **Matrix: Water**
Date Received: 04/27/16 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	334676	05/10/16 17:37	JMP	TAL CHI

Client Sample ID: MW-4-GW-04272016 — Lab Sample ID: 500-110798-2

Date Collected: 04/27/16 12:17 — **Matrix: Water**
Date Received: 04/27/16 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	10	334676	05/10/16 18:04	JMP	TAL CHI
Total/NA	Prep	3510C			333076	04/28/16 08:38	SML	TAL CHI
Total/NA	Analysis	8270D		1	334714	05/10/16 15:29	AJD	TAL CHI
Total/NA	Prep	3510C			333099	04/28/16 10:21	SML	TAL CHI
Total/NA	Analysis	8081B		1	333580	05/02/16 20:01	PJG	TAL CHI
Total/NA	Prep	3510C			333099	04/28/16 10:21	SML	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 15:48	RLL	TAL CHI
Dissolved	Prep	3010A			333063	04/28/16 08:11	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333246	04/28/16 21:45	PJ1	TAL CHI
Total/NA	Prep	3010A			333063	04/28/16 08:11	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333246	04/28/16 21:40	PJ1	TAL CHI
Dissolved	Prep	7470A			333371	04/29/16 16:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	333602	05/02/16 11:51	MJD	TAL CHI
Total/NA	Prep	7470A			333371	04/29/16 16:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	333602	05/02/16 11:49	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:18		
					(End)	05/03/16 05:21		
Total/NA	Analysis	9038		25	334094		CLB	TAL CHI
					(Start)	05/05/16 08:02		
					(End)	05/05/16 08:03		
Total/NA	Analysis	9060A		4	334591	05/08/16 16:22	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333315		SMO	TAL CHI
					(Start)	04/29/16 10:28		
					(End)	04/29/16 10:29		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	334656	05/09/16 21:55	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333341		EAT	TAL CHI
					(Start)	04/28/16 11:47		
					(End)	04/28/16 11:48		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 18:41	CCK	TAL CHI

Client Sample ID: MW-5-GW-04272016 — Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30 — **Matrix: Water**
Date Received: 04/27/16 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	334676	05/10/16 15:50	JMP	TAL CHI
Total/NA	Prep	3510C			333076	04/28/16 08:38	SML	TAL CHI
Total/NA	Analysis	8270D		1	334714	05/10/16 15:54	AJD	TAL CHI
Total/NA	Prep	3510C			333099	04/28/16 10:21	SML	TAL CHI
Total/NA	Analysis	8081B		1	333580	05/02/16 20:20	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30

Matrix: Water

Date Received: 04/27/16 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			333099	04/28/16 10:21	SML	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 16:03	RLL	TAL CHI
Dissolved	Prep	3010A			333063	04/28/16 08:11	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333246	04/28/16 20:01	PJ1	TAL CHI
Total/NA	Prep	3010A			333063	04/28/16 08:11	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333246	04/28/16 21:50	PJ1	TAL CHI
Dissolved	Prep	7470A			333371	04/29/16 16:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	333602	05/02/16 11:59	MJD	TAL CHI
Total/NA	Prep	7470A			333371	04/29/16 16:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	333602	05/02/16 11:53	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:21		
					(End)	05/03/16 05:24		
Total/NA	Analysis	9038		1	334308		CLB	TAL CHI
					(Start)	05/06/16 09:07		
					(End)	05/06/16 09:08		
Total/NA	Analysis	9060A		1	334591	05/08/16 16:43	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333315		SMO	TAL CHI
					(Start)	04/29/16 10:29		
					(End)	04/29/16 10:30		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	334656	05/09/16 21:57	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333341		EAT	TAL CHI
					(Start)	04/28/16 11:48		
					(End)	04/28/16 11:48		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 18:44	CCK	TAL CHI

Laboratory References:

SC0015 = Pace-Pittsburgh (Microseeps), 220 William Pitt Way, Pittsburgh, PA 15238, TEL (412)826-5245

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order # 500-110798

Send Results to:

Contact & Company Name: Arcadis

Telephone: 312 575 3772

Address: 120 S. LaSalle St. Suite 1350

Fax:

City: Chicago State: IL Zip: 60603

E-mail Address: ellyn.gates@arcadis.com

Project Name/Location (City, State): LCCS Chicago, IL

Project #: CI001805.0002.00005

Sampler's Printed Name: Nicholas Icks

Sampler's Signature:

Preservative	E	E	C	C	A	A	
Filtered (✓)	N	N	N	✓	N	N	N
# of Containers	6		1	1	1		7
Container Information							

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270D (MOD) List 4.2	9034A 8091B	7470A Mercury 6010C TAL Metals - HS	7470A Mercury 6010C TAL Metals - HS	SM4500NH3_G Ammonia	SM4500_NO2_F Nitrogen, Nitrate, Nitrite	See special instructions	REMARKS
MW-3-GW-04272016	4-27-16	0952		✓	W	X	X	X	X	X	X	X	
MW-4-GW-04272016	4-27-16	1217		✓	W	X	X	X	X	X	X	X	
MW-5-GW-04272016	4-27-16	1430		✓	W	X	X	X	X	X	X	X	

500-110798 COC

Special Instructions/Comments: 9034_Calc-Sulfide; 8260B-Target Compound List 4.2; 9060A-(MOD) Local Method; SM4500_NO2_B-Nitrogen, Nitrite; 9038-Sulfate; 2540D-Total Suspended Solids.

☐ Special QA/QC Instructions(✓):

*Level IV Data Package

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: Nicholas Icks	Printed Name: David Beckner	Printed Name: David Beckner	Printed Name: Sherri Scott
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature: David Beckner	Signature: David Beckner	Signature: Sherri Scott
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: TA	Firm/Courier: TA	Firm: TA-CHI
Shipping Tracking #:	Condition/Cooler Temp: 28.3.1	Date/Time: 4-27-16 1533	Date/Time: 4-27-16 1533	Date/Time: 4-27-16 16:20	Date/Time: 4/28/15 0640

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-110798-1

Login Number: 110798
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8,3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-110872-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
5/12/2016 5:16:57 PM
Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Designee for

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-110872-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-110872-1

Comments
No additional comments.

Receipt
The samples were received on 4/28/2016 4:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.8º C and 1.8º C.

GC/MS VOA
Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: MW-1-GW-04282016 (500-110872-1), MW-13-GW-04282016 (500-110872-2), MW-12-GW-04282016 (500-110872-3), MW-11-GW-04282016 (500-110872-4) and DUP-1(04282016) (500-110872-5).

Method(s) 8260B: One surrogate recovery for the following sample was outside control limits: MW-1-GW-04282016 (500-110872-1). Evidence of matrix interference is present (basic pH); therefore,re-analysis was not performed.

Method(s) 8260B: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-13-GW-04282016 (500-110872-2), MW-12-GW-04282016 (500-110872-3), MW-11-GW-04282016 (500-110872-4) and DUP-1(04282016) (500-110872-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following samples were diluted due to the nature of the sample matrix: MW-13-GW-04282016 (500-110872-2), MW-11-GW-04282016 (500-110872-4) and DUP-1(04282016) (500-110872-5). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The following samples were diluted due to the abundance of target and non-target analytes: MW-12-GW-04282016 (500-110872-3). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The following sample required a dilution due to the nature of the sample matrix: MW-12-GW-04282016 (500-110872-3). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: ICV 500-327993/13 was outside method criteria for 4-Chloroaniline at 62.9% (low). ICV 500-329038/13 was outside method criteria for 4-Chloroaniline at 47.7% (low) and 3-Nitroaniline at 32.7%D (low). The CCVIS's where the samples or QC ran were within limits. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.(ICV 500-327993/13) and (ICV 500-329038/13)

Method(s) 8270D: CCVIS 500-334017/2 was outside the method criteria for Benzaldehyde (38.6%D, high); 2,2'-oxybis[1-chloropropane] at 22.1%D, low); Hexachlorocyclopentadiene (58.3%D, high); 3-Nitroaniline (38.1%D, high); 4-Nitroaniline (23.8%D, high); Carbazole (32.2%D, high); and 2,4,6-Tribromophenol (31.1%D). CCVIS 500-334842/2 was outside the method criteria for Benzaldehyde (136.3%D, high); Phenol (20.6%D, high); 2-Methylphenol (37.4%D, high); N-Nitrosodi-n-propylamine (20.7%D, high); Indeno[1,2,3-cd]pyrene (24.1%D, high); and Dibenz(a,h)anthracene (31.0%D, high). CCVIS 500-334204/2 was outside the method criteria for Benzaldehyde (38.0%D, high); high); Hexachlorocyclopentadiene (41.3%D, high); 2,4-Dinitrophenol (20.5%D, high), Pentachlorophenol (29.7%D, high); and 2,4,6-Tribromophenol (22.6%D, high). CCVIS 500-334389/2 was outside the method criteria for Benzoic acid (22.4%D, high); 4-Chloroaniline (26.7%D, high); Caprolactam (31.8%D); Hexachlorocyclopentadiene (35.7%D, high); 2,4-Dinitrophenol (27.4%D, high); 4-Nitroaniline (50.9%D, high); Pentachlorophenol (21.9%D, high); and Benzidine (39.2%D, high). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 500-110872-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

GC Semi VOA

Method(s) 8081B: Tetrachloro-m-xylene surrogate recovery for the following samples were outside control limits: MW-13-GW-04282016 (500-110872-2) and DUP-1(04282016) (500-110872-5). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8081B: The following samples were diluted due to the nature of the sample matrix: MW-12-GW-04282016 (500-110872-3) and DUP-1(04282016) (500-110872-5). Elevated reporting limits (RLs) are provided.

Method(s) 8081B: DCB Decachlorobiphenyl surrogate recovery for the following samples was outside control limits: MW-12-GW-04282016 (500-110872-3) and MW-11-GW-04282016 (500-110872-4). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8081B: DCB Decachlorobiphenyl (low bias) and Tetrachloro-m-xylene (high bias) surrogate recovery for the following samples were outside control limits: DUP-1(04282016) (500-110872-5). Sample was re-analyzed with similar results. Evidence of matrix interference is present; therefore, re-extraction was not performed.

Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-1-GW-04282016 (500-110872-1), MW-13-GW-04282016 (500-110872-2), MW-12-GW-04282016 (500-110872-3), MW-11-GW-04282016 (500-110872-4) and DUP-1(04282016) (500-110872-5). The reagent lot number used was: 127762.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 333763 recovered below and outside the control limit for PCB 1260, peak 2, with a %D of -21%. The majority of samples associated with this CCV were non-detects for the affected analytes. The samples that had hits had sample results of less than 40% D between columns and internal standard recoveries within control limits; therefore, the data have been reported. The following samples are impacted: MW-1-GW-04282016 (500-110872-1) and MW-11-GW-04282016 (500-110872-4).

Method(s) 8082A: The following samples were diluted due to the nature of the sample matrix: MW-13-GW-04282016 (500-110872-2), MW-12-GW-04282016 (500-110872-3) and DUP-1(04282016) (500-110872-5). Elevated reporting limits (RLs) are provided.

Method(s) 8082A: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-13-GW-04282016 (500-110872-2), MW-12-GW-04282016 (500-110872-3) and DUP-1(04282016) (500-110872-5). The reagent lot number used was: 127762.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 333898 recovered below and outside the control limit for PCB 1016, peak 1 (-26.2%), and PCB 1260, peak 2 (-22.1%). The samples associated with this CCV were non-detects for the affected analytes and have an internal standard within control limits; therefore, the data have been reported. The following samples are impacted: MW-13-GW-04282016 (500-110872-2), MW-12-GW-04282016 (500-110872-3) and DUP-1(04282016) (500-110872-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6010C: The low-level CCV at line 115 in 6010C batch 500-333507 was above the method acceptance limits of 70-130% recovery for Selenium. The samples MW-1-GW-04282016 (500-110872-1), MW-13-GW-04282016 (500-110872-2), MW-12-GW-04282016 (500-110872-3), MW-11-GW-04282016 (500-110872-4) and DUP-1(04282016) (500-110872-5) were bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

Method(s) 6010C: The low-level ICVL at line 8 in 6010C batch 500-333507 was above the method acceptance limits of 70-130% recovery for Aluminum The bracketing CCVL was within control limits. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 500-110872-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016 — Lab Sample ID: 500-110872-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	94		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	25		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	4.1		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.1		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.1		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.1		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	10		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	7.3		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	48		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	57		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	4.6		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	12		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	7.4		0.82	0.25	ug/L	1		8270D	Total/NA
Acetophenone	1.3	J	4.1	0.54	ug/L	1		8270D	Total/NA
Carbazole	6.6		4.1	0.29	ug/L	1		8270D	Total/NA
4-Chloroaniline	4.1	J ^	8.2	1.7	ug/L	1		8270D	Total/NA
Dibenzofuran	1.1	J	1.6	0.22	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	4.4	J	8.2	1.5	ug/L	1		8270D	Total/NA
Fluorene	2.1		0.82	0.20	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	5.1		0.41	0.053	ug/L	1		8270D	Total/NA
2-Methylphenol	1.4	J	1.6	0.25	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	16		1.6	0.37	ug/L	1		8270D	Total/NA
Naphthalene	150	E	0.82	0.25	ug/L	1		8270D	Total/NA
Phenanthrene	1.1		0.82	0.25	ug/L	1		8270D	Total/NA
Phenol	30		4.1	0.55	ug/L	1		8270D	Total/NA
Aluminum	0.20	^	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.88		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	930		1.0	0.30	mg/L	5		6010C	Total/NA
Copper	0.0070	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Lead	0.0041	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	0.059	J	0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.0052	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.017		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	52		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	250		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.032		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.077	J ^	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0055	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.78		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	790		1.0	0.30	mg/L	5		6010C	Dissolved
Copper	0.0047	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	0.21		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0028	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	48		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0051	J ^	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.013	J	0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00013	J	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	2.5		1.0	0.22	mg/L	1		9034	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016 (Continued) — Lab Sample ID: 500-110872-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	18		5.0	2.0	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	26		1.0	0.23	mg/L	1		9060A	Total/NA
Nitrogen, Nitrate	0.050	J	0.10	0.045	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	8.5		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	53	B	5.0	1.1	mg/L	25		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.0066	J B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA
Nitrogen, Nitrate Nitrite	0.057	J	0.10	0.045	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: MW-13-GW-04282016 — Lab Sample ID: 500-110872-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	85		50	17	ug/L	10		8260B	Total/NA
Benzene	630		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	54		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	17		10	3.3	ug/L	10		8260B	Total/NA
1,1-Dichloroethane	52		10	4.1	ug/L	10		8260B	Total/NA
Isopropylbenzene	97		10	3.9	ug/L	10		8260B	Total/NA
Methyl Ethyl Ketone	60		50	21	ug/L	10		8260B	Total/NA
Vinyl chloride	15		5.0	2.0	ug/L	10		8260B	Total/NA
Ethylbenzene - DL	2500		50	18	ug/L	100		8260B	Total/NA
Toluene - DL	8100		50	15	ug/L	100		8260B	Total/NA
Xylenes, Total - DL	17000		100	22	ug/L	100		8260B	Total/NA
Acenaphthene	1.4	J	4.1	1.3	ug/L	5		8270D	Total/NA
Acenaphthylene	4.5		4.1	1.1	ug/L	5		8270D	Total/NA
Diethyl phthalate	33		8.1	1.5	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	37	J	41	7.3	ug/L	5		8270D	Total/NA
Di-n-butyl phthalate	5.5	J	20	3.0	ug/L	5		8270D	Total/NA
Fluorene	1.8	J	4.1	0.99	ug/L	5		8270D	Total/NA
Isophorone	5.4	J	8.1	1.5	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	22		2.0	0.27	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	210		8.1	1.8	ug/L	5		8270D	Total/NA
Naphthalene	250		4.1	1.3	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	14		4.1	1.5	ug/L	5		8270D	Total/NA
Pentachlorophenol	65	J	81	16	ug/L	5		8270D	Total/NA
Phenol	56		20	2.7	ug/L	5		8270D	Total/NA
1,1'-Biphenyl	3.1	J	20	1.5	ug/L	5		8270D	Total/NA
Arsenic	0.0087	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.24		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0044	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0027	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0022	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	7.4		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	42		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.42		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.011		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	64		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	230		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0035	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Arsenic	0.0049	J	0.010	0.0031	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-13-GW-04282016 (Continued) — Lab Sample ID: 500-110872-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.24		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0035	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	6.7		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	43		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.35		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.011		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	66		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0033	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	1.7		1.0	0.22	mg/L	1		9034	Total/NA
Sulfate	390		100	40	mg/L	20		9038	Total/NA
Total Organic Carbon - Duplicates	67		4.0	0.92	mg/L	4		9060A	Total/NA
Total Suspended Solids	14		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	61	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.010	J B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: MW-12-GW-04282016 — Lab Sample ID: 500-110872-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	160		5.0	1.5	ug/L	10		8260B	Total/NA
Chloroethane	26		10	5.1	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	1100		10	4.1	ug/L	10		8260B	Total/NA
1,1-Dichloroethene	10		10	3.9	ug/L	10		8260B	Total/NA
Isopropylbenzene	43		10	3.9	ug/L	10		8260B	Total/NA
Tetrachloroethene	680		10	3.7	ug/L	10		8260B	Total/NA
trans-1,2-Dichloroethene	23		10	3.5	ug/L	10		8260B	Total/NA
Trichloroethene	720		5.0	1.6	ug/L	10		8260B	Total/NA
Vinyl chloride	420		5.0	2.0	ug/L	10		8260B	Total/NA
Acetone - DL	4800		500	170	ug/L	100		8260B	Total/NA
1,1-Dichloroethane - DL	3300		100	41	ug/L	100		8260B	Total/NA
Ethylbenzene - DL	3400		50	18	ug/L	100		8260B	Total/NA
Methylene Chloride - DL	6300		500	160	ug/L	100		8260B	Total/NA
Methyl Ethyl Ketone - DL	2700		500	210	ug/L	100		8260B	Total/NA
methyl isobutyl ketone - DL	24000		5000	2200	ug/L	1000		8260B	Total/NA
Toluene - DL	11000		50	15	ug/L	100		8260B	Total/NA
Xylenes, Total - DL	19000		100	22	ug/L	100		8260B	Total/NA
2-Methylnaphthalene	46		41	5.3	ug/L	100		8270D	Total/NA
Naphthalene	160		81	25	ug/L	100		8270D	Total/NA
Pentachlorophenol	1200	J	1600	320	ug/L	100		8270D	Total/NA
Phenol	4000		410	55	ug/L	100		8270D	Total/NA
Isophorone - DL	19000		810	150	ug/L	500		8270D	Total/NA
2-Methylphenol - DL	7600		810	120	ug/L	500		8270D	Total/NA
3 & 4 Methylphenol - DL2	510000		16000	3700	ug/L	10000		8270D	Total/NA
Aluminum	0.15	J ^	0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.019	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.030		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.091		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	350		0.20	0.059	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016 (Continued) — Lab Sample ID: 500-110872-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.067		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.12		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0049	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	42		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.011		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	300		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	2.6		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.27		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	150		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.023		0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	1600		5.0	2.2	mg/L	5		6010C	Total/NA
Vanadium	0.017		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.23		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.062	J ^	0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.012	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.026		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.088		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	330		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.063		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.12		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0035	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	41		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0040	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	290		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	2.4		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.25		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	150		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.019		0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	1700		5.0	2.2	mg/L	5		6010C	Dissolved
Vanadium	0.017		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.12		0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfide	7.6		1.0	0.22	mg/L	1		9034	Total/NA
Sulfate	1600		500	200	mg/L	100		9038	Total/NA
Total Organic Carbon - Duplicates	2200		80	18	mg/L	80		9060A	Total/NA
Total Suspended Solids	140		9.1	2.9	mg/L	1		SM 2540D	Total/NA
Ammonia	440	B	20	4.3	mg/L	100		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.030	B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: MW-11-GW-04282016 — Lab Sample ID: 500-110872-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	15		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	88		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	6.9		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	5.3		1.0	0.51	ug/L	1		8260B	Total/NA
Cyclohexane	75		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.0		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	100		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	36		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	72		1.0	0.32	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-11-GW-04282016 (Continued) — Lab Sample ID: 500-110872-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl Ethyl Ketone	5.1		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	5.0		5.0	2.2	ug/L	1		8260B	Total/NA
Styrene	4.3		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	150		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.70		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	620		5.0	1.1	ug/L	5		8260B	Total/NA
Bis(2-chloroethoxy)methane	3.8	J	16	2.3	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	16	J	80	14	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	2.9	J	4.0	0.52	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	180		16	3.6	ug/L	10		8270D	Total/NA
Naphthalene	8.0		8.0	2.5	ug/L	10		8270D	Total/NA
Phenol	31	J	40	5.4	ug/L	10		8270D	Total/NA
1,1'-Biphenyl	19	J	40	2.9	ug/L	10		8270D	Total/NA
Aluminum	0.12	J ^	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	1.1		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0083	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0021	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0053	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	35		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0073		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	120		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.27		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.017		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	140		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0054	J ^	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	360		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0053		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.014	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	1.2		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	140		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0083	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0021	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0039	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	36		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0044	J	0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.28		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.019		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	150		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	380		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0056		0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	6.5		5.0	2.0	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	91		4.0	0.92	mg/L	4		9060A	Total/NA
Total Suspended Solids	85		9.1	2.9	mg/L	1		SM 2540D	Total/NA
Ammonia	67	B	5.0	1.1	mg/L	25		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.020	B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: DUP-1(04282016) — Lab Sample ID: 500-110872-5

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016) (Continued) — Lab Sample ID: 500-110872-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	450		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	26		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	14		10	3.3	ug/L	10		8260B	Total/NA
1,1-Dichloroethane	23		10	4.1	ug/L	10		8260B	Total/NA
Ethylbenzene	1900		5.0	1.8	ug/L	10		8260B	Total/NA
Isopropylbenzene	110		10	3.9	ug/L	10		8260B	Total/NA
Styrene	120		10	3.9	ug/L	10		8260B	Total/NA
Vinyl chloride	7.1		5.0	2.0	ug/L	10		8260B	Total/NA
Toluene - DL	4600		50	15	ug/L	100		8260B	Total/NA
Xylenes, Total - DL	14000		100	22	ug/L	100		8260B	Total/NA
Acenaphthylene	5.1	J	8.1	2.2	ug/L	10		8270D	Total/NA
Diethyl phthalate	31		16	2.9	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	40	J	81	15	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	20		4.0	0.52	ug/L	10		8270D	Total/NA
2-Methylphenol	14	J	16	2.5	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	280		16	3.6	ug/L	10		8270D	Total/NA
Naphthalene	260		8.1	2.5	ug/L	10		8270D	Total/NA
N-Nitrosodiphenylamine	15		8.1	3.0	ug/L	10		8270D	Total/NA
Phenol	84		40	5.4	ug/L	10		8270D	Total/NA
1,1'-Biphenyl	3.2	J	40	2.9	ug/L	10		8270D	Total/NA
Aluminum	0.066	J ^	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0075	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0045	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0026	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0025	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	7.3		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0029	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	43		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.35		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.011		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	68		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0059	J ^	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	240		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0039	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Arsenic	0.0085	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0045	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0025	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	7.5		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	46		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.37		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.011		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	71		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0077	J ^	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0036	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	1.7		1.0	0.22	mg/L	1		9034	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016) (Continued) — Lab Sample ID: 500-110872-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	150		50	20	mg/L	10		9038	Total/NA
Total Organic Carbon - Duplicates	56		2.0	0.46	mg/L	2		9060A	Total/NA
Total Suspended Solids	26		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	52	B	5.0	1.1	mg/L	25		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.010	J B	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

This Detection Summary does not include radiochemical test results.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 6, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-110872-1**
Pace Workorder: 18926

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, April 29, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 05/06/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 104

Report ID: 18926 - 790734

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 18926 500-110872-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received
189260001	MW-1-GW-04282016	Water	4/28/2016 08:22	4/29/2016 11:00
189260002	MW-13-GW-04282016	Water	4/28/2016 10:22	4/29/2016 11:00
189260003	MW-12-GW-04282016	Water	4/28/2016 12:40	4/29/2016 11:00
189260004	MW-11-GW-04282016	Water	4/28/2016 14:22	4/29/2016 11:00
189260005	DUP-1(04282016)	Water	4/28/2016 00:00	4/29/2016 11:00

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PROJECT SUMMARY

Workorder: 18926 500-110872-1

Sample Comments

Lab ID: 189260005 **Sample ID:** DUP-1(04282016) **Sample Type:** N

The second container provided for testing was lost/broken during the preparation of the sample. The results provided in the body of the report cannot be confirmed through re-analysis.

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ANALYTICAL RESULTS

Workorder: 18926 500-110872-1

Lab ID: 189260001 Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: MW-1-GW-04282016 Date Collected: 4/28/2016 08:22

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	17000	ug/l	0.50	0.033	1	4/30/2016 09:42	TD	n
Carbon Dioxide	<5.0	mg/l	5.0	0.26	1	4/30/2016 09:42	TD	n
Oxygen	4.2	mg/l	0.50	0.097	1	4/30/2016 09:42	TD	n
Nitrogen	10	mg/l	2.0	0.20	1	4/30/2016 09:42	TD	n

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ANALYTICAL RESULTS

Workorder: 18926 500-110872-1

Lab ID: **189260002** Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: **MW-13-GW-04282016** Date Collected: 4/28/2016 10:22

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**26000**	ug/l	0.50	0.033	1	4/30/2016 09:55	TD	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.26	1	4/30/2016 09:55	TD	n
Oxygen	**1.3**	mg/l	0.50	0.097	1	4/30/2016 09:55	TD	n
Nitrogen	**5.0**	mg/l	2.0	0.20	1	4/30/2016 09:55	TD	n

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ANALYTICAL RESULTS

Workorder: 18926 500-110872-1

Lab ID: 189260003 Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: MW-12-GW-04282016 Date Collected: 4/28/2016 12:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	16000	ug/l	0.50	0.033	1	4/30/2016 10:07	TD	n
Carbon Dioxide	220	mg/l	5.0	0.26	1	4/30/2016 10:07	TD	n
Oxygen	0.90	mg/l	0.50	0.097	1	4/30/2016 10:07	TD	n
Nitrogen	7.2	mg/l	2.0	0.20	1	4/30/2016 10:07	TD	n

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ANALYTICAL RESULTS

Workorder: 18926 500-110872-1

Lab ID: 189260004 Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: MW-11-GW-04282016 Date Collected: 4/28/2016 14:22

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.033	1	4/30/2016 10:20	TD	n
Carbon Dioxide	**180**	mg/l	5.0	0.26	1	4/30/2016 10:20	TD	n
Oxygen	**1.4**	mg/l	0.50	0.097	1	4/30/2016 10:20	TD	n
Nitrogen	**7.2**	mg/l	2.0	0.20	1	4/30/2016 10:20	TD	n

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ANALYTICAL RESULTS

Workorder: 18926 500-110872-1

Lab ID: 189260005 Date Received: 4/29/2016 11:00 Matrix: Water
Sample ID: DUP-1(04282016) Date Collected: 4/28/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**22000**	ug/l	0.50	0.033	1	4/30/2016 11:30	TD	n
Carbon Dioxide	41	mg/l	5.0	0.26	1	4/30/2016 11:30	TD	n
Oxygen	2.3	mg/l	0.50	0.097	1	4/30/2016 11:30	TD	n
Nitrogen	7.8	mg/l	2.0	0.20	1	4/30/2016 11:30	TD	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 18926 500-110872-1

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAx, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 18926 500-110872-1

QC Batch: DISG/5334 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 189260001, 189260002, 189260003, 189260004, 189260005

METHOD BLANK: 41624

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 41625

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 41626 41628

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	810	740	109	100	80-120	8.6	20	n

LABORATORY CONTROL SAMPLE & LCSD: 41627 41629

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	110	110	80-120	0	20	n
Oxygen	mg/l	11	12	11	109	94	80-120	15	20	n
Nitrogen	mg/l	140	130	120	92	86	80-120	6.7	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 18926 500-110872-1

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 18926 500-110872-1

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
189260001	MW-1-GW-04282016			AM20GAX	DISG/5334
189260002	MW-13-GW-04282016			AM20GAX	DISG/5334
189260003	MW-12-GW-04282016			AM20GAX	DISG/5334
189260004	MW-11-GW-04282016			AM20GAX	DISG/5334
189260005	DUP-1(04282016)			AM20GAX	DISG/5334

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Chain of Custody Documents

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

18926

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving
Company: Pace Analytical Services, Inc.
Address: 220 William Pitt Way, ,
City: Pittsburgh
State, Zip: PA, 15238
Phone: 412-826-5245(Tel)
Email:
Project Name: Lake Calumet Cluster Site
Site:

Sampler:
Phone:
Due Date Requested: 5/10/2016
TAT Requested (days):
PO #:
WO #:
Project #: 50011099
SSOW#:

Lab PM: Hargraves, Therese M
E-Mail: therese.hargraves@testamericainc.com
Carrier Tracking No(s):
COC No: 500-72738.1
Page: Page 1 of 1
Job #: 500-110872-1

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - Di Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-1-GW-04282016 (500-110872-1)	4/28/16	08:22 Central		Water			X	2	
MW-13-GW-04282016 (500-110872-2)	4/28/16	10:22 Central		Water			X	2	
MW-12-GW-04282016 (500-110872-3)	4/28/16	12:40 Central		Water			X	2	
MW-11-GW-04282016 (500-110872-4)	4/28/16	14:22 Central		Water			X	2	
DUP-1(04282016) (500-110872-5)	4/28/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/28/16 1715	TA-CHI	[signature]	4-29-16 1100	PAS

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Cooler Receipt Form

Client Name: TA Chicago Project: 500-110872 Lab Work Order: 18926

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 6514 8423 6385

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LJ Date: 8.29.16

Project Manager Review: RLD Date: 4-30-16

F-PAE-Q-009-rev.00, 20 Nov2014

Sample Tracking Record

Client Name: Test America

Page ____ of ____

Client Project Number: 500-110872-1

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas				
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
18926/1-5				see above	LY	4.29.16	11:00
18926-1→5	TD	4-30-16	5:20		TD	4-30-16	14:00

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI
Local Method	General Sub Contract Method	NONE	SC0015

Protocol References:

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

SC0015 = Pace-Pittsburgh (Microseeps), 220 William Pitt Way, Pittsburgh, PA 15238, TEL (412)826-5245

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-110872-1	MW-1-GW-04282016	Water	04/28/16 08:22	04/28/16 16:05
500-110872-2	MW-13-GW-04282016	Water	04/28/16 10:22	04/28/16 16:05
500-110872-3	MW-12-GW-04282016	Water	04/28/16 12:40	04/28/16 16:05
500-110872-4	MW-11-GW-04282016	Water	04/28/16 14:22	04/28/16 16:05
500-110872-5	DUP-1(04282016)	Water	04/28/16 00:00	04/28/16 16:05

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Lab Sample ID: 500-110872-1

Date Collected: 04/28/16 08:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**94**		5.0	1.7	ug/L			05/11/16 10:58	1
Benzene	**25**		0.50	0.15	ug/L			05/11/16 10:58	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/11/16 10:58	1
Bromoform	<1.0		1.0	0.48	ug/L			05/11/16 10:58	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/11/16 10:58	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/11/16 10:58	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/11/16 10:58	1
Chlorobenzene	**4.1**		1.0	0.39	ug/L			05/11/16 10:58	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/11/16 10:58	1
Chloroform	<1.0		1.0	0.37	ug/L			05/11/16 10:58	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/11/16 10:58	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/11/16 10:58	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/11/16 10:58	1
Cyclohexane	**1.1**		1.0	0.49	ug/L			05/11/16 10:58	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/11/16 10:58	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/11/16 10:58	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/11/16 10:58	1
1,2-Dichlorobenzene	**1.1**		1.0	0.33	ug/L			05/11/16 10:58	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/11/16 10:58	1
1,4-Dichlorobenzene	**2.1**		1.0	0.36	ug/L			05/11/16 10:58	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/11/16 10:58	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/11/16 10:58	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/11/16 10:58	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/11/16 10:58	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/11/16 10:58	1
Ethylbenzene	**10**		0.50	0.18	ug/L			05/11/16 10:58	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/11/16 10:58	1
Isopropylbenzene	**7.3**		1.0	0.39	ug/L			05/11/16 10:58	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/11/16 10:58	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/11/16 10:58	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/11/16 10:58	1
Methyl Ethyl Ketone	**48**		5.0	2.1	ug/L			05/11/16 10:58	1
methyl isobutyl ketone	**57**		5.0	2.2	ug/L			05/11/16 10:58	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/11/16 10:58	1
Styrene	<1.0		1.0	0.39	ug/L			05/11/16 10:58	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/11/16 10:58	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/11/16 10:58	1
Toluene	**4.6**		0.50	0.15	ug/L			05/11/16 10:58	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/11/16 10:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/11/16 10:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/11/16 10:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/11/16 10:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/11/16 10:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/11/16 10:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/11/16 10:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/11/16 10:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/11/16 10:58	1
Xylenes, Total	**12**		1.0	0.22	ug/L			05/11/16 10:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Lab Sample ID: 500-110872-1

Date Collected: 04/28/16 08:22
Matrix: Water
Date Received: 04/28/16 16:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*71 - 120*		*05/11/16 10:58*	*1*
Dibromofluoromethane	*39*	*X*	*70 - 120*		*05/11/16 10:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*05/11/16 10:58*	*1*
Toluene-d8 (Surr)	*79*		*75 - 120*		*05/11/16 10:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**7.4**		0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
Acenaphthylene	<0.82		0.82	0.22	ug/L		05/03/16 09:31	05/06/16 00:42	1
Acetophenone	**1.3**	**J**	4.1	0.54	ug/L		05/03/16 09:31	05/06/16 00:42	1
Anthracene	<0.82		0.82	0.27	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[a]anthracene	<0.16		0.16	0.046	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[a]pyrene	<0.16		0.16	0.081	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[b]fluoranthene	<0.16		0.16	0.066	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[g,h,i]perylene	<0.82		0.82	0.31	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[k]fluoranthene	<0.16		0.16	0.052	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.24	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-ethylhexyl) phthalate	<8.2		8.2	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Bromophenyl phenyl ether	<4.1		4.1	0.44	ug/L		05/03/16 09:31	05/06/16 00:42	1
Butyl benzyl phthalate	<1.6		1.6	0.39	ug/L		05/03/16 09:31	05/06/16 00:42	1
Carbazole	**6.6**		4.1	0.29	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chloroaniline	**4.1**	**J ^**	8.2	1.7	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chloro-3-methylphenol	<8.2		8.2	1.9	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Chlorophenol	<4.1		4.1	0.46	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chlorophenyl phenyl ether	<4.1		4.1	0.52	ug/L		05/03/16 09:31	05/06/16 00:42	1
Chrysene	<0.41		0.41	0.056	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dibenz(a,h)anthracene	<0.25		0.25	0.042	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dibenzofuran	**1.1**	**J**	1.6	0.22	ug/L		05/03/16 09:31	05/06/16 00:42	1
3,3'-Dichlorobenzidine	<4.1		4.1	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dichlorophenol	<8.2		8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
Diethyl phthalate	<1.6		1.6	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dimethylphenol	**4.4**	**J**	8.2	1.5	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dimethyl phthalate	<1.6		1.6	0.26	ug/L		05/03/16 09:31	05/06/16 00:42	1
Di-n-butyl phthalate	<4.1		4.1	0.60	ug/L		05/03/16 09:31	05/06/16 00:42	1
4,6-Dinitro-2-methylphenol	<16		16	4.8	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dinitrophenol	<16	*	16	7.0	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dinitrotoluene	<0.82		0.82	0.20	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,6-Dinitrotoluene	<0.41		0.41	0.060	ug/L		05/03/16 09:31	05/06/16 00:42	1
Di-n-octyl phthalate	<8.2	*	8.2	0.86	ug/L		05/03/16 09:31	05/06/16 00:42	1
Fluoranthene	<0.82		0.82	0.37	ug/L		05/03/16 09:31	05/06/16 00:42	1
Fluorene	**2.1**		0.82	0.20	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachlorobenzene	<0.41		0.41	0.065	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachlorobutadiene	<4.1		4.1	0.42	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachlorocyclopentadiene	<16		16	5.2	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachloroethane	<4.1		4.1	0.49	ug/L		05/03/16 09:31	05/06/16 00:42	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.061	ug/L		05/03/16 09:31	05/06/16 00:42	1
Isophorone	<1.6		1.6	0.31	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Methylnaphthalene	**5.1**		0.41	0.053	ug/L		05/03/16 09:31	05/06/16 00:42	1

Client Sample ID: MW-1-GW-04282016

Lab Sample ID: 500-110872-1

Date Collected: 04/28/16 08:22

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	**J**	1.6	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
3 & 4 Methylphenol	**16**		1.6	0.37	ug/L		05/03/16 09:31	05/06/16 00:42	1
Naphthalene	**150**	**E**	0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Nitroaniline	<4.1		4.1	1.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
3-Nitroaniline	<8.2	^	8.2	1.5	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Nitroaniline	<8.2		8.2	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
Nitrobenzene	<0.82		0.82	0.37	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Nitrophenol	<8.2		8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Nitrophenol	<16	*	16	6.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
N-Nitrosodi-n-propylamine	<0.41		0.41	0.13	ug/L		05/03/16 09:31	05/06/16 00:42	1
N-Nitrosodiphenylamine	<0.82		0.82	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.31	ug/L		05/03/16 09:31	05/06/16 00:42	1
Pentachlorophenol	<16		16	3.2	ug/L		05/03/16 09:31	05/06/16 00:42	1
Phenanthrene	**1.1**		0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
Phenol	**30**		4.1	0.55	ug/L		05/03/16 09:31	05/06/16 00:42	1
Pyrene	<0.82		0.82	0.35	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4,5-Trichlorophenol	<8.2		8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4,6-Trichlorophenol	<4.1		4.1	0.59	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzaldehyde	<16	*	16	12	ug/L		05/03/16 09:31	05/06/16 00:42	1
Caprolactam	<8.2	*	8.2	1.2	ug/L		05/03/16 09:31	05/06/16 00:42	1
Atrazine	<4.1		4.1	0.51	ug/L		05/03/16 09:31	05/06/16 00:42	1
1,1'-Biphenyl	<4.1		4.1	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*30 - 123*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
2-Fluorophenol (Surr)	*47*		*30 - 110*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
Phenol-d5 (Surr)	*42*		*20 - 100*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*05/03/16 09:31*	*05/06/16 00:42*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0054	ug/L		04/29/16 10:36	05/03/16 12:42	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		04/29/16 10:36	05/03/16 12:42	1
alpha-Chlordane	<0.041		0.041	0.0045	ug/L		04/29/16 10:36	05/03/16 12:42	1
beta-BHC	<0.041		0.041	0.010	ug/L		04/29/16 10:36	05/03/16 12:42	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 12:42	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		04/29/16 10:36	05/03/16 12:42	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		04/29/16 10:36	05/03/16 12:42	1
delta-BHC	<0.041		0.041	0.011	ug/L		04/29/16 10:36	05/03/16 12:42	1
Dieldrin	<0.041		0.041	0.013	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endrin	<0.041		0.041	0.015	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endrin ketone	<0.041		0.041	0.017	ug/L		04/29/16 10:36	05/03/16 12:42	1
gamma-BHC (Lindane)	<0.041		0.041	0.0057	ug/L		04/29/16 10:36	05/03/16 12:42	1
gamma-Chlordane	<0.041		0.041	0.0074	ug/L		04/29/16 10:36	05/03/16 12:42	1

Client Sample ID: MW-1-GW-04282016

Date Collected: 04/28/16 08:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 12:42	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 12:42	1
Methoxychlor	<0.082		0.082	0.023	ug/L		04/29/16 10:36	05/03/16 12:42	1
Toxaphene	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 12:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*63*		*30 - 143*	*04/29/16 10:36*	*05/03/16 12:42*	*1*
Tetrachloro-m-xylene	*96*		*30 - 120*	*04/29/16 10:36*	*05/03/16 12:42*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.068	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1221	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1232	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1242	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1248	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1254	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1260	<0.41		0.41	0.071	ug/L		04/29/16 10:36	05/03/16 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*58*		*30 - 127*	*04/29/16 10:36*	*05/03/16 19:10*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 150*	*04/29/16 10:36*	*05/03/16 19:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.20**	**^**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:01	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:01	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:01	1
Barium	**0.88**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:01	1
Calcium	**930**		1.0	0.30	mg/L		04/29/16 08:31	05/03/16 02:41	5
Chromium	<0.010		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:01	1
Copper	**0.0070**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:01	1
Iron	<0.20		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:01	1
Lead	**0.0041**	**J**	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:24	1
Magnesium	**0.059**	**J**	0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:01	1
Manganese	**0.0052**	**J**	0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:01	1
Nickel	**0.017**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:01	1
Potassium	**52**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:01	1
Selenium	<0.010	^	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:01	1
Sodium	**250**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:01	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:01	1
Zinc	**0.032**		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.077**	**J ^**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Lab Sample ID: 500-110872-1
Date Collected: 04/28/16 08:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:06	1
Arsenic	**0.0055**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:06	1
Barium	**0.78**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:06	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:06	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:06	1
Calcium	**790**		1.0	0.30	mg/L		04/29/16 08:31	05/03/16 02:51	5
Chromium	<0.010		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:06	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:06	1
Copper	**0.0047**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:06	1
Iron	**0.21**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:06	1
Lead	**0.0028**	**J**	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:30	1
Magnesium	<0.10		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:06	1
Manganese	<0.010		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:06	1
Nickel	**0.016**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:06	1
Potassium	**48**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:06	1
Selenium	**0.0051**	**J ^**	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:06	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:06	1
Sodium	**230**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:06	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:06	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:06	1
Zinc	**0.013**	**J**	0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:10	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J**	0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**2.5**		1.0	0.22	mg/L			05/03/16 05:24	1
Sulfate	**18**		5.0	2.0	mg/L			05/06/16 09:10	1
Total Organic Carbon - Duplicates	**26**		1.0	0.23	mg/L			05/08/16 17:44	1
Nitrogen, Nitrate	**0.050**	**J**	0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**8.5**		5.0	1.6	mg/L			05/03/16 11:28	1
Ammonia	**53**	**B**	5.0	1.1	mg/L		05/09/16 19:05	05/09/16 22:00	25
Nitrogen, Nitrite	**0.0066**	**J B**	0.020	0.0032	mg/L			04/29/16 14:51	1
Nitrogen, Nitrate Nitrite	**0.057**	**J**	0.10	0.045	mg/L			05/02/16 19:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2

Date Collected: 04/28/16 10:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**85**		50	17	ug/L			05/11/16 11:26	10
Benzene	**630**		5.0	1.5	ug/L			05/11/16 11:26	10
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 11:26	10
Bromoform	<10		10	4.8	ug/L			05/11/16 11:26	10
Bromomethane	<20		20	8.0	ug/L			05/11/16 11:26	10
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 11:26	10
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 11:26	10
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 11:26	10
Chloroethane	<10		10	5.1	ug/L			05/11/16 11:26	10
Chloroform	<10		10	3.7	ug/L			05/11/16 11:26	10
Chloromethane	<10		10	3.2	ug/L			05/11/16 11:26	10
cis-1,2-Dichloroethene	**54**		10	4.1	ug/L			05/11/16 11:26	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			05/11/16 11:26	10
Cyclohexane	<10		10	4.9	ug/L			05/11/16 11:26	10
Dibromochloromethane	<10		10	4.9	ug/L			05/11/16 11:26	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			05/11/16 11:26	10
1,2-Dibromoethane	<10		10	3.9	ug/L			05/11/16 11:26	10
1,2-Dichlorobenzene	**17**		10	3.3	ug/L			05/11/16 11:26	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			05/11/16 11:26	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			05/11/16 11:26	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			05/11/16 11:26	10
1,1-Dichloroethane	**52**		10	4.1	ug/L			05/11/16 11:26	10
1,2-Dichloroethane	<10		10	3.9	ug/L			05/11/16 11:26	10
1,1-Dichloroethene	<10		10	3.9	ug/L			05/11/16 11:26	10
1,2-Dichloropropane	<10		10	4.3	ug/L			05/11/16 11:26	10
2-Hexanone	<50		50	16	ug/L			05/11/16 11:26	10
Isopropylbenzene	**97**		10	3.9	ug/L			05/11/16 11:26	10
Methyl acetate	<50		50	20	ug/L			05/11/16 11:26	10
Methylcyclohexane	<10		10	3.2	ug/L			05/11/16 11:26	10
Methylene Chloride	<50		50	16	ug/L			05/11/16 11:26	10
Methyl Ethyl Ketone	**60**		50	21	ug/L			05/11/16 11:26	10
methyl isobutyl ketone	<50		50	22	ug/L			05/11/16 11:26	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			05/11/16 11:26	10
Styrene	<10		10	3.9	ug/L			05/11/16 11:26	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			05/11/16 11:26	10
Tetrachloroethene	<10		10	3.7	ug/L			05/11/16 11:26	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			05/11/16 11:26	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			05/11/16 11:26	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			05/11/16 11:26	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			05/11/16 11:26	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			05/11/16 11:26	10
Trichloroethene	<5.0		5.0	1.6	ug/L			05/11/16 11:26	10
Trichlorofluoromethane	<10		10	4.3	ug/L			05/11/16 11:26	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			05/11/16 11:26	10
Vinyl chloride	**15**		5.0	2.0	ug/L			05/11/16 11:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*05/11/16 11:26*	*10*
Dibromofluoromethane	*86*		*70 - 120*		*05/11/16 11:26*	*10*

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2
Date Collected: 04/28/16 10:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		71 - 127		05/11/16 11:26	10
Toluene-d8 (Surr)	89		75 - 120		05/11/16 11:26	10

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**2500**		50	18	ug/L			05/11/16 11:54	100
Toluene	**8100**		50	15	ug/L			05/11/16 11:54	100
Xylenes, Total	**17000**		100	22	ug/L			05/11/16 11:54	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		71 - 120		05/11/16 11:54	100
Dibromofluoromethane	91		70 - 120		05/11/16 11:54	100
1,2-Dichloroethane-d4 (Surr)	103		71 - 127		05/11/16 11:54	100
Toluene-d8 (Surr)	93		75 - 120		05/11/16 11:54	100

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.4**	**J**	4.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Acenaphthylene	**4.5**		4.1	1.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
Acetophenone	<20		20	2.7	ug/L		05/03/16 09:31	05/06/16 01:08	5
Anthracene	<4.1		4.1	1.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[a]anthracene	<0.81		0.81	0.23	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[a]pyrene	<0.81		0.81	0.40	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[b]fluoranthene	<0.81		0.81	0.33	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[g,h,i]perylene	<4.1		4.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[k]fluoranthene	<0.81		0.81	0.26	ug/L		05/03/16 09:31	05/06/16 01:08	5
Bis(2-chloroethoxy)methane	<8.1		8.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Bis(2-chloroethyl)ether	<8.1		8.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Bis(2-ethylhexyl) phthalate	<41		41	7.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Bromophenyl phenyl ether	<20		20	2.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Butyl benzyl phthalate	<8.1		8.1	2.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
Carbazole	<20		20	1.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Chloroaniline	<41	^	41	8.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Chloro-3-methylphenol	<41		41	9.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Chloronaphthalene	<8.1		8.1	0.96	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Chlorophenol	<20		20	2.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Chlorophenyl phenyl ether	<20		20	2.6	ug/L		05/03/16 09:31	05/06/16 01:08	5
Chrysene	<2.0		2.0	0.28	ug/L		05/03/16 09:31	05/06/16 01:08	5
Dibenz(a,h)anthracene	<1.2		1.2	0.21	ug/L		05/03/16 09:31	05/06/16 01:08	5
Dibenzofuran	<8.1		8.1	1.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
3,3'-Dichlorobenzidine	<20		20	7.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dichlorophenol	<41		41	11	ug/L		05/03/16 09:31	05/06/16 01:08	5
Diethyl phthalate	**33**		8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dimethylphenol	**37**	**J**	41	7.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Dimethyl phthalate	<8.1		8.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Di-n-butyl phthalate	**5.5**	**J**	20	3.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
4,6-Dinitro-2-methylphenol	<81		81	24	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dinitrophenol	<81	*	81	35	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dinitrotoluene	<4.1		4.1	1.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,6-Dinitrotoluene	<2.0		2.0	0.30	ug/L		05/03/16 09:31	05/06/16 01:08	5

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2

Date Collected: 04/28/16 10:22

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<41	*	41	4.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Fluoranthene	<4.1		4.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
Fluorene	**1.8**	**J**	4.1	0.99	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachlorobenzene	<2.0		2.0	0.32	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachlorobutadiene	<20		20	2.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachlorocyclopentadiene	<81		81	26	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachloroethane	<20		20	2.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
Indeno[1,2,3-cd]pyrene	<0.81		0.81	0.30	ug/L		05/03/16 09:31	05/06/16 01:08	5
Isophorone	**5.4**	**J**	8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Methylnaphthalene	**22**		2.0	0.27	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Methylphenol	<8.1		8.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
3 & 4 Methylphenol	**210**		8.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
Naphthalene	**250**		4.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Nitroaniline	<20		20	5.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
3-Nitroaniline	<41	^	41	7.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Nitroaniline	<41		41	6.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
Nitrobenzene	<4.1		4.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Nitrophenol	<41		41	10	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Nitrophenol	<81	*	81	30	ug/L		05/03/16 09:31	05/06/16 01:08	5
N-Nitrosodi-n-propylamine	<2.0		2.0	0.63	ug/L		05/03/16 09:31	05/06/16 01:08	5
N-Nitrosodiphenylamine	**14**		4.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,2'-oxybis[1-chloropropane]	<8.1		8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
Pentachlorophenol	**65**	**J**	81	16	ug/L		05/03/16 09:31	05/06/16 01:08	5
Phenanthrene	<4.1		4.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Phenol	**56**		20	2.7	ug/L		05/03/16 09:31	05/06/16 01:08	5
Pyrene	<4.1		4.1	1.7	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4,5-Trichlorophenol	<41		41	10	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4,6-Trichlorophenol	<20		20	2.9	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzaldehyde	<81	*	81	62	ug/L		05/03/16 09:31	05/06/16 01:08	5
Caprolactam	<41	*	41	6.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
Atrazine	<20		20	2.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
1,1'-Biphenyl	**3.1**	**J**	20	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*30 - 123*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
2-Fluorophenol (Surr)	*55*		*30 - 110*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
Phenol-d5 (Surr)	*50*		*20 - 100*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
Terphenyl-d14 (Surr)	*109*		*42 - 150*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
2,4,6-Tribromophenol (Surr)	*128*		*30 - 150*	*05/03/16 09:31*	*05/06/16 01:08*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0054	ug/L		04/29/16 10:36	05/03/16 13:02	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		04/29/16 10:36	05/03/16 13:02	1
alpha-Chlordane	<0.041		0.041	0.0045	ug/L		04/29/16 10:36	05/03/16 13:02	1
beta-BHC	<0.041		0.041	0.010	ug/L		04/29/16 10:36	05/03/16 13:02	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 13:02	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		04/29/16 10:36	05/03/16 13:02	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		04/29/16 10:36	05/03/16 13:02	1

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2

Date Collected: 04/28/16 10:22

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.041		0.041	0.011	ug/L		04/29/16 10:36	05/03/16 13:02	1
Dieldrin	<0.041		0.041	0.013	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endrin	<0.041		0.041	0.015	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endrin ketone	<0.041		0.041	0.017	ug/L		04/29/16 10:36	05/03/16 13:02	1
gamma-BHC (Lindane)	<0.041		0.041	0.0057	ug/L		04/29/16 10:36	05/03/16 13:02	1
gamma-Chlordane	<0.041		0.041	0.0074	ug/L		04/29/16 10:36	05/03/16 13:02	1
Heptachlor	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 13:02	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 13:02	1
Methoxychlor	<0.082		0.082	0.024	ug/L		04/29/16 10:36	05/03/16 13:02	1
Toxaphene	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*34*		*30 - 143*	*04/29/16 10:36*	*05/03/16 13:02*	*1*
Tetrachloro-m-xylene	*622*	*X*	*30 - 120*	*04/29/16 10:36*	*05/03/16 13:02*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<2.0		2.0	0.34	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1221	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1232	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1242	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1248	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1254	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1260	<2.0		2.0	0.36	ug/L		04/29/16 10:36	05/04/16 10:28	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*71*		*30 - 127*	*04/29/16 10:36*	*05/04/16 10:28*	*5*
DCB Decachlorobiphenyl	*39*		*30 - 150*	*04/29/16 10:36*	*05/04/16 10:28*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	^	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:11	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:11	1
Arsenic	**0.0087**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:11	1
Barium	**0.24**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:11	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:11	1
Calcium	**110**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:11	1
Chromium	**0.0044**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:11	1
Cobalt	**0.0027**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:11	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:11	1
Iron	**7.4**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:11	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:35	1
Magnesium	**42**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:11	1
Manganese	**0.42**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:11	1
Nickel	**0.011**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Date Collected: 04/28/16 10:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	**64**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:11	1
Selenium	<0.010	^	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:11	1
Sodium	**230**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:11	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:11	1
Vanadium	**0.0035**	**J**	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:11	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	^	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:25	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:25	1
Arsenic	**0.0049**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:25	1
Barium	**0.24**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:25	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:25	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:25	1
Calcium	**110**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:25	1
Chromium	**0.0035**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:25	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:25	1
Copper	<0.010		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:25	1
Iron	**6.7**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:25	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:48	1
Magnesium	**43**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:25	1
Manganese	**0.35**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:25	1
Nickel	**0.011**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:25	1
Potassium	**66**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:25	1
Selenium	<0.010	^	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:25	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:25	1
Sodium	**230**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:25	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:25	1
Vanadium	**0.0033**	**J**	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:25	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.7**		1.0	0.22	mg/L			05/03/16 05:27	1
Sulfate	**390**		100	40	mg/L			05/06/16 09:11	20
Total Organic Carbon - Duplicates	**67**		4.0	0.92	mg/L			05/08/16 18:24	4
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**14**		5.0	1.6	mg/L			05/03/16 11:31	1
Ammonia	**61**	**B**	4.0	0.86	mg/L		05/09/16 19:05	05/09/16 22:09	20
Nitrogen, Nitrite	**0.010**	**J B**	0.020	0.0032	mg/L			04/29/16 14:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2
Date Collected: 04/28/16 10:22
Matrix: Water
Date Received: 04/28/16 16:05

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**160**		5.0	1.5	ug/L			05/11/16 12:21	10
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 12:21	10
Bromoform	<10		10	4.8	ug/L			05/11/16 12:21	10
Bromomethane	<20		20	8.0	ug/L			05/11/16 12:21	10
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 12:21	10
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 12:21	10
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 12:21	10
Chloroethane	**26**		10	5.1	ug/L			05/11/16 12:21	10
Chloroform	<10		10	3.7	ug/L			05/11/16 12:21	10
Chloromethane	<10		10	3.2	ug/L			05/11/16 12:21	10
cis-1,2-Dichloroethene	**1100**		10	4.1	ug/L			05/11/16 12:21	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			05/11/16 12:21	10
Cyclohexane	<10		10	4.9	ug/L			05/11/16 12:21	10
Dibromochloromethane	<10		10	4.9	ug/L			05/11/16 12:21	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			05/11/16 12:21	10
1,2-Dibromoethane	<10		10	3.9	ug/L			05/11/16 12:21	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			05/11/16 12:21	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			05/11/16 12:21	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			05/11/16 12:21	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			05/11/16 12:21	10
1,2-Dichloroethane	<10		10	3.9	ug/L			05/11/16 12:21	10
1,1-Dichloroethene	**10**		10	3.9	ug/L			05/11/16 12:21	10
1,2-Dichloropropane	<10		10	4.3	ug/L			05/11/16 12:21	10
2-Hexanone	<50		50	16	ug/L			05/11/16 12:21	10
Isopropylbenzene	**43**		10	3.9	ug/L			05/11/16 12:21	10
Methyl acetate	<50		50	20	ug/L			05/11/16 12:21	10
Methylcyclohexane	<10		10	3.2	ug/L			05/11/16 12:21	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			05/11/16 12:21	10
Styrene	<10		10	3.9	ug/L			05/11/16 12:21	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			05/11/16 12:21	10
Tetrachloroethene	**680**		10	3.7	ug/L			05/11/16 12:21	10
trans-1,2-Dichloroethene	**23**		10	3.5	ug/L			05/11/16 12:21	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			05/11/16 12:21	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			05/11/16 12:21	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			05/11/16 12:21	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			05/11/16 12:21	10
Trichloroethene	**720**		5.0	1.6	ug/L			05/11/16 12:21	10
Trichlorofluoromethane	<10		10	4.3	ug/L			05/11/16 12:21	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			05/11/16 12:21	10
Vinyl chloride	**420**		5.0	2.0	ug/L			05/11/16 12:21	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*		*05/11/16 12:21*	*10*
Dibromofluoromethane	*86*		*70 - 120*		*05/11/16 12:21*	*10*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*		*05/11/16 12:21*	*10*
Toluene-d8 (Surr)	*92*		*75 - 120*		*05/11/16 12:21*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**4800**		500	170	ug/L			05/11/16 12:49	100

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	3300		100	41	ug/L			05/11/16 12:49	100
Ethylbenzene	3400		50	18	ug/L			05/11/16 12:49	100
Methylene Chloride	6300		500	160	ug/L			05/11/16 12:49	100
Methyl Ethyl Ketone	2700		500	210	ug/L			05/11/16 12:49	100
methyl isobutyl ketone	24000		5000	2200	ug/L			05/12/16 15:19	1000
Toluene	11000		50	15	ug/L			05/11/16 12:49	100
Xylenes, Total	19000		100	22	ug/L			05/11/16 12:49	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*71 - 120*		*05/11/16 12:49*	*100*
4-Bromofluorobenzene (Surr)	*90*		*71 - 120*		*05/12/16 15:19*	*1000*
Dibromofluoromethane	*89*		*70 - 120*		*05/11/16 12:49*	*100*
Dibromofluoromethane	*90*		*70 - 120*		*05/12/16 15:19*	*1000*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*05/11/16 12:49*	*100*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*		*05/12/16 15:19*	*1000*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/11/16 12:49*	*100*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/12/16 15:19*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<81		81	25	ug/L		05/03/16 09:31	05/06/16 01:35	100
Acenaphthylene	<81		81	22	ug/L		05/03/16 09:31	05/06/16 01:35	100
Acetophenone	<410		410	54	ug/L		05/03/16 09:31	05/06/16 01:35	100
Anthracene	<81		81	27	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[a]anthracene	<16		16	4.6	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[a]pyrene	<16		16	8.0	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[b]fluoranthene	<16		16	6.6	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[g,h,i]perylene	<81		81	31	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[k]fluoranthene	<16		16	5.2	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-chloroethoxy)methane	<160		160	23	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-chloroethyl)ether	<160		160	24	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-ethylhexyl) phthalate	<810		810	140	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Bromophenyl phenyl ether	<410		410	44	ug/L		05/03/16 09:31	05/06/16 01:35	100
Butyl benzyl phthalate	<160		160	39	ug/L		05/03/16 09:31	05/06/16 01:35	100
Carbazole	<410		410	29	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Chloroaniline	<810	^	810	160	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Chloro-3-methylphenol	<810		810	190	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Chloronaphthalene	<160		160	19	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Chlorophenol	<410		410	45	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Chlorophenyl phenyl ether	<410		410	52	ug/L		05/03/16 09:31	05/06/16 01:35	100
Chrysene	<41		41	5.5	ug/L		05/03/16 09:31	05/06/16 01:35	100
Dibenz(a,h)anthracene	<24		24	4.1	ug/L		05/03/16 09:31	05/06/16 01:35	100
Dibenzofuran	<160		160	21	ug/L		05/03/16 09:31	05/06/16 01:35	100
3,3'-Dichlorobenzidine	<410		410	140	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4-Dichlorophenol	<810		810	210	ug/L		05/03/16 09:31	05/06/16 01:35	100
Diethyl phthalate	<160		160	29	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4-Dimethylphenol	<810		810	150	ug/L		05/03/16 09:31	05/06/16 01:35	100
Dimethyl phthalate	<160		160	26	ug/L		05/03/16 09:31	05/06/16 01:35	100
Di-n-butyl phthalate	<410		410	59	ug/L		05/03/16 09:31	05/06/16 01:35	100
4,6-Dinitro-2-methylphenol	<1600		1600	480	ug/L		05/03/16 09:31	05/06/16 01:35	100

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	<1600	*	1600	700	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4-Dinitrotoluene	<81		81	20	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,6-Dinitrotoluene	<41		41	6.0	ug/L		05/03/16 09:31	05/06/16 01:35	100
Di-n-octyl phthalate	<810	*	810	85	ug/L		05/03/16 09:31	05/06/16 01:35	100
Fluoranthene	<81		81	37	ug/L		05/03/16 09:31	05/06/16 01:35	100
Fluorene	<81		81	20	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachlorobenzene	<41		41	6.5	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachlorobutadiene	<410		410	42	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachlorocyclopentadiene	<1600		1600	520	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachloroethane	<410		410	49	ug/L		05/03/16 09:31	05/06/16 01:35	100
Indeno[1,2,3-cd]pyrene	<16		16	6.1	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Methylnaphthalene	**46**		41	5.3	ug/L		05/03/16 09:31	05/06/16 01:35	100
Naphthalene	**160**		81	25	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Nitroaniline	<410		410	100	ug/L		05/03/16 09:31	05/06/16 01:35	100
3-Nitroaniline	<810	^	810	150	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Nitroaniline	<810		810	140	ug/L		05/03/16 09:31	05/06/16 01:35	100
Nitrobenzene	<81		81	37	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Nitrophenol	<810		810	200	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Nitrophenol	<1600	*	1600	600	ug/L		05/03/16 09:31	05/06/16 01:35	100
N-Nitrosodi-n-propylamine	<41		41	13	ug/L		05/03/16 09:31	05/06/16 01:35	100
N-Nitrosodiphenylamine	<81		81	30	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,2'-oxybis[1-chloropropane]	<160		160	31	ug/L		05/03/16 09:31	05/06/16 01:35	100
Pentachlorophenol	**1200**	**J**	1600	320	ug/L		05/03/16 09:31	05/06/16 01:35	100
Phenanthrene	<81		81	25	ug/L		05/03/16 09:31	05/06/16 01:35	100
Phenol	**4000**		410	55	ug/L		05/03/16 09:31	05/06/16 01:35	100
Pyrene	<81		81	35	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4,5-Trichlorophenol	<810		810	210	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4,6-Trichlorophenol	<410		410	58	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzaldehyde	<1600	*	1600	1200	ug/L		05/03/16 09:31	05/06/16 01:35	100
Caprolactam	<810	*	810	120	ug/L		05/03/16 09:31	05/06/16 01:35	100
Atrazine	<410		410	51	ug/L		05/03/16 09:31	05/06/16 01:35	100
1,1'-Biphenyl	<410		410	29	ug/L		05/03/16 09:31	05/06/16 01:35	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*05/03/16 09:31*	*05/06/16 01:35*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	**19000**		810	150	ug/L		05/03/16 09:31	05/07/16 08:32	500
2-Methylphenol	**7600**		810	120	ug/L		05/03/16 09:31	05/07/16 08:32	500

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**510000**		16000	3700	ug/L		05/03/16 09:31	05/07/16 08:58	10000

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.20		0.20	0.026	ug/L		04/29/16 10:36	05/03/16 13:21	5
alpha-BHC	<0.20		0.20	0.013	ug/L		04/29/16 10:36	05/03/16 13:21	5
alpha-Chlordane	<0.20		0.20	0.022	ug/L		04/29/16 10:36	05/03/16 13:21	5
beta-BHC	<0.20		0.20	0.050	ug/L		04/29/16 10:36	05/03/16 13:21	5
4,4'-DDD	<0.20		0.20	0.066	ug/L		04/29/16 10:36	05/03/16 13:21	5
4,4'-DDE	<0.20		0.20	0.019	ug/L		04/29/16 10:36	05/03/16 13:21	5
4,4'-DDT	<0.20		0.20	0.016	ug/L		04/29/16 10:36	05/03/16 13:21	5
delta-BHC	<0.20		0.20	0.051	ug/L		04/29/16 10:36	05/03/16 13:21	5
Dieldrin	<0.20		0.20	0.064	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endosulfan I	<0.20		0.20	0.020	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endosulfan II	<0.20		0.20	0.014	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endosulfan sulfate	<0.20		0.20	0.058	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endrin	<0.20		0.20	0.070	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endrin aldehyde	<0.20		0.20	0.041	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endrin ketone	<0.20		0.20	0.084	ug/L		04/29/16 10:36	05/03/16 13:21	5
gamma-BHC (Lindane)	<0.20		0.20	0.028	ug/L		04/29/16 10:36	05/03/16 13:21	5
gamma-Chlordane	<0.20		0.20	0.036	ug/L		04/29/16 10:36	05/03/16 13:21	5
Heptachlor	<0.20		0.20	0.067	ug/L		04/29/16 10:36	05/03/16 13:21	5
Heptachlor epoxide	<0.20		0.20	0.068	ug/L		04/29/16 10:36	05/03/16 13:21	5
Methoxychlor	<0.40		0.40	0.11	ug/L		04/29/16 10:36	05/03/16 13:21	5
Toxaphene	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/03/16 13:21	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*27*	*X*	*30 - 143*	*04/29/16 10:36*	*05/03/16 13:21*	*5*
Tetrachloro-m-xylene	*79*		*30 - 120*	*04/29/16 10:36*	*05/03/16 13:21*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<2.0		2.0	0.33	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1221	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1232	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1242	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1248	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1254	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1260	<2.0		2.0	0.35	ug/L		04/29/16 10:36	05/04/16 10:44	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*04/29/16 10:36*	*05/04/16 10:44*	*5*
DCB Decachlorobiphenyl	*29*	*X*	*30 - 150*	*04/29/16 10:36*	*05/04/16 10:44*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J ^**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:30	1
Antimony	**0.019**	**J**	0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:30	1
Arsenic	**0.030**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:30	1
Barium	**0.091**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:30	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:30	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:30	1
Calcium	**350**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:30	1
Chromium	**0.067**		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40
Matrix: Water
Date Received: 04/28/16 16:05

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.12		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:30	1
Copper	0.0049	J	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:30	1
Iron	42		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:30	1
Lead	0.011		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:53	1
Magnesium	300		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:30	1
Manganese	2.6		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:30	1
Nickel	0.27		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:30	1
Potassium	150		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:30	1
Selenium	0.023		0.010	0.0046	mg/L		04/29/16 08:31	05/03/16 17:53	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:30	1
Sodium	1600		5.0	2.2	mg/L		04/29/16 08:31	05/03/16 03:11	5
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:30	1
Vanadium	0.017		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:30	1
Zinc	0.23		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:30	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.062	J ^	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:36	1
Antimony	0.012	J	0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:36	1
Arsenic	0.026		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:36	1
Barium	0.088		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:36	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:36	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:36	1
Calcium	330		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:36	1
Chromium	0.063		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:36	1
Cobalt	0.12		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:36	1
Copper	0.0035	J	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:36	1
Iron	41		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:36	1
Lead	0.0040	J	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:59	1
Magnesium	290		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:36	1
Manganese	2.4		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:36	1
Nickel	0.25		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:36	1
Potassium	150		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:36	1
Selenium	0.019		0.010	0.0046	mg/L		04/29/16 08:31	05/03/16 17:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:36	1
Sodium	1700		5.0	2.2	mg/L		04/29/16 08:31	05/03/16 03:31	5
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:36	1
Vanadium	0.017		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:36	1
Zinc	0.12		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40

Matrix: Water

Date Received: 04/28/16 16:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.6**		1.0	0.22	mg/L			05/03/16 05:30	1
Sulfate	**1600**		500	200	mg/L			05/06/16 09:12	100
Total Organic Carbon - Duplicates	**2200**		80	18	mg/L			05/08/16 18:45	80
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**140**		9.1	2.9	mg/L			05/03/16 11:34	1
Ammonia	**440**	**B**	20	4.3	mg/L		05/09/16 19:05	05/09/16 22:12	100
Nitrogen, Nitrite	**0.030**	**B**	0.020	0.0032	mg/L			04/29/16 14:52	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-11-GW-04282016

Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**15**		5.0	1.7	ug/L			05/11/16 13:17	1
Benzene	**88**		0.50	0.15	ug/L			05/11/16 13:17	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/11/16 13:17	1
Bromoform	<1.0		1.0	0.48	ug/L			05/11/16 13:17	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/11/16 13:17	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/11/16 13:17	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/11/16 13:17	1
Chlorobenzene	**6.9**		1.0	0.39	ug/L			05/11/16 13:17	1
Chloroethane	**5.3**		1.0	0.51	ug/L			05/11/16 13:17	1
Chloroform	<1.0		1.0	0.37	ug/L			05/11/16 13:17	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/11/16 13:17	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/11/16 13:17	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/11/16 13:17	1
Cyclohexane	**75**		1.0	0.49	ug/L			05/11/16 13:17	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/11/16 13:17	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/11/16 13:17	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/11/16 13:17	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/11/16 13:17	1
1,4-Dichlorobenzene	**2.0**		1.0	0.36	ug/L			05/11/16 13:17	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/11/16 13:17	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/11/16 13:17	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/11/16 13:17	1
Ethylbenzene	**100**		0.50	0.18	ug/L			05/11/16 13:17	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/11/16 13:17	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			05/11/16 13:17	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/11/16 13:17	1
Methylcyclohexane	**72**		1.0	0.32	ug/L			05/11/16 13:17	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/11/16 13:17	1
Methyl Ethyl Ketone	**5.1**		5.0	2.1	ug/L			05/11/16 13:17	1
methyl isobutyl ketone	**5.0**		5.0	2.2	ug/L			05/11/16 13:17	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
Styrene	**4.3**		1.0	0.39	ug/L			05/11/16 13:17	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/11/16 13:17	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/11/16 13:17	1
Toluene	**150**		0.50	0.15	ug/L			05/11/16 13:17	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/11/16 13:17	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/11/16 13:17	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/11/16 13:17	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/11/16 13:17	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/11/16 13:17	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/11/16 13:17	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/11/16 13:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/11/16 13:17	1
Vinyl chloride	**0.70**		0.50	0.20	ug/L			05/11/16 13:17	1

Client Sample ID: MW-11-GW-04282016

Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22

Matrix: Water

Date Received: 04/28/16 16:05

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*71 - 120*		*05/11/16 13:17*	*1*
Dibromofluoromethane	*85*		*70 - 120*		*05/11/16 13:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*05/11/16 13:17*	*1*
Toluene-d8 (Surr)	*89*		*75 - 120*		*05/11/16 13:17*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**620**		5.0	1.1	ug/L			05/11/16 13:45	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*05/11/16 13:45*	*5*
Dibromofluoromethane	*88*		*70 - 120*		*05/11/16 13:45*	*5*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*05/11/16 13:45*	*5*
Toluene-d8 (Surr)	*91*		*75 - 120*		*05/11/16 13:45*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.0		8.0	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
Acenaphthylene	<8.0		8.0	2.2	ug/L		05/03/16 09:31	05/05/16 03:15	10
Acetophenone	<40		40	5.3	ug/L		05/03/16 09:31	05/05/16 03:15	10
Anthracene	<8.0		8.0	2.7	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[a]anthracene	<1.6		1.6	0.46	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[a]pyrene	<1.6		1.6	0.80	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[b]fluoranthene	<1.6		1.6	0.65	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[g,h,i]perylene	<8.0		8.0	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[k]fluoranthene	<1.6		1.6	0.51	ug/L		05/03/16 09:31	05/05/16 03:15	10
Bis(2-chloroethoxy)methane	**3.8**	**J**	16	2.3	ug/L		05/03/16 09:31	05/05/16 03:15	10
Bis(2-chloroethyl)ether	<16		16	2.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Bis(2-ethylhexyl) phthalate	<80		80	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Bromophenyl phenyl ether	<40		40	4.3	ug/L		05/03/16 09:31	05/05/16 03:15	10
Butyl benzyl phthalate	<16		16	3.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
Carbazole	<40		40	2.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Chloroaniline	<80	^	80	16	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Chloro-3-methylphenol	<80		80	19	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Chloronaphthalene	<16		16	1.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Chlorophenol	<40		40	4.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Chlorophenyl phenyl ether	<40		40	5.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Chrysene	<4.0		4.0	0.55	ug/L		05/03/16 09:31	05/05/16 03:15	10
Dibenz(a,h)anthracene	<2.4		2.4	0.41	ug/L		05/03/16 09:31	05/05/16 03:15	10
Dibenzofuran	<16		16	2.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
3,3'-Dichlorobenzidine	<40		40	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dichlorophenol	<80		80	21	ug/L		05/03/16 09:31	05/05/16 03:15	10
Diethyl phthalate	<16		16	2.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dimethylphenol	**16**	**J**	80	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
Dimethyl phthalate	<16		16	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
Di-n-butyl phthalate	<40		40	5.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
4,6-Dinitro-2-methylphenol	<160		160	47	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dinitrophenol	<160	*	160	69	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dinitrotoluene	<8.0		8.0	2.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,6-Dinitrotoluene	<4.0		4.0	0.59	ug/L		05/03/16 09:31	05/05/16 03:15	10
Di-n-octyl phthalate	<80	*	80	8.4	ug/L		05/03/16 09:31	05/05/16 03:15	10

Client Sample ID: MW-11-GW-04282016

Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.0		8.0	3.7	ug/L		05/03/16 09:31	05/05/16 03:15	10
Fluorene	<8.0		8.0	2.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorobenzene	<4.0		4.0	0.64	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorobutadiene	<40		40	4.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorocyclopentadiene	<160		160	51	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachloroethane	<40		40	4.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
Indeno[1,2,3-cd]pyrene	<1.6		1.6	0.60	ug/L		05/03/16 09:31	05/05/16 03:15	10
Isophorone	<16		16	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Methylnaphthalene	**2.9**	**J**	4.0	0.52	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Methylphenol	<16		16	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
3 & 4 Methylphenol	**180**		16	3.6	ug/L		05/03/16 09:31	05/05/16 03:15	10
Naphthalene	**8.0**		8.0	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Nitroaniline	<40		40	10	ug/L		05/03/16 09:31	05/05/16 03:15	10
3-Nitroaniline	<80		80	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Nitroaniline	<80		80	13	ug/L		05/03/16 09:31	05/05/16 03:15	10
Nitrobenzene	<8.0		8.0	3.6	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Nitrophenol	<80		80	20	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Nitrophenol	<160	*	160	60	ug/L		05/03/16 09:31	05/05/16 03:15	10
N-Nitrosodi-n-propylamine	<4.0		4.0	1.2	ug/L		05/03/16 09:31	05/05/16 03:15	10
N-Nitrosodiphenylamine	<8.0		8.0	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,2'-oxybis[1-chloropropane]	<16		16	3.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Pentachlorophenol	<160		160	32	ug/L		05/03/16 09:31	05/05/16 03:15	10
Phenanthrene	<8.0		8.0	2.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Phenol	**31**	**J**	40	5.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Pyrene	<8.0		8.0	3.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4,5-Trichlorophenol	<80		80	21	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4,6-Trichlorophenol	<40		40	5.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzaldehyde	<160	*	160	120	ug/L		05/03/16 09:31	05/05/16 03:15	10
Caprolactam	<80	*	80	12	ug/L		05/03/16 09:31	05/05/16 03:15	10
Atrazine	<40		40	5.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
1,1'-Biphenyl	**19**	**J**	40	2.9	ug/L		05/03/16 09:31	05/05/16 03:15	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*84*		*30 - 123*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
2-Fluorophenol (Surr)	*56*		*30 - 110*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
Phenol-d5 (Surr)	*45*		*20 - 100*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
Terphenyl-d14 (Surr)	*88*		*42 - 150*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
2,4,6-Tribromophenol (Surr)	*127*		*30 - 150*	*05/03/16 09:31*	*05/05/16 03:15*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/29/16 10:36	05/03/16 13:40	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/29/16 10:36	05/03/16 13:40	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/29/16 10:36	05/03/16 13:40	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/29/16 10:36	05/03/16 13:40	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/29/16 10:36	05/03/16 13:40	1

Client Sample ID: MW-11-GW-04282016

Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endrin	<0.040		0.040	0.014	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/29/16 10:36	05/03/16 13:40	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/29/16 10:36	05/03/16 13:40	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		04/29/16 10:36	05/03/16 13:40	1
Heptachlor	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/03/16 13:40	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/29/16 10:36	05/03/16 13:40	1
Methoxychlor	<0.080		0.080	0.023	ug/L		04/29/16 10:36	05/03/16 13:40	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*28*	*X*	*30 - 143*	*04/29/16 10:36*	*05/03/16 13:40*	*1*
Tetrachloro-m-xylene	*54*		*30 - 120*	*04/29/16 10:36*	*05/03/16 13:40*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1260	<0.40		0.40	0.070	ug/L		04/29/16 10:36	05/03/16 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*110*		*30 - 127*	*04/29/16 10:36*	*05/03/16 20:27*	*1*
DCB Decachlorobiphenyl	*66*		*30 - 150*	*04/29/16 10:36*	*05/03/16 20:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.12**	**J ^**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:43	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:43	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:43	1
Barium	**1.1**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:43	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:43	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:43	1
Calcium	**130**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:43	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:43	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:43	1
Copper	**0.0053**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:43	1
Iron	**35**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:43	1
Lead	**0.0073**		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:06	1
Magnesium	**120**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:43	1
Manganese	**0.27**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:43	1
Nickel	**0.017**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:43	1
Potassium	**140**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:43	1

Client Sample ID: MW-11-GW-04282016

Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22

Matrix: Water

Date Received: 04/28/16 16:05

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	**0.0054**	**J ^**	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:43	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:43	1
Sodium	**360**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:43	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:43	1
Vanadium	**0.0053**		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:43	1
Zinc	**0.014**	**J**	0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	^	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:48	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:48	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:48	1
Barium	**1.2**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:48	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:48	1
Calcium	**140**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:48	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:48	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:48	1
Copper	**0.0039**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:48	1
Iron	**36**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:48	1
Lead	**0.0044**	**J**	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:11	1
Magnesium	**120**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:48	1
Manganese	**0.28**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:48	1
Nickel	**0.019**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:48	1
Potassium	**150**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:48	1
Selenium	<0.010	^	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:48	1
Sodium	**380**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:48	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:48	1
Vanadium	**0.0056**		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:48	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:37	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:33	1
Sulfate	**6.5**		5.0	2.0	mg/L			05/06/16 09:15	1
Total Organic Carbon - Duplicates	**91**		4.0	0.92	mg/L			05/08/16 19:05	4
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**85**		9.1	2.9	mg/L			05/03/16 11:36	1
Ammonia	**67**	**B**	5.0	1.1	mg/L		05/09/16 19:05	05/09/16 22:20	25
Nitrogen, Nitrite	**0.020**	**B**	0.020	0.0032	mg/L			04/29/16 14:53	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			05/11/16 14:12	10
Benzene	**450**		5.0	1.5	ug/L			05/11/16 14:12	10
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 14:12	10
Bromoform	<10		10	4.8	ug/L			05/11/16 14:12	10
Bromomethane	<20		20	8.0	ug/L			05/11/16 14:12	10
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 14:12	10
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 14:12	10
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 14:12	10
Chloroethane	<10		10	5.1	ug/L			05/11/16 14:12	10
Chloroform	<10		10	3.7	ug/L			05/11/16 14:12	10
Chloromethane	<10		10	3.2	ug/L			05/11/16 14:12	10
cis-1,2-Dichloroethene	**26**		10	4.1	ug/L			05/11/16 14:12	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			05/11/16 14:12	10
Cyclohexane	<10		10	4.9	ug/L			05/11/16 14:12	10
Dibromochloromethane	<10		10	4.9	ug/L			05/11/16 14:12	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			05/11/16 14:12	10
1,2-Dibromoethane	<10		10	3.9	ug/L			05/11/16 14:12	10
1,2-Dichlorobenzene	**14**		10	3.3	ug/L			05/11/16 14:12	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			05/11/16 14:12	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			05/11/16 14:12	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			05/11/16 14:12	10
1,1-Dichloroethane	**23**		10	4.1	ug/L			05/11/16 14:12	10
1,2-Dichloroethane	<10		10	3.9	ug/L			05/11/16 14:12	10
1,1-Dichloroethene	<10		10	3.9	ug/L			05/11/16 14:12	10
1,2-Dichloropropane	<10		10	4.3	ug/L			05/11/16 14:12	10
Ethylbenzene	**1900**		5.0	1.8	ug/L			05/11/16 14:12	10
2-Hexanone	<50		50	16	ug/L			05/11/16 14:12	10
Isopropylbenzene	**110**		10	3.9	ug/L			05/11/16 14:12	10
Methyl acetate	<50		50	20	ug/L			05/11/16 14:12	10
Methylcyclohexane	<10		10	3.2	ug/L			05/11/16 14:12	10
Methylene Chloride	<50		50	16	ug/L			05/11/16 14:12	10
Methyl Ethyl Ketone	<50		50	21	ug/L			05/11/16 14:12	10
methyl isobutyl ketone	<50		50	22	ug/L			05/11/16 14:12	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			05/11/16 14:12	10
Styrene	**120**		10	3.9	ug/L			05/11/16 14:12	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			05/11/16 14:12	10
Tetrachloroethene	<10		10	3.7	ug/L			05/11/16 14:12	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			05/11/16 14:12	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			05/11/16 14:12	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			05/11/16 14:12	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			05/11/16 14:12	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			05/11/16 14:12	10
Trichloroethene	<5.0		5.0	1.6	ug/L			05/11/16 14:12	10
Trichlorofluoromethane	<10		10	4.3	ug/L			05/11/16 14:12	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			05/11/16 14:12	10
Vinyl chloride	**7.1**		5.0	2.0	ug/L			05/11/16 14:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*05/11/16 14:12*	*10*

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	*86*		*70 - 120*		*05/11/16 14:12*	*10*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*05/11/16 14:12*	*10*
Toluene-d8 (Surr)	*90*		*75 - 120*		*05/11/16 14:12*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**4600**		50	15	ug/L			05/11/16 14:40	100
Xylenes, Total	**14000**		100	22	ug/L			05/11/16 14:40	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*91*		*71 - 120*		*05/11/16 14:40*	*100*
Dibromofluoromethane	*90*		*70 - 120*		*05/11/16 14:40*	*100*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*05/11/16 14:40*	*100*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/11/16 14:40*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.1		8.1	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
Acenaphthylene	**5.1**	**J**	8.1	2.2	ug/L		05/03/16 09:31	05/05/16 03:42	10
Acetophenone	<40		40	5.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Anthracene	<8.1		8.1	2.7	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[a]anthracene	<1.6		1.6	0.46	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[a]pyrene	<1.6		1.6	0.80	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[b]fluoranthene	<1.6		1.6	0.65	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[g,h,i]perylene	<8.1		8.1	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[k]fluoranthene	<1.6		1.6	0.52	ug/L		05/03/16 09:31	05/05/16 03:42	10
Bis(2-chloroethoxy)methane	<16		16	2.3	ug/L		05/03/16 09:31	05/05/16 03:42	10
Bis(2-chloroethyl)ether	<16		16	2.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Bis(2-ethylhexyl) phthalate	<81		81	14	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Bromophenyl phenyl ether	<40		40	4.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Butyl benzyl phthalate	<16		16	3.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
Carbazole	<40		40	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Chloroaniline	<81	^	81	16	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Chloro-3-methylphenol	<81		81	19	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Chloronaphthalene	<16		16	1.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Chlorophenol	<40		40	4.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Chlorophenyl phenyl ether	<40		40	5.1	ug/L		05/03/16 09:31	05/05/16 03:42	10
Chrysene	<4.0		4.0	0.55	ug/L		05/03/16 09:31	05/05/16 03:42	10
Dibenz(a,h)anthracene	<2.4		2.4	0.41	ug/L		05/03/16 09:31	05/05/16 03:42	10
Dibenzofuran	<16		16	2.1	ug/L		05/03/16 09:31	05/05/16 03:42	10
3,3'-Dichlorobenzidine	<40		40	14	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dichlorophenol	<81		81	21	ug/L		05/03/16 09:31	05/05/16 03:42	10
Diethyl phthalate	**31**		16	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dimethylphenol	**40**	**J**	81	15	ug/L		05/03/16 09:31	05/05/16 03:42	10
Dimethyl phthalate	<16		16	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
Di-n-butyl phthalate	<40		40	5.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
4,6-Dinitro-2-methylphenol	<160		160	48	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dinitrophenol	<160	*	160	69	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dinitrotoluene	<8.1		8.1	2.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,6-Dinitrotoluene	<4.0		4.0	0.59	ug/L		05/03/16 09:31	05/05/16 03:42	10

Client Sample ID: DUP-1(04282016)

Lab Sample ID: 500-110872-5

Date Collected: 04/28/16 00:00

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<81	*	81	8.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
Fluoranthene	<8.1		8.1	3.7	ug/L		05/03/16 09:31	05/05/16 03:42	10
Fluorene	<8.1		8.1	2.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachlorobenzene	<4.0		4.0	0.64	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachlorobutadiene	<40		40	4.2	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachlorocyclopentadiene	<160		160	51	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachloroethane	<40		40	4.8	ug/L		05/03/16 09:31	05/05/16 03:42	10
Indeno[1,2,3-cd]pyrene	<1.6		1.6	0.60	ug/L		05/03/16 09:31	05/05/16 03:42	10
Isophorone	<16		16	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Methylnaphthalene	**20**		4.0	0.52	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Methylphenol	**14**	**J**	16	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
3 & 4 Methylphenol	**280**		16	3.6	ug/L		05/03/16 09:31	05/05/16 03:42	10
Naphthalene	**260**		8.1	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Nitroaniline	<40		40	10	ug/L		05/03/16 09:31	05/05/16 03:42	10
3-Nitroaniline	<81		81	14	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Nitroaniline	<81		81	13	ug/L		05/03/16 09:31	05/05/16 03:42	10
Nitrobenzene	<8.1		8.1	3.6	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Nitrophenol	<81		81	20	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Nitrophenol	<160	*	160	60	ug/L		05/03/16 09:31	05/05/16 03:42	10
N-Nitrosodi-n-propylamine	<4.0		4.0	1.2	ug/L		05/03/16 09:31	05/05/16 03:42	10
N-Nitrosodiphenylamine	**15**		8.1	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,2'-oxybis[1-chloropropane]	<16		16	3.1	ug/L		05/03/16 09:31	05/05/16 03:42	10
Pentachlorophenol	<160		160	32	ug/L		05/03/16 09:31	05/05/16 03:42	10
Phenanthrene	<8.1		8.1	2.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Phenol	**84**		40	5.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Pyrene	<8.1		8.1	3.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4,5-Trichlorophenol	<81		81	21	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4,6-Trichlorophenol	<40		40	5.8	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzaldehyde	<160	*	160	120	ug/L		05/03/16 09:31	05/05/16 03:42	10
Caprolactam	<81	*	81	12	ug/L		05/03/16 09:31	05/05/16 03:42	10
Atrazine	<40		40	5.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
1,1'-Biphenyl	**3.2**	**J**	40	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*83*		*30 - 123*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
Phenol-d5 (Surr)	*52*		*20 - 100*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
2,4,6-Tribromophenol (Surr)	*139*		*30 - 150*	*05/03/16 09:31*	*05/05/16 03:42*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.20		0.20	0.027	ug/L		04/29/16 10:36	05/03/16 13:59	5
alpha-BHC	<0.20		0.20	0.013	ug/L		04/29/16 10:36	05/03/16 13:59	5
alpha-Chlordane	<0.20		0.20	0.022	ug/L		04/29/16 10:36	05/03/16 13:59	5
beta-BHC	<0.20		0.20	0.051	ug/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDD	<0.20		0.20	0.067	ug/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDE	<0.20		0.20	0.019	ug/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDT	<0.20		0.20	0.016	ug/L		04/29/16 10:36	05/03/16 13:59	5

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5
Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.20		0.20	0.052	ug/L		04/29/16 10:36	05/03/16 13:59	5
Dieldrin	<0.20		0.20	0.065	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endosulfan I	<0.20		0.20	0.021	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endosulfan II	<0.20		0.20	0.014	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endosulfan sulfate	<0.20		0.20	0.059	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endrin	<0.20		0.20	0.071	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endrin aldehyde	<0.20		0.20	0.041	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endrin ketone	<0.20		0.20	0.086	ug/L		04/29/16 10:36	05/03/16 13:59	5
gamma-BHC (Lindane)	<0.20		0.20	0.028	ug/L		04/29/16 10:36	05/03/16 13:59	5
gamma-Chlordane	<0.20		0.20	0.036	ug/L		04/29/16 10:36	05/03/16 13:59	5
Heptachlor	<0.20		0.20	0.068	ug/L		04/29/16 10:36	05/03/16 13:59	5
Heptachlor epoxide	<0.20		0.20	0.069	ug/L		04/29/16 10:36	05/03/16 13:59	5
Methoxychlor	<0.40		0.40	0.12	ug/L		04/29/16 10:36	05/03/16 13:59	5
Toxaphene	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/03/16 13:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*11*	*X*	*30 - 143*	*04/29/16 10:36*	*05/03/16 13:59*	*5*
Tetrachloro-m-xylene	*414*	*X*	*30 - 120*	*04/29/16 10:36*	*05/03/16 13:59*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<2.0		2.0	0.34	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1221	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1232	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1242	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1248	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1254	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1260	<2.0		2.0	0.35	ug/L		04/29/16 10:36	05/04/16 11:00	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*89*		*30 - 127*	*04/29/16 10:36*	*05/04/16 11:00*	*5*
DCB Decachlorobiphenyl	*48*		*30 - 150*	*04/29/16 10:36*	*05/04/16 11:00*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.066**	**J ^**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:53	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:53	1
Arsenic	**0.0075**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:53	1
Barium	**0.25**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:53	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:53	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:53	1
Calcium	**120**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:53	1
Chromium	**0.0045**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:53	1
Cobalt	**0.0026**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:53	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:53	1
Iron	**7.3**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:53	1
Lead	**0.0029**	**J**	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:16	1
Magnesium	**43**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:53	1
Manganese	**0.35**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:53	1
Nickel	**0.011**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:53	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	68		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:53	1
Selenium	0.0059	J ^	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:53	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:53	1
Sodium	240		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:53	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:53	1
Vanadium	0.0039	J	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:53	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	^	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:58	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:58	1
Arsenic	0.0085	J	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:58	1
Barium	0.25		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:58	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:58	1
Calcium	110		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:58	1
Chromium	0.0045	J	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:58	1
Cobalt	0.0025	J	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:58	1
Copper	<0.010		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:58	1
Iron	7.5		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:58	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:22	1
Magnesium	46		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:58	1
Manganese	0.37		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:58	1
Nickel	0.011		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:58	1
Potassium	71		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:58	1
Selenium	0.0077	J ^	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:58	1
Sodium	240		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:58	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:58	1
Vanadium	0.0036	J	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:58	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	1.7		1.0	0.22	mg/L			05/03/16 05:35	1
Sulfate	150		50	20	mg/L			05/06/16 09:16	10
Total Organic Carbon - Duplicates	56		2.0	0.46	mg/L			05/10/16 00:36	2
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	26		5.0	1.6	mg/L			05/03/16 11:37	1
Ammonia	52	B	5.0	1.1	mg/L		05/09/16 19:05	05/09/16 22:23	25
Nitrogen, Nitrite	0.010	J B	0.020	0.0032	mg/L			04/29/16 14:53	1

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016)
Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:28	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
E	Result exceeded calibration range.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

GC/MS VOA

Analysis Batch: 334912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	8260B	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	8260B	
500-110872-2 - DL	MW-13-GW-04282016	Total/NA	Water	8260B	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	8260B	
500-110872-3 - DL	MW-12-GW-04282016	Total/NA	Water	8260B	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	8260B	
500-110872-4 - DL	MW-11-GW-04282016	Total/NA	Water	8260B	
500-110872-5	DUP-1(04282016)	Total/NA	Water	8260B	
500-110872-5 - DL	DUP-1(04282016)	Total/NA	Water	8260B	
LCS 500-334912/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-334912/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 335116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-3 - DL	MW-12-GW-04282016	Total/NA	Water	8260B	
LCS 500-335116/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-335116/6	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 333741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	3510C	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	3510C	
500-110872-3 - DL	MW-12-GW-04282016	Total/NA	Water	3510C	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	3510C	
500-110872-3 - DL2	MW-12-GW-04282016	Total/NA	Water	3510C	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	3510C	
500-110872-5	DUP-1(04282016)	Total/NA	Water	3510C	
LCS 500-333741/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-333741/3-A - DL	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-333741/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 500-333741/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 334017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-4	MW-11-GW-04282016	Total/NA	Water	8270D	333741
500-110872-5	DUP-1(04282016)	Total/NA	Water	8270D	333741
MB 500-333741/1-A	Method Blank	Total/NA	Water	8270D	333741

Analysis Batch: 334204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	8270D	333741
500-110872-2	MW-13-GW-04282016	Total/NA	Water	8270D	333741
500-110872-3	MW-12-GW-04282016	Total/NA	Water	8270D	333741

Analysis Batch: 334389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-3 - DL	MW-12-GW-04282016	Total/NA	Water	8270D	333741
500-110872-3 - DL2	MW-12-GW-04282016	Total/NA	Water	8270D	333741

GC/MS Semi VOA (Continued)

Analysis Batch: 334842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-333741/2-A	Lab Control Sample	Total/NA	Water	8270D	333741
LCSD 500-333741/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	333741
LCSD 500-333741/3-A - DL	Lab Control Sample Dup	Total/NA	Water	8270D	333741

GC Semi VOA

Prep Batch: 333314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	3510C	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	3510C	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	3510C	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	3510C	
500-110872-5	DUP-1(04282016)	Total/NA	Water	3510C	
LCS 500-333314/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-333314/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-333314/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-333314/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 500-333314/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 333560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-333314/4-A	Lab Control Sample	Total/NA	Water	8082A	333314
LCSD 500-333314/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	333314
MB 500-333314/1-A	Method Blank	Total/NA	Water	8082A	333314

Analysis Batch: 333580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-333314/2-A	Lab Control Sample	Total/NA	Water	8081B	333314
LCSD 500-333314/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	333314
MB 500-333314/1-A	Method Blank	Total/NA	Water	8081B	333314

Analysis Batch: 333747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	8081B	333314
500-110872-2	MW-13-GW-04282016	Total/NA	Water	8081B	333314
500-110872-3	MW-12-GW-04282016	Total/NA	Water	8081B	333314
500-110872-4	MW-11-GW-04282016	Total/NA	Water	8081B	333314
500-110872-5	DUP-1(04282016)	Total/NA	Water	8081B	333314

Analysis Batch: 333763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	8082A	333314
500-110872-4	MW-11-GW-04282016	Total/NA	Water	8082A	333314

Analysis Batch: 333898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-2	MW-13-GW-04282016	Total/NA	Water	8082A	333314
500-110872-3	MW-12-GW-04282016	Total/NA	Water	8082A	333314
500-110872-5	DUP-1(04282016)	Total/NA	Water	8082A	333314

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Metals

Prep Batch: 333277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Dissolved	Water	3010A	
500-110872-1	MW-1-GW-04282016	Total/NA	Water	3010A	
500-110872-2	MW-13-GW-04282016	Dissolved	Water	3010A	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	3010A	
500-110872-3	MW-12-GW-04282016	Dissolved	Water	3010A	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	3010A	
500-110872-4	MW-11-GW-04282016	Dissolved	Water	3010A	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	3010A	
500-110872-5	DUP-1(04282016)	Dissolved	Water	3010A	
500-110872-5	DUP-1(04282016)	Total/NA	Water	3010A	
LCS 500-333277/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 500-333277/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 333507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Dissolved	Water	6010C	333277
500-110872-1	MW-1-GW-04282016	Total/NA	Water	6010C	333277
500-110872-2	MW-13-GW-04282016	Dissolved	Water	6010C	333277
500-110872-2	MW-13-GW-04282016	Total/NA	Water	6010C	333277
500-110872-3	MW-12-GW-04282016	Dissolved	Water	6010C	333277
500-110872-3	MW-12-GW-04282016	Total/NA	Water	6010C	333277
500-110872-4	MW-11-GW-04282016	Dissolved	Water	6010C	333277
500-110872-4	MW-11-GW-04282016	Total/NA	Water	6010C	333277
500-110872-5	DUP-1(04282016)	Dissolved	Water	6010C	333277
500-110872-5	DUP-1(04282016)	Total/NA	Water	6010C	333277
LCS 500-333277/2-A	Lab Control Sample	Total/NA	Water	6010C	333277
MB 500-333277/1-A	Method Blank	Total/NA	Water	6010C	333277

Prep Batch: 333606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Dissolved	Water	7470A	
500-110872-1	MW-1-GW-04282016	Total/NA	Water	7470A	
500-110872-1 DU	MW-1-GW-04282016	Total/NA	Water	7470A	
500-110872-1 MS	MW-1-GW-04282016	Total/NA	Water	7470A	
500-110872-1 MSD	MW-1-GW-04282016	Total/NA	Water	7470A	
500-110872-2	MW-13-GW-04282016	Dissolved	Water	7470A	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	7470A	
500-110872-3	MW-12-GW-04282016	Dissolved	Water	7470A	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	7470A	
500-110872-4	MW-11-GW-04282016	Dissolved	Water	7470A	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	7470A	
500-110872-5	DUP-1(04282016)	Dissolved	Water	7470A	
500-110872-5	DUP-1(04282016)	Total/NA	Water	7470A	
LCS 500-333606/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-333606/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 333725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Dissolved	Water	6010C	333277
500-110872-1	MW-1-GW-04282016	Total/NA	Water	6010C	333277
500-110872-3	MW-12-GW-04282016	Dissolved	Water	6010C	333277

Metals (Continued)

Analysis Batch: 333725 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-3	MW-12-GW-04282016	Total/NA	Water	6010C	333277

Analysis Batch: 333883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Dissolved	Water	6010C	333277
500-110872-1	MW-1-GW-04282016	Total/NA	Water	6010C	333277
500-110872-2	MW-13-GW-04282016	Dissolved	Water	6010C	333277
500-110872-2	MW-13-GW-04282016	Total/NA	Water	6010C	333277
500-110872-3	MW-12-GW-04282016	Dissolved	Water	6010C	333277
500-110872-3	MW-12-GW-04282016	Total/NA	Water	6010C	333277
500-110872-4	MW-11-GW-04282016	Dissolved	Water	6010C	333277
500-110872-4	MW-11-GW-04282016	Total/NA	Water	6010C	333277
500-110872-5	DUP-1(04282016)	Dissolved	Water	6010C	333277
500-110872-5	DUP-1(04282016)	Total/NA	Water	6010C	333277
LCS 500-333277/2-A	Lab Control Sample	Total/NA	Water	6010C	333277
MB 500-333277/1-A	Method Blank	Total/NA	Water	6010C	333277

Analysis Batch: 334038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Dissolved	Water	7470A	333606
500-110872-1	MW-1-GW-04282016	Total/NA	Water	7470A	333606
500-110872-1 DU	MW-1-GW-04282016	Total/NA	Water	7470A	333606
500-110872-1 MS	MW-1-GW-04282016	Total/NA	Water	7470A	333606
500-110872-1 MSD	MW-1-GW-04282016	Total/NA	Water	7470A	333606
500-110872-2	MW-13-GW-04282016	Dissolved	Water	7470A	333606
500-110872-2	MW-13-GW-04282016	Total/NA	Water	7470A	333606
500-110872-3	MW-12-GW-04282016	Dissolved	Water	7470A	333606
500-110872-3	MW-12-GW-04282016	Total/NA	Water	7470A	333606
500-110872-4	MW-11-GW-04282016	Dissolved	Water	7470A	333606
500-110872-4	MW-11-GW-04282016	Total/NA	Water	7470A	333606
500-110872-5	DUP-1(04282016)	Dissolved	Water	7470A	333606
500-110872-5	DUP-1(04282016)	Total/NA	Water	7470A	333606
LCS 500-333606/13-A	Lab Control Sample	Total/NA	Water	7470A	333606
MB 500-333606/12-A	Method Blank	Total/NA	Water	7470A	333606

General Chemistry

Analysis Batch: 333669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	SM 4500 NO3 F	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	SM 4500 NO3 F	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	SM 4500 NO3 F	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	SM 4500 NO3 F	
500-110872-5	DUP-1(04282016)	Total/NA	Water	SM 4500 NO3 F	
LCS 500-333669/4	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	
MB 500-333669/3	Method Blank	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 333690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	9034	

General Chemistry (Continued)

Analysis Batch: 333690 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-2	MW-13-GW-04282016	Total/NA	Water	9034	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	9034	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	9034	
500-110872-5	DUP-1(04282016)	Total/NA	Water	9034	
LCS 500-333690/2	Lab Control Sample	Total/NA	Water	9034	
MB 500-333690/1	Method Blank	Total/NA	Water	9034	

Analysis Batch: 333707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	SM 4500 NO2 B	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	SM 4500 NO2 B	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	SM 4500 NO2 B	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	SM 4500 NO2 B	
500-110872-5	DUP-1(04282016)	Total/NA	Water	SM 4500 NO2 B	
LCS 500-333707/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	
MB 500-333707/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 333768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	SM 2540D	
500-110872-1 DU	MW-1-GW-04282016	Total/NA	Water	SM 2540D	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	SM 2540D	
500-110872-2 DU	MW-13-GW-04282016	Total/NA	Water	SM 2540D	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	SM 2540D	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	SM 2540D	
500-110872-5	DUP-1(04282016)	Total/NA	Water	SM 2540D	
LCS 500-333768/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 500-333768/1	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 333786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	Nitrate by calc	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	Nitrate by calc	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	Nitrate by calc	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	Nitrate by calc	
500-110872-5	DUP-1(04282016)	Total/NA	Water	Nitrate by calc	

Analysis Batch: 334308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	9038	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	9038	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	9038	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	9038	
500-110872-5	DUP-1(04282016)	Total/NA	Water	9038	
LCS 500-334308/4	Lab Control Sample	Total/NA	Water	9038	
MB 500-334308/3	Method Blank	Total/NA	Water	9038	

Analysis Batch: 334591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	9060A	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	9060A	

General Chemistry (Continued)

Analysis Batch: 334591 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-3	MW-12-GW-04282016	Total/NA	Water	9060A	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	9060A	
LCS 500-334591/4	Lab Control Sample	Total/NA	Water	9060A	
MB 500-334591/3	Method Blank	Total/NA	Water	9060A	

Prep Batch: 334645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	SM 4500 NH3 B	
500-110872-1 MS	MW-1-GW-04282016	Total/NA	Water	SM 4500 NH3 B	
500-110872-1 MSD	MW-1-GW-04282016	Total/NA	Water	SM 4500 NH3 B	
500-110872-2	MW-13-GW-04282016	Total/NA	Water	SM 4500 NH3 B	
500-110872-3	MW-12-GW-04282016	Total/NA	Water	SM 4500 NH3 B	
500-110872-4	MW-11-GW-04282016	Total/NA	Water	SM 4500 NH3 B	
500-110872-5	DUP-1(04282016)	Total/NA	Water	SM 4500 NH3 B	
LCS 500-334645/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-334645/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 334656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-1	MW-1-GW-04282016	Total/NA	Water	SM 4500 NH3 G	334645
500-110872-1 MS	MW-1-GW-04282016	Total/NA	Water	SM 4500 NH3 G	334645
500-110872-1 MSD	MW-1-GW-04282016	Total/NA	Water	SM 4500 NH3 G	334645
500-110872-2	MW-13-GW-04282016	Total/NA	Water	SM 4500 NH3 G	334645
500-110872-3	MW-12-GW-04282016	Total/NA	Water	SM 4500 NH3 G	334645
500-110872-4	MW-11-GW-04282016	Total/NA	Water	SM 4500 NH3 G	334645
500-110872-5	DUP-1(04282016)	Total/NA	Water	SM 4500 NH3 G	334645
LCS 500-334645/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	334645
MB 500-334645/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	334645

Analysis Batch: 334832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110872-5	DUP-1(04282016)	Total/NA	Water	9060A	
LCS 500-334832/5	Lab Control Sample	Total/NA	Water	9060A	
MB 500-334832/4	Method Blank	Total/NA	Water	9060A	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-110872-1	MW-1-GW-04282016	85	39 X	103	79
500-110872-2 - DL	MW-13-GW-04282016	92	91	103	93
500-110872-2	MW-13-GW-04282016	96	86	100	89
500-110872-3	MW-12-GW-04282016	93	86	97	92
500-110872-3 - DL	MW-12-GW-04282016	84	89	103	100
500-110872-3 - DL	MW-12-GW-04282016	90	90	105	94
500-110872-4	MW-11-GW-04282016	88	85	100	89
500-110872-4 - DL	MW-11-GW-04282016	94	88	103	91
500-110872-5	DUP-1(04282016)	95	86	99	90
500-110872-5 - DL	DUP-1(04282016)	91	90	100	94
LCS 500-334912/4	Lab Control Sample	103	79	90	89
LCS 500-335116/4	Lab Control Sample	93	84	97	88
MB 500-334912/6	Method Blank	89	91	104	92
MB 500-335116/6	Method Blank	87	90	102	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-110872-1	MW-1-GW-04282016	60	47	59	42	96	114
500-110872-2	MW-13-GW-04282016	92	55	84	50	109	128
500-110872-3	MW-12-GW-04282016	0 D	0 D	0 D	0 D	0 D	0 D
500-110872-3 - DL	MW-12-GW-04282016	0 D	0 D	0 D	0 D	0 D	0 D
500-110872-3 - DL2	MW-12-GW-04282016	0 D	0 D	0 D	0 D	0 D	0 D
500-110872-4	MW-11-GW-04282016	84	56	72	45	88	127
500-110872-5	DUP-1(04282016)	83	58	72	52	102	139
LCS 500-333741/2-A	Lab Control Sample	73	59	78	50	93	100
LCSD 500-333741/3-A	Lab Control Sample Dup	76	60	82	50	92	103
LCSD 500-333741/3-A - DL	Lab Control Sample Dup	89	59	92	56	108	113
MB 500-333741/1-A	Method Blank	78	61	73	49	92	106

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-110872-1	MW-1-GW-04282016	63	96
500-110872-2	MW-13-GW-04282016	34	622 X
500-110872-3	MW-12-GW-04282016	27 X	79
500-110872-4	MW-11-GW-04282016	28 X	54
500-110872-5	DUP-1(04282016)	11 X	414 X
LCS 500-333314/2-A	Lab Control Sample	89	69
LCSD 500-333314/3-A	Lab Control Sample Dup	91	74
MB 500-333314/1-A	Method Blank	66	67

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-150)
500-110872-1	MW-1-GW-04282016	58	57
500-110872-2	MW-13-GW-04282016	71	39
500-110872-3	MW-12-GW-04282016	53	29 X
500-110872-4	MW-11-GW-04282016	110	66
500-110872-5	DUP-1(04282016)	89	48
LCS 500-333314/4-A	Lab Control Sample	69	93
LCSD 500-333314/5-A	Lab Control Sample Dup	77	109
MB 500-333314/1-A	Method Blank	82	105

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-334912/6
Matrix: Water
Analysis Batch: 334912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/11/16 10:01	1
Benzene	<0.50		0.50	0.15	ug/L			05/11/16 10:01	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/11/16 10:01	1
Bromoform	<1.0		1.0	0.48	ug/L			05/11/16 10:01	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/11/16 10:01	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/11/16 10:01	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/11/16 10:01	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/11/16 10:01	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/11/16 10:01	1
Chloroform	<1.0		1.0	0.37	ug/L			05/11/16 10:01	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/11/16 10:01	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/11/16 10:01	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/11/16 10:01	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/11/16 10:01	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/11/16 10:01	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/11/16 10:01	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/11/16 10:01	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/11/16 10:01	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/11/16 10:01	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/11/16 10:01	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/11/16 10:01	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/11/16 10:01	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/11/16 10:01	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/11/16 10:01	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/11/16 10:01	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/11/16 10:01	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/11/16 10:01	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/11/16 10:01	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/11/16 10:01	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/11/16 10:01	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/11/16 10:01	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/11/16 10:01	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/11/16 10:01	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/11/16 10:01	1
Styrene	<1.0		1.0	0.39	ug/L			05/11/16 10:01	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/11/16 10:01	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/11/16 10:01	1
Toluene	<0.50		0.50	0.15	ug/L			05/11/16 10:01	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/11/16 10:01	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/11/16 10:01	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/11/16 10:01	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/11/16 10:01	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/11/16 10:01	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/11/16 10:01	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/11/16 10:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/11/16 10:01	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/11/16 10:01	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			05/11/16 10:01	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		71 - 120		05/11/16 10:01	1
Dibromofluoromethane	91		70 - 120		05/11/16 10:01	1
1,2-Dichloroethane-d4 (Surr)	104		71 - 127		05/11/16 10:01	1
Toluene-d8 (Surr)	92		75 - 120		05/11/16 10:01	1

Lab Sample ID: LCS 500-334912/4
Matrix: Water
Analysis Batch: 334912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.6		ug/L		79	37 - 141
Benzene	50.0	42.3		ug/L		85	70 - 125
Bromodichloromethane	50.0	44.1		ug/L		88	70 - 125
Bromoform	50.0	50.7		ug/L		101	54 - 128
Bromomethane	50.0	30.1		ug/L		60	40 - 150
Carbon disulfide	50.0	35.6		ug/L		71	68 - 125
Carbon tetrachloride	50.0	39.9		ug/L		80	70 - 125
Chlorobenzene	50.0	46.4		ug/L		93	70 - 125
Chloroethane	50.0	43.9		ug/L		88	60 - 139
Chloroform	50.0	39.8		ug/L		80	70 - 125
Chloromethane	50.0	47.5		ug/L		95	60 - 140
cis-1,2-Dichloroethene	50.0	40.6		ug/L		81	70 - 125
cis-1,3-Dichloropropene	50.0	37.6		ug/L		75	70 - 125
Cyclohexane	50.0	46.2		ug/L		92	56 - 149
Dibromochloromethane	50.0	46.2		ug/L		92	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	48.1		ug/L		96	51 - 125
1,2-Dibromoethane	50.0	45.6		ug/L		91	70 - 125
1,2-Dichlorobenzene	50.0	46.3		ug/L		93	70 - 125
1,3-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 125
1,4-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 125
Dichlorodifluoromethane	50.0	39.8		ug/L		80	51 - 140
1,1-Dichloroethane	50.0	43.4		ug/L		87	70 - 125
1,2-Dichloroethane	50.0	46.3		ug/L		93	70 - 125
1,1-Dichloroethene	50.0	38.3		ug/L		77	70 - 125
1,2-Dichloropropane	50.0	50.5		ug/L		101	70 - 125
Ethylbenzene	50.0	45.4		ug/L		91	70 - 125
2-Hexanone	50.0	47.8		ug/L		96	49 - 139
Isopropylbenzene	50.0	44.6		ug/L		89	70 - 125
Methyl acetate	250	195		ug/L		78	60 - 148
Methylcyclohexane	50.0	43.2		ug/L		86	70 - 127
Methylene Chloride	50.0	38.1		ug/L		76	68 - 125
Methyl Ethyl Ketone	50.0	50.5		ug/L		101	52 - 142
methyl isobutyl ketone	50.0	40.6		ug/L		81	47 - 140
Methyl tert-butyl ether	50.0	35.7		ug/L		71	67 - 125
Styrene	50.0	47.0		ug/L		94	70 - 125
1,1,2,2-Tetrachloroethane	50.0	45.4		ug/L		91	68 - 125
Tetrachloroethene	50.0	48.2		ug/L		96	70 - 125
Toluene	50.0	43.8		ug/L		88	70 - 125
trans-1,2-Dichloroethene	50.0	40.7		ug/L		81	70 - 125
trans-1,3-Dichloropropene	50.0	45.7		ug/L		91	70 - 125
1,2,4-Trichlorobenzene	50.0	43.8		ug/L		88	64 - 126
1,1,1-Trichloroethane	50.0	38.9		ug/L		78	70 - 125
1,1,2-Trichloroethane	50.0	49.9		ug/L		100	70 - 125
Trichloroethene	50.0	39.8		ug/L		80	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-334912/4
Matrix: Water
Analysis Batch: 334912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	41.7		ug/L		83	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	38.6		ug/L		77	57 - 141
Vinyl chloride	50.0	42.3		ug/L		85	70 - 126
Xylenes, Total	100	91.7		ug/L		92	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*
Dibromofluoromethane	*79*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*
Toluene-d8 (Surr)	*89*		*75 - 120*

Lab Sample ID: MB 500-335116/6
Matrix: Water
Analysis Batch: 335116

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 12:03	1
Benzene	<0.50		0.50	0.15	ug/L			05/12/16 12:03	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 12:03	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 12:03	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 12:03	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 12:03	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 12:03	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 12:03	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 12:03	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 12:03	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 12:03	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 12:03	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 12:03	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 12:03	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 12:03	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 12:03	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 12:03	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 12:03	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 12:03	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/12/16 12:03	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 12:03	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 12:03	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 12:03	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 12:03	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 12:03	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/12/16 12:03	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 12:03	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/12/16 12:03	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 12:03	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 12:03	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 12:03	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-335116/6
Matrix: Water
Analysis Batch: 335116

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/12/16 12:03	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/12/16 12:03	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 12:03	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 12:03	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 12:03	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 12:03	1
Toluene	<0.50		0.50	0.15	ug/L			05/12/16 12:03	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 12:03	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 12:03	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 12:03	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 12:03	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 12:03	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 12:03	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 12:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 12:03	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 12:03	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			05/12/16 12:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*71 - 120*		*05/12/16 12:03*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*05/12/16 12:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*71 - 127*		*05/12/16 12:03*	*1*
Toluene-d8 (Surr)	*91*		*75 - 120*		*05/12/16 12:03*	*1*

Lab Sample ID: LCS 500-335116/4
Matrix: Water
Analysis Batch: 335116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	44.3		ug/L		89	37 - 141
Benzene	50.0	48.2		ug/L		96	70 - 125
Bromodichloromethane	50.0	48.5		ug/L		97	70 - 125
Bromoform	50.0	51.3		ug/L		103	54 - 128
Bromomethane	50.0	27.9		ug/L		56	40 - 150
Carbon disulfide	50.0	43.9		ug/L		88	68 - 125
Carbon tetrachloride	50.0	43.9		ug/L		88	70 - 125
Chlorobenzene	50.0	50.7		ug/L		101	70 - 125
Chloroethane	50.0	49.3		ug/L		99	60 - 139
Chloroform	50.0	46.6		ug/L		93	70 - 125
Chloromethane	50.0	52.8		ug/L		106	60 - 140
cis-1,2-Dichloroethene	50.0	48.6		ug/L		97	70 - 125
cis-1,3-Dichloropropene	50.0	46.5		ug/L		93	70 - 125
Cyclohexane	50.0	54.1		ug/L		108	56 - 149
Dibromochloromethane	50.0	50.4		ug/L		101	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	47.3		ug/L		95	51 - 125
1,2-Dibromoethane	50.0	51.4		ug/L		103	70 - 125
1,2-Dichlorobenzene	50.0	49.8		ug/L		100	70 - 125
1,3-Dichlorobenzene	50.0	48.4		ug/L		97	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-335116/4
Matrix: Water
Analysis Batch: 335116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	48.8		ug/L		98	70 - 125
Dichlorodifluoromethane	50.0	40.9		ug/L		82	51 - 140
1,1-Dichloroethane	50.0	52.4		ug/L		105	70 - 125
1,2-Dichloroethane	50.0	52.8		ug/L		106	70 - 125
1,1-Dichloroethene	50.0	45.7		ug/L		91	70 - 125
1,2-Dichloropropane	50.0	55.8		ug/L		112	70 - 125
Ethylbenzene	50.0	48.6		ug/L		97	70 - 125
2-Hexanone	50.0	48.8		ug/L		98	49 - 139
Isopropylbenzene	50.0	51.2		ug/L		102	70 - 125
Methyl acetate	250	248		ug/L		99	60 - 148
Methylcyclohexane	50.0	46.8		ug/L		94	70 - 127
Methylene Chloride	50.0	46.7		ug/L		93	68 - 125
Methyl Ethyl Ketone	50.0	55.2		ug/L		110	52 - 142
methyl isobutyl ketone	50.0	43.9		ug/L		88	47 - 140
Methyl tert-butyl ether	50.0	41.8		ug/L		84	67 - 125
Styrene	50.0	49.4		ug/L		99	70 - 125
1,1,2,2-Tetrachloroethane	50.0	53.8		ug/L		108	68 - 125
Tetrachloroethene	50.0	47.7		ug/L		95	70 - 125
Toluene	50.0	46.6		ug/L		93	70 - 125
trans-1,2-Dichloroethene	50.0	47.7		ug/L		95	70 - 125
trans-1,3-Dichloropropene	50.0	50.2		ug/L		100	70 - 125
1,2,4-Trichlorobenzene	50.0	45.4		ug/L		91	64 - 126
1,1,1-Trichloroethane	50.0	44.0		ug/L		88	70 - 125
1,1,2-Trichloroethane	50.0	54.9		ug/L		110	70 - 125
Trichloroethene	50.0	43.7		ug/L		87	70 - 125
Trichlorofluoromethane	50.0	42.8		ug/L		86	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	46.0		ug/L		92	57 - 141
Vinyl chloride	50.0	38.0		ug/L		76	70 - 126
Xylenes, Total	100	98.2		ug/L		98	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*84*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*
Toluene-d8 (Surr)	*88*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-333741/1-A
Matrix: Water
Analysis Batch: 334017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333741

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		05/03/16 09:31	05/04/16 20:26	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		05/03/16 09:31	05/04/16 20:26	1
Acetophenone	<4.0		4.0	0.53	ug/L		05/03/16 09:31	05/04/16 20:26	1
Anthracene	<0.80		0.80	0.27	ug/L		05/03/16 09:31	05/04/16 20:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-333741/1-A
Matrix: Water
Analysis Batch: 334017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333741

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		05/03/16 09:31	05/04/16 20:26	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		05/03/16 09:31	05/04/16 20:26	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		05/03/16 09:31	05/04/16 20:26	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		05/03/16 09:31	05/04/16 20:26	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		05/03/16 09:31	05/04/16 20:26	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		05/03/16 09:31	05/04/16 20:26	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		05/03/16 09:31	05/04/16 20:26	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		05/03/16 09:31	05/04/16 20:26	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		05/03/16 09:31	05/04/16 20:26	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		05/03/16 09:31	05/04/16 20:26	1
Carbazole	<4.0		4.0	0.28	ug/L		05/03/16 09:31	05/04/16 20:26	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		05/03/16 09:31	05/04/16 20:26	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		05/03/16 09:31	05/04/16 20:26	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		05/03/16 09:31	05/04/16 20:26	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		05/03/16 09:31	05/04/16 20:26	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		05/03/16 09:31	05/04/16 20:26	1
Chrysene	<0.40		0.40	0.055	ug/L		05/03/16 09:31	05/04/16 20:26	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		05/03/16 09:31	05/04/16 20:26	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		05/03/16 09:31	05/04/16 20:26	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		05/03/16 09:31	05/04/16 20:26	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		05/03/16 09:31	05/04/16 20:26	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		05/03/16 09:31	05/04/16 20:26	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		05/03/16 09:31	05/04/16 20:26	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,6-Dinitrotoluene	<0.40		0.40	0.059	ug/L		05/03/16 09:31	05/04/16 20:26	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		05/03/16 09:31	05/04/16 20:26	1
Fluoranthene	<0.80		0.80	0.36	ug/L		05/03/16 09:31	05/04/16 20:26	1
Fluorene	<0.80		0.80	0.20	ug/L		05/03/16 09:31	05/04/16 20:26	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		05/03/16 09:31	05/04/16 20:26	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		05/03/16 09:31	05/04/16 20:26	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		05/03/16 09:31	05/04/16 20:26	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		05/03/16 09:31	05/04/16 20:26	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		05/03/16 09:31	05/04/16 20:26	1
Isophorone	<1.6		1.6	0.30	ug/L		05/03/16 09:31	05/04/16 20:26	1
2-Methylnaphthalene	<0.40		0.40	0.052	ug/L		05/03/16 09:31	05/04/16 20:26	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		05/03/16 09:31	05/04/16 20:26	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		05/03/16 09:31	05/04/16 20:26	1
Naphthalene	<0.80		0.80	0.25	ug/L		05/03/16 09:31	05/04/16 20:26	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		05/03/16 09:31	05/04/16 20:26	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		05/03/16 09:31	05/04/16 20:26	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		05/03/16 09:31	05/04/16 20:26	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		05/03/16 09:31	05/04/16 20:26	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		05/03/16 09:31	05/04/16 20:26	1
4-Nitrophenol	<16		16	5.9	ug/L		05/03/16 09:31	05/04/16 20:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-333741/1-A
Matrix: Water
Analysis Batch: 334017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333741

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		05/03/16 09:31	05/04/16 20:26	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		05/03/16 09:31	05/04/16 20:26	1
Pentachlorophenol	<16		16	3.2	ug/L		05/03/16 09:31	05/04/16 20:26	1
Phenanthrene	<0.80		0.80	0.24	ug/L		05/03/16 09:31	05/04/16 20:26	1
Phenol	<4.0		4.0	0.54	ug/L		05/03/16 09:31	05/04/16 20:26	1
Pyrene	<0.80		0.80	0.34	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		05/03/16 09:31	05/04/16 20:26	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		05/03/16 09:31	05/04/16 20:26	1
Benzaldehyde	<16		16	12	ug/L		05/03/16 09:31	05/04/16 20:26	1
Caprolactam	<8.0		8.0	1.2	ug/L		05/03/16 09:31	05/04/16 20:26	1
Atrazine	<4.0		4.0	0.50	ug/L		05/03/16 09:31	05/04/16 20:26	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		05/03/16 09:31	05/04/16 20:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*30 - 123*	*05/03/16 09:31*	*05/04/16 20:26*	*1*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*05/03/16 09:31*	*05/04/16 20:26*	*1*
Nitrobenzene-d5 (Surr)	*73*		*33 - 139*	*05/03/16 09:31*	*05/04/16 20:26*	*1*
Phenol-d5 (Surr)	*49*		*20 - 100*	*05/03/16 09:31*	*05/04/16 20:26*	*1*
Terphenyl-d14 (Surr)	*92*		*42 - 150*	*05/03/16 09:31*	*05/04/16 20:26*	*1*
2,4,6-Tribromophenol (Surr)	*106*		*30 - 150*	*05/03/16 09:31*	*05/04/16 20:26*	*1*

Lab Sample ID: LCS 500-333741/2-A
Matrix: Water
Analysis Batch: 334842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333741

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	21.8		ug/L		68	41 - 112
Acenaphthylene	32.0	23.1		ug/L		72	48 - 110
Acetophenone	32.0	24.6		ug/L		77	54 - 116
Anthracene	32.0	24.2		ug/L		76	65 - 118
Benzo[a]anthracene	32.0	28.7		ug/L		90	69 - 121
Benzo[a]pyrene	32.0	28.3		ug/L		88	69 - 130
Benzo[b]fluoranthene	32.0	30.7		ug/L		96	66 - 133
Benzo[g,h,i]perylene	32.0	29.4		ug/L		92	47 - 145
Benzo[k]fluoranthene	32.0	26.8		ug/L		84	64 - 134
Bis(2-chloroethoxy)methane	32.0	24.5		ug/L		77	55 - 115
Bis(2-chloroethyl)ether	32.0	21.4		ug/L		67	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	27.5		ug/L		86	60 - 132
4-Bromophenyl phenyl ether	32.0	27.6		ug/L		86	60 - 124
Butyl benzyl phthalate	32.0	27.6		ug/L		86	63 - 127
Carbazole	32.0	28.2		ug/L		88	71 - 132
4-Chloroaniline	32.0	26.5		ug/L		83	15 - 125
4-Chloro-3-methylphenol	32.0	26.4		ug/L		83	63 - 120
2-Chloronaphthalene	32.0	20.7		ug/L		65	38 - 110
2-Chlorophenol	32.0	23.1		ug/L		72	49 - 110
4-Chlorophenyl phenyl ether	32.0	25.1		ug/L		78	55 - 115
Chrysene	32.0	26.4		ug/L		83	70 - 126

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-333741/2-A
Matrix: Water
Analysis Batch: 334842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333741

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibenz(a,h)anthracene	32.0	33.7		ug/L		105	59 - 145
Dibenzofuran	32.0	23.5		ug/L		73	54 - 111
3,3'-Dichlorobenzidine	32.0	32.1		ug/L		100	57 - 145
2,4-Dichlorophenol	32.0	26.0		ug/L		81	53 - 123
Diethyl phthalate	32.0	27.5		ug/L		86	64 - 126
2,4-Dimethylphenol	32.0	16.6		ug/L		52	42 - 115
Dimethyl phthalate	32.0	27.6		ug/L		86	66 - 120
Di-n-butyl phthalate	32.0	27.2		ug/L		85	67 - 125
4,6-Dinitro-2-methylphenol	64.0	51.0		ug/L		80	34 - 152
2,4-Dinitrophenol	64.0	49.0		ug/L		76	20 - 140
2,4-Dinitrotoluene	32.0	27.4		ug/L		86	67 - 131
2,6-Dinitrotoluene	32.0	25.9		ug/L		81	66 - 125
Di-n-octyl phthalate	32.0	27.8		ug/L		87	63 - 133
Fluoranthene	32.0	28.6		ug/L		89	68 - 127
Fluorene	32.0	25.1		ug/L		78	54 - 113
Hexachlorobenzene	32.0	28.5		ug/L		89	63 - 127
Hexachlorobutadiene	32.0	15.5		ug/L		48	20 - 110
Hexachlorocyclopentadiene	32.0	10.3	J	ug/L		32	10 - 110
Hexachloroethane	32.0	13.7		ug/L		43	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	27.0		ug/L		84	52 - 150
Isophorone	32.0	23.8		ug/L		74	55 - 120
2-Methylnaphthalene	32.0	19.0		ug/L		59	32 - 110
2-Methylphenol	32.0	30.0		ug/L		94	49 - 113
3 & 4 Methylphenol	32.0	23.7		ug/L		74	49 - 114
Naphthalene	32.0	18.1		ug/L		57	32 - 110
2-Nitroaniline	32.0	25.8		ug/L		81	61 - 126
3-Nitroaniline	32.0	27.0		ug/L		85	42 - 134
4-Nitroaniline	32.0	28.0		ug/L		88	40 - 142
Nitrobenzene	32.0	24.3		ug/L		76	49 - 116
2-Nitrophenol	32.0	22.8		ug/L		71	51 - 120
4-Nitrophenol	64.0	32.7		ug/L		51	21 - 110
N-Nitrosodi-n-propylamine	32.0	27.0		ug/L		84	52 - 122
N-Nitrosodiphenylamine	32.0	26.3		ug/L		82	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	20.7		ug/L		65	34 - 110
Pentachlorophenol	64.0	51.2		ug/L		80	29 - 138
Phenanthrene	32.0	28.6		ug/L		89	63 - 121
Phenol	32.0	18.9		ug/L		59	33 - 100
Pyrene	32.0	27.8		ug/L		87	65 - 122
2,4,5-Trichlorophenol	32.0	27.3		ug/L		85	63 - 121
2,4,6-Trichlorophenol	32.0	25.7		ug/L		80	61 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*73*		*30 - 123*
2-Fluorophenol (Surr)	*59*		*30 - 110*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*
Phenol-d5 (Surr)	*50*		*20 - 100*
Terphenyl-d14 (Surr)	*93*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*100*		*30 - 150*

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Lab Sample ID: LCSD 500-333741/3-A
Matrix: Water
Analysis Batch: 334842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 333741

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	21.1		ug/L		66	41 - 112	3	20
Acenaphthylene	32.0	23.1		ug/L		72	48 - 110	0	20
Acetophenone	32.0	25.1		ug/L		78	54 - 116	2	20
Anthracene	32.0	24.7		ug/L		77	65 - 118	2	20
Benzo[a]anthracene	32.0	28.9		ug/L		90	69 - 121	1	20
Benzo[a]pyrene	32.0	29.1		ug/L		91	69 - 130	3	20
Benzo[b]fluoranthene	32.0	31.9		ug/L		100	66 - 133	4	20
Benzo[g,h,i]perylene	32.0	30.2		ug/L		94	47 - 145	3	20
Benzo[k]fluoranthene	32.0	27.7		ug/L		86	64 - 134	3	20
Bis(2-chloroethoxy)methane	32.0	24.0		ug/L		75	55 - 115	2	20
Bis(2-chloroethyl)ether	32.0	22.1		ug/L		69	46 - 110	3	20
Bis(2-ethylhexyl) phthalate	32.0	27.8		ug/L		87	60 - 132	1	20
4-Bromophenyl phenyl ether	32.0	26.2		ug/L		82	60 - 124	5	20
Butyl benzyl phthalate	32.0	27.6		ug/L		86	63 - 127	0	20
Carbazole	32.0	26.2		ug/L		82	71 - 132	7	20
4-Chloroaniline	32.0	26.1		ug/L		82	15 - 125	1	20
4-Chloro-3-methylphenol	32.0	27.4		ug/L		85	63 - 120	3	20
2-Chloronaphthalene	32.0	20.5		ug/L		64	38 - 110	1	20
2-Chlorophenol	32.0	23.6		ug/L		74	49 - 110	2	20
4-Chlorophenyl phenyl ether	32.0	24.8		ug/L		77	55 - 115	1	20
Chrysene	32.0	27.5		ug/L		86	70 - 126	4	20
Dibenz(a,h)anthracene	32.0	34.5		ug/L		108	59 - 145	2	20
Dibenzofuran	32.0	23.4		ug/L		73	54 - 111	0	20
3,3'-Dichlorobenzidine	32.0	32.6		ug/L		102	57 - 145	1	20
2,4-Dichlorophenol	32.0	26.3		ug/L		82	53 - 123	1	20
Diethyl phthalate	32.0	25.9		ug/L		81	64 - 126	6	20
2,4-Dimethylphenol	32.0	17.5		ug/L		55	42 - 115	6	20
Dimethyl phthalate	32.0	26.5		ug/L		83	66 - 120	4	20
Di-n-butyl phthalate	32.0	27.6		ug/L		86	67 - 125	2	20
4,6-Dinitro-2-methylphenol	64.0	50.7		ug/L		79	34 - 152	1	20
2,4-Dinitrophenol	64.0	45.6		ug/L		71	20 - 140	7	20
2,4-Dinitrotoluene	32.0	27.3		ug/L		85	67 - 131	1	20
2,6-Dinitrotoluene	32.0	25.6		ug/L		80	66 - 125	1	20
Di-n-octyl phthalate	32.0	28.2		ug/L		88	63 - 133	1	20
Fluoranthene	32.0	28.0		ug/L		88	68 - 127	2	20
Fluorene	32.0	25.0		ug/L		78	54 - 113	0	20
Hexachlorobenzene	32.0	29.1		ug/L		91	63 - 127	2	20
Hexachlorobutadiene	32.0	17.0		ug/L		53	20 - 110	9	20
Hexachlorocyclopentadiene	32.0	10.3	J	ug/L		32	10 - 110	0	20
Hexachloroethane	32.0	15.2		ug/L		47	20 - 110	10	20
Indeno[1,2,3-cd]pyrene	32.0	26.4		ug/L		82	52 - 150	2	20
Isophorone	32.0	24.0		ug/L		75	55 - 120	1	20
2-Methylnaphthalene	32.0	19.3		ug/L		60	32 - 110	2	20
2-Methylphenol	32.0	25.3		ug/L		79	49 - 113	17	20
3 & 4 Methylphenol	32.0	22.7		ug/L		71	49 - 114	4	20
Naphthalene	32.0	18.8		ug/L		59	32 - 110	3	20
2-Nitroaniline	32.0	25.5		ug/L		80	61 - 126	1	20
3-Nitroaniline	32.0	28.5		ug/L		89	42 - 134	5	20
4-Nitroaniline	32.0	28.9		ug/L		90	40 - 142	3	20
Nitrobenzene	32.0	24.0		ug/L		75	49 - 116	1	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-333741/3-A
Matrix: Water
Analysis Batch: 334842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 333741

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Nitrophenol			32.0	22.9		ug/L		72	51 - 120	1	20
4-Nitrophenol			64.0	31.3		ug/L		49	21 - 110	4	20
N-Nitrosodi-n-propylamine			32.0	27.6		ug/L		86	52 - 122	2	20
N-Nitrosodiphenylamine			32.0	25.2		ug/L		79	63 - 117	4	20
2,2'-oxybis[1-chloropropane]			32.0	20.2		ug/L		63	34 - 110	3	20
Pentachlorophenol			64.0	53.4		ug/L		83	29 - 138	4	20
Phenanthrene			32.0	27.7		ug/L		87	63 - 121	3	20
Phenol			32.0	18.3		ug/L		57	33 - 100	3	20
Pyrene			32.0	27.9		ug/L		87	65 - 122	0	20
2,4,5-Trichlorophenol			32.0	28.6		ug/L		89	63 - 121	5	20
2,4,6-Trichlorophenol			32.0	25.3		ug/L		79	61 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*76*		*30 - 123*
2-Fluorophenol (Surr)	*60*		*30 - 110*
Nitrobenzene-d5 (Surr)	*82*		*33 - 139*
Phenol-d5 (Surr)	*50*		*20 - 100*
Terphenyl-d14 (Surr)	*92*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*103*		*30 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Lab Sample ID: LCSD 500-333741/3-A
Matrix: Water
Analysis Batch: 334842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 333741

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl - DL	*89*		*30 - 123*
2-Fluorophenol (Surr) - DL	*59*		*30 - 110*
Nitrobenzene-d5 (Surr) - DL	*92*		*33 - 139*
Phenol-d5 (Surr) - DL	*56*		*20 - 100*
Terphenyl-d14 (Surr) - DL	*108*		*42 - 150*
2,4,6-Tribromophenol (Surr) - DL	*113*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-333314/1-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333314

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/29/16 10:36	05/02/16 14:35	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/29/16 10:36	05/02/16 14:35	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/29/16 10:36	05/02/16 14:35	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/29/16 10:36	05/02/16 14:35	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/02/16 14:35	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-333314/1-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333314

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/29/16 10:36	05/02/16 14:35	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/29/16 10:36	05/02/16 14:35	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/29/16 10:36	05/02/16 14:35	1
Dieldrin	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/02/16 14:35	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/29/16 10:36	05/02/16 14:35	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/29/16 10:36	05/02/16 14:35	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/29/16 10:36	05/02/16 14:35	1
Endrin	<0.040		0.040	0.014	ug/L		04/29/16 10:36	05/02/16 14:35	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		04/29/16 10:36	05/02/16 14:35	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/29/16 10:36	05/02/16 14:35	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/29/16 10:36	05/02/16 14:35	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		04/29/16 10:36	05/02/16 14:35	1
Heptachlor	<0.040		0.040	0.014	ug/L		04/29/16 10:36	05/02/16 14:35	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/29/16 10:36	05/02/16 14:35	1
Methoxychlor	<0.080		0.080	0.023	ug/L		04/29/16 10:36	05/02/16 14:35	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/02/16 14:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*04/29/16 10:36*	*05/02/16 14:35*	*1*
Tetrachloro-m-xylene	*67*		*30 - 120*	*04/29/16 10:36*	*05/02/16 14:35*	*1*

Lab Sample ID: LCS 500-333314/2-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333314

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.236		ug/L		74	40 - 130
alpha-BHC	0.320	0.292		ug/L		91	70 - 130
alpha-Chlordane	0.320	0.292		ug/L		91	70 - 130
beta-BHC	0.320	0.293		ug/L		91	70 - 130
4,4'-DDD	0.320	0.303		ug/L		95	70 - 130
4,4'-DDE	0.320	0.302		ug/L		94	56 - 130
4,4'-DDT	0.320	0.289		ug/L		90	50 - 137
delta-BHC	0.320	0.339		ug/L		106	70 - 130
Dieldrin	0.320	0.293		ug/L		92	70 - 130
Endosulfan I	0.320	0.231		ug/L		72	40 - 130
Endosulfan II	0.320	0.246		ug/L		77	49 - 130
Endosulfan sulfate	0.320	0.308		ug/L		96	70 - 130
Endrin	0.320	0.296		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.302		ug/L		95	63 - 130
Endrin ketone	0.320	0.325		ug/L		102	54 - 141
gamma-BHC (Lindane)	0.320	0.301		ug/L		94	70 - 130
gamma-Chlordane	0.320	0.284		ug/L		89	63 - 130
Heptachlor	0.320	0.243		ug/L		76	40 - 130
Heptachlor epoxide	0.320	0.284		ug/L		89	70 - 130
Methoxychlor	0.320	0.272		ug/L		85	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-333314/2-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333314

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*89*		*30 - 143*
Tetrachloro-m-xylene	*69*		*30 - 120*

Lab Sample ID: LCSD 500-333314/3-A
Matrix: Water
Analysis Batch: 333580

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 333314

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.249		ug/L		78	40 - 130	5	20
alpha-BHC	0.320	0.307		ug/L		96	70 - 130	5	20
alpha-Chlordane	0.320	0.307		ug/L		96	70 - 130	5	20
beta-BHC	0.320	0.307		ug/L		96	70 - 130	5	20
4,4'-DDD	0.320	0.313		ug/L		98	70 - 130	3	20
4,4'-DDE	0.320	0.315		ug/L		98	56 - 130	4	20
4,4'-DDT	0.320	0.294		ug/L		92	50 - 137	2	20
delta-BHC	0.320	0.360		ug/L		112	70 - 130	6	20
Dieldrin	0.320	0.304		ug/L		95	70 - 130	4	20
Endosulfan I	0.320	0.238		ug/L		74	40 - 130	3	20
Endosulfan II	0.320	0.255		ug/L		80	49 - 130	4	20
Endosulfan sulfate	0.320	0.325		ug/L		102	70 - 130	6	20
Endrin	0.320	0.307		ug/L		96	69 - 130	4	20
Endrin aldehyde	0.320	0.301		ug/L		94	63 - 130	0	20
Endrin ketone	0.320	0.347		ug/L		108	54 - 141	6	20
gamma-BHC (Lindane)	0.320	0.316		ug/L		99	70 - 130	5	20
gamma-Chlordane	0.320	0.294		ug/L		92	63 - 130	3	20
Heptachlor	0.320	0.257		ug/L		80	40 - 130	6	20
Heptachlor epoxide	0.320	0.295		ug/L		92	70 - 130	4	20
Methoxychlor	0.320	0.293		ug/L		92	47 - 153	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*91*		*30 - 143*
Tetrachloro-m-xylene	*74*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-333314/1-A
Matrix: Water
Analysis Batch: 333560

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333314

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		04/29/16 10:36	05/02/16 10:20	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/02/16 10:20	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/02/16 10:20	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/02/16 10:20	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/02/16 10:20	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/02/16 10:20	1
PCB-1260	<0.40		0.40	0.070	ug/L		04/29/16 10:36	05/02/16 10:20	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-333314/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333560 — **Prep Batch: 333314**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 127*	*04/29/16 10:36*	*05/02/16 10:20*	*1*
DCB Decachlorobiphenyl	*105*		*30 - 150*	*04/29/16 10:36*	*05/02/16 10:20*	*1*

Lab Sample ID: LCS 500-333314/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333560 — **Prep Batch: 333314**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.70		ug/L		92	58 - 121
PCB-1260	4.00	4.98		ug/L		124	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*93*		*30 - 150*

Lab Sample ID: LCSD 500-333314/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333560 — **Prep Batch: 333314**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.99		ug/L		100	58 - 121	8	20
PCB-1260	4.00	5.31		ug/L		133	62 - 137	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*77*		*30 - 127*
DCB Decachlorobiphenyl	*109*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-333277/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333507 — **Prep Batch: 333277**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	^	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 18:31	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 18:31	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 18:31	1
Barium	<0.010		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 18:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 18:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 18:31	1
Calcium	<0.20		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 18:31	1
Chromium	<0.010		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 18:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 18:31	1
Copper	<0.010		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 18:31	1
Iron	<0.20		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 18:31	1
Magnesium	<0.10		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 18:31	1
Manganese	<0.010		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 18:31	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-333277/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333507 — **Prep Batch: 333277**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 18:31	1
Potassium	<0.50		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 18:31	1
Selenium	<0.010	^	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 18:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 18:31	1
Sodium	<1.0		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 18:31	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 18:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 18:31	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 18:31	1

Lab Sample ID: MB 500-333277/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333883 — **Prep Batch: 333277**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:16	1

Lab Sample ID: LCS 500-333277/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333507 — **Prep Batch: 333277**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.83	^	mg/L		92	80 - 120
Antimony	0.500	0.485		mg/L		97	80 - 120
Arsenic	0.100	0.0915		mg/L		92	80 - 120
Barium	2.00	2.06		mg/L		103	80 - 120
Beryllium	0.0500	0.0492		mg/L		98	80 - 120
Cadmium	0.0500	0.0484		mg/L		97	80 - 120
Calcium	10.0	9.61		mg/L		96	80 - 120
Chromium	0.200	0.197		mg/L		99	80 - 120
Cobalt	0.500	0.497		mg/L		99	80 - 120
Copper	0.250	0.253		mg/L		101	80 - 120
Iron	1.00	1.04		mg/L		104	80 - 120
Magnesium	10.0	9.48		mg/L		95	80 - 120
Manganese	0.500	0.490		mg/L		98	80 - 120
Nickel	0.500	0.490		mg/L		98	80 - 120
Potassium	10.0	9.85		mg/L		99	80 - 120
Selenium	0.100	0.0958	^	mg/L		96	80 - 120
Silver	0.0500	0.0462		mg/L		92	80 - 120
Sodium	10.0	9.87		mg/L		99	80 - 120
Thallium	0.100	0.0953		mg/L		95	80 - 120
Vanadium	0.500	0.492		mg/L		98	80 - 120
Zinc	0.500	0.474		mg/L		95	80 - 120

Lab Sample ID: LCS 500-333277/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333883 — **Prep Batch: 333277**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.100	0.0932		mg/L		93	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-333606/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334038 — **Prep Batch: 333606**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 13:53	1

Lab Sample ID: LCS 500-333606/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334038 — **Prep Batch: 333606**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00196		mg/L		98	80 - 120

Lab Sample ID: 500-110872-1 MS — **Client Sample ID: MW-1-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334038 — **Prep Batch: 333606**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.00105		mg/L		105	75 - 125

Lab Sample ID: 500-110872-1 MSD — **Client Sample ID: MW-1-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334038 — **Prep Batch: 333606**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.00110		mg/L		110	75 - 125	5	20

Lab Sample ID: 500-110872-1 DU — **Client Sample ID: MW-1-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334038 — **Prep Batch: 333606**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	<0.00020		<0.00020		mg/L		NC	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-333690/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 04:59	1

Lab Sample ID: LCS 500-333690/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	4.02	4.10		mg/L		102	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-334308/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:04	1

Lab Sample ID: LCS 500-334308/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.4		mg/L		97	80 - 120

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-334591/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.23	mg/L			05/08/16 15:05	1

Lab Sample ID: LCS 500-334591/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334591

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	8.70		mg/L		87	80 - 120
TOC Result 1	10.0	8.71		mg/L		87	80 - 120
TOC Result 2	10.0	8.69		mg/L		87	80 - 120

Lab Sample ID: MB 500-334832/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334832

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.23	mg/L			05/09/16 23:30	1

Lab Sample ID: LCS 500-334832/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334832

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	8.75		mg/L		88	80 - 120
TOC Result 1	10.0	8.76		mg/L		88	80 - 120
TOC Result 2	10.0	8.75		mg/L		87	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-333768/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333768

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.6	mg/L			05/03/16 11:20	1

Lab Sample ID: LCS 500-333768/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333768

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	193		mg/L		97	80 - 120

Lab Sample ID: 500-110872-1 DU — **Client Sample ID: MW-1-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333768

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	8.5		9.00	F5	mg/L		6	5

Lab Sample ID: 500-110872-2 DU — **Client Sample ID: MW-13-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333768

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	14		16.0	F5	mg/L		17	5

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-334645/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334656 — **Prep Batch: 334645**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0560	J	0.20	0.043	mg/L		05/09/16 19:05	05/09/16 21:46	1

Lab Sample ID: LCS 500-334645/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334656 — **Prep Batch: 334645**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.41		mg/L		96	80 - 120

Lab Sample ID: 500-110872-1 MS — **Client Sample ID: MW-1-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334656 — **Prep Batch: 334645**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	53	B	2.50	56.5	4	mg/L		139	75 - 125

Method: SM 4500 NH3 G - Ammonia (Continued)

Lab Sample ID: 500-110872-1 MSD — **Client Sample ID: MW-1-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334656 — **Prep Batch: 334645**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	53	B	2.50	57.2	4	mg/L		169	75 - 125	1	20

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-333707/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333707

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	0.00590	J	0.020	0.0032	mg/L			04/29/16 14:45	1

Lab Sample ID: LCS 500-333707/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333707

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.0986		mg/L		99	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-333669/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333669

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:35	1

Lab Sample ID: LCS 500-333669/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333669

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.971		mg/L		97	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Date Collected: 04/28/16 08:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	334912	05/11/16 10:58	TCT	TAL CHI
Total/NA	Prep	3510C			333741	05/03/16 09:31	SML	TAL CHI
Total/NA	Analysis	8270D		1	334204	05/06/16 00:42	GES	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 12:42	PJG	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 19:10	RLL	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		5	333725	05/03/16 02:51	PJ1	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 17:30	PJ1	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333507	04/29/16 19:06	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		5	333725	05/03/16 02:41	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 17:24	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333507	04/29/16 19:01	PJ1	TAL CHI
Dissolved	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334038	05/04/16 14:25	MJD	TAL CHI
Total/NA	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334038	05/04/16 14:10	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:24		
					(End)	05/03/16 05:27		
Total/NA	Analysis	9038		1	334308		CLB	TAL CHI
					(Start)	05/06/16 09:10		
					(End)	05/06/16 09:11		
Total/NA	Analysis	9060A		1	334591	05/08/16 17:44	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:28		
					(End)	05/03/16 11:29		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	334656	05/09/16 22:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333707		EAT	TAL CHI
					(Start)	04/29/16 14:51		
					(End)	04/29/16 14:52		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 19:19	CCK	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Date Collected: 04/28/16 10:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	334912	05/11/16 11:26	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	100	334912	05/11/16 11:54	TCT	TAL CHI
Total/NA	Prep	3510C			333741	05/03/16 09:31	SML	TAL CHI
Total/NA	Analysis	8270D		5	334204	05/06/16 01:08	GES	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 13:02	PJG	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8082A		5	333898	05/04/16 10:28	RLL	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 17:48	PJ1	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333507	04/29/16 19:25	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 17:35	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333507	04/29/16 19:11	PJ1	TAL CHI
Dissolved	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334038	05/04/16 14:30	MJD	TAL CHI
Total/NA	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334038	05/04/16 14:27	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:27		
					(End)	05/03/16 05:30		
Total/NA	Analysis	9038		20	334308		CLB	TAL CHI
					(Start)	05/06/16 09:11		
					(End)	05/06/16 09:12		
Total/NA	Analysis	9060A		4	334591	05/08/16 18:24	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:31		
					(End)	05/03/16 11:32		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	334656	05/09/16 22:09	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333707		EAT	TAL CHI
					(Start)	04/29/16 14:52		
					(End)	04/29/16 14:52		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 19:25	CCK	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40

Matrix: Water

Date Received: 04/28/16 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	334912	05/11/16 12:21	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	100	334912	05/11/16 12:49	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	1000	335116	05/12/16 15:19	JMP	TAL CHI
Total/NA	Prep	3510C			333741	05/03/16 09:31	SML	TAL CHI
Total/NA	Analysis	8270D		100	334204	05/06/16 01:35	GES	TAL CHI
Total/NA	Prep	3510C	DL		333741	05/03/16 09:31	SML	TAL CHI
Total/NA	Analysis	8270D	DL	500	334389	05/07/16 08:32	GES	TAL CHI
Total/NA	Prep	3510C	DL2		333741	05/03/16 09:31	SML	TAL CHI
Total/NA	Analysis	8270D	DL2	10000	334389	05/07/16 08:58	GES	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8081B		5	333747	05/03/16 13:21	PJG	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8082A		5	333898	05/04/16 10:44	RLL	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		5	333725	05/03/16 03:31	PJ1	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 17:59	PJ1	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333507	04/29/16 19:36	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		5	333725	05/03/16 03:11	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 17:53	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333507	04/29/16 19:30	PJ1	TAL CHI
Dissolved	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334038	05/04/16 14:35	MJD	TAL CHI
Total/NA	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334038	05/04/16 14:33	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:30		
					(End)	05/03/16 05:33		
Total/NA	Analysis	9038		100	334308		CLB	TAL CHI
					(Start)	05/06/16 09:12		
					(End)	05/06/16 09:13		
Total/NA	Analysis	9060A		80	334591	05/08/16 18:45	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:34		
					(End)	05/03/16 11:36		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		100	334656	05/09/16 22:12	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016 — Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40 — **Matrix: Water**
Date Received: 04/28/16 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NO2 B		1	333707		EAT	TAL CHI
					(Start)	04/29/16 14:52		
					(End)	04/29/16 14:52		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 19:26	CCK	TAL CHI

Client Sample ID: MW-11-GW-04282016 — Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22 — **Matrix: Water**
Date Received: 04/28/16 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	334912	05/11/16 13:17	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	5	334912	05/11/16 13:45	TCT	TAL CHI
Total/NA	Prep	3510C			333741	05/03/16 09:31	SML	TAL CHI
Total/NA	Analysis	8270D		10	334017	05/05/16 03:15	GES	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 13:40	PJG	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 20:27	RLL	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 18:11	PJ1	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333507	04/29/16 19:48	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 18:06	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333507	04/29/16 19:43	PJ1	TAL CHI
Dissolved	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334038	05/04/16 14:40	MJD	TAL CHI
Total/NA	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334038	05/04/16 14:37	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:33		
					(End)	05/03/16 05:35		
Total/NA	Analysis	9038		1	334308		CLB	TAL CHI
					(Start)	05/06/16 09:15		
					(End)	05/06/16 09:16		
Total/NA	Analysis	9060A		4	334591	05/08/16 19:05	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:36		
					(End)	05/03/16 11:37		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	334656	05/09/16 22:20	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-11-GW-04282016 — Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22 — **Matrix: Water**
Date Received: 04/28/16 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NO2 B		1	333707		EAT	TAL CHI
					(Start)	04/29/16 14:53		
					(End)	04/29/16 14:53		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 19:27	CCK	TAL CHI

Client Sample ID: DUP-1(04282016) — Lab Sample ID: 500-110872-5

Date Collected: 04/28/16 00:00 — **Matrix: Water**
Date Received: 04/28/16 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	334912	05/11/16 14:12	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	100	334912	05/11/16 14:40	TCT	TAL CHI
Total/NA	Prep	3510C			333741	05/03/16 09:31	SML	TAL CHI
Total/NA	Analysis	8270D		10	334017	05/05/16 03:42	GES	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8081B		5	333747	05/03/16 13:59	PJG	TAL CHI
Total/NA	Prep	3510C			333314	04/29/16 10:36	SML	TAL CHI
Total/NA	Analysis	8082A		5	333898	05/04/16 11:00	RLL	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 18:22	PJ1	TAL CHI
Dissolved	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333507	04/29/16 19:58	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 18:16	PJ1	TAL CHI
Total/NA	Prep	3010A			333277	04/29/16 08:31	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333507	04/29/16 19:53	PJ1	TAL CHI
Dissolved	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334038	05/04/16 14:44	MJD	TAL CHI
Total/NA	Prep	7470A			333606	05/02/16 13:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334038	05/04/16 14:42	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:35		
					(End)	05/03/16 05:38		
Total/NA	Analysis	9038		10	334308		CLB	TAL CHI
					(Start)	05/06/16 09:16		
					(End)	05/06/16 09:17		
Total/NA	Analysis	9060A		2	334832	05/10/16 00:36	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	333786	05/03/16 14:20	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:37		
					(End)	05/03/16 11:39		
Total/NA	Prep	SM 4500 NH3 B			334645	05/09/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	334656	05/09/16 22:23	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NO2 B		1	333707		EAT	TAL CHI
					(Start)	04/29/16 14:53		
					(End)	04/29/16 14:54		
Total/NA	Analysis	SM 4500 NO3 F		1	333669	05/02/16 19:28	CCK	TAL CHI

Laboratory References:

SC0015 = Pace-Pittsburgh (Microseeps), 220 William Pitt Way, Pittsburgh, PA 15238, TEL (412)826-5245

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 500-110872

Send Results to:

Contact & Company Name: Arcadis

Telephone: 312 575 3772

Address: 120 S. LaSalle St. Suite 1350

Fax:

City: Chicago State: IL Zip: 60603

E-mail Address: ellyn.gates@arcadis.com

Project Name/Location (City, State): LCCS Chicago, IL

Project #: CI001805.0002.00005

Sampler's Printed Name: Nicholas Ickes

Sampler's Signature:

	Preservative	E	E	C	C	A	A	
	Filtered (✓)				✓			
	# of Containers	6		1	1	1		9
	Container Information							

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

PARAMETER ANALYSIS & METHOD

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270D (MOD) List 4.2	8082A 8081B	7470A Mercury 6010C TAL Metals -Hg	7470A Mercury 6010C TAL Metals -Hg (Dissolved)	SM4500NH3-G Ammonia	SM4500-NO2-F Nitrogen, Nitrite, Nitrate	See Special Instructions	REMARKS
1	MW-1-GW-04282016	4-28-16	0822		✓	W	X	X	X	X	X	X	X	
2	MW-13-GW-04282016	4-28-16	1022		✓	W	X	X	X	X	X	X	X	
3	MW-12-GW-04282016	4-28-16	1240		✓	W	X	X	X	X	X	X	X	
4	MW-11-GW-04282016	4-28-16	1422		✓	W	X	X	X	X	X	X	X	
5	DUP-1 (04282016)	4-28-16	—		✓	W	X	X	X	X	X	X	X	

500-110872 COC

Special Instructions/Comments: 9034_Calc-Sulfide; 8260B-Target Compound List 4.2; 9060A - (MOD) Local Method; SM4500_NO2_B-Nitrogen, Nitrite; 9038-Sulfate; 2540D-Total Suspended Solids

☐ Special QA/QC Instructions(✓):

* Level IV Data Package

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: Nicholas Ickes	Printed Name: David Beckner	Printed Name: David Beckner	Printed Name: Aul Sauw
☐ Cooler packed with ice (✓)	☒ Intact ☐ Not Intact	Signature:	Signature: David Beckner	Signature: David Beckner	Signature: Ariel Sanchez
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: TA	Firm/Courier: TA	Firm: TA-CHI
Shipping Tracking #:	Condition/Cooler Temp: 08.18	Date/Time: 4-28-16 1520	Date/Time: 4-28-16 15:20	Date/Time: 4-28-16 16:05	Date/Time: 04/28/16 16:05

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-110872-1

Login Number: 110872
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8,1.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	Headspace larger than 1/4" in one or more vials, one vial with accpt. headspace
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-110948-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
5/16/2016 5:09:55 PM

Therese Hargraves, Project Manager I
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-110948-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-110948-1

Comments
No additional comments.

Receipt
The samples were received on 4/30/2016 7:34 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.1º C, 3.3º C and 3.6º C.

GC/MS VOA
Method(s) 8260B: The matrix spike (30 minutes) and matrix spike duplicate (54 minutes) for sample -6 were analyzed outside the 12 hour tune time. All spike recoveries were within limits therefore, the results have been reported.
MW-8-GW-04292016 (500-110948-6)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following analytes have been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%.

Method(s) 8270D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 500-334095 and analytical batch 500-335398 recovered outside control limits for the following analyte: Benzaldehyde . This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method(s) 8270D: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-334095 recovered outside control limits for the following analytes: 2,4-Dimethylphenol and 4-Chloroaniline; however, %recovery was within control limits for both the LCS and LCSD. Data has been qualified and reported.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in 500-335266 was outside the method criteria for the following analyte: Benzaldehyde. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 500-335398 recovered above the upper control limit for 2,2'-oxybis[1-chloropropane]. The sample associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 500-335266 recovered above the upper control limit for 2,2'-oxybis[1-chloropropane], Dibenz(a,h)anthracene and Indeno[1,2,3-cd]pyrene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: Tetrachloro-m-xylene surrogate recovery for the following sample was outside control limits: MW-2-GW-04282016 (500-110948-1). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8081B: DCB Decachlorobiphenyl surrogate recovery for the following sample was outside control limits: MW-7-GW-04292016 (500-110948-4). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8082A: The DCB surrogate recovery for the following sample was outside control limits: MW-6-GW-04292016 (500-110948-3). Evidence of matrix interference is present and the TCX surrogate and internal standard were both within control limits; therefore,

Job ID: 500-110948-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

re-extraction and/or re-analysis was not performed.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 333763 recovered below and outside the control limit for PCB 1260, peak 2, with a %D of -21%. The majority of samples associated with this CCV were non-detects for the affected analytes. The samples that had hits had sample results of less than 40% D between columns and internal standard recoveries within control limits; therefore, the data have been reported. The following samples are impacted: MW-2-GW-04282016 (500-110948-1), MW-10-GW-04292016 (500-110948-2), MW-6-GW-04292016 (500-110948-3), MW-9-GW-04292016 (500-110948-5), MW-8-GW-04292016 (500-110948-6) and DUP-2 (04292016) (500-110948-7).

Method(s) 8082A: Tetrachloro-m-xylene and DCB Decachlorobiphenyl surrogate recovery for the following samples were outside control limits: MW-7-GW-04292016 (500-110948-4). Re-extraction and re-analysis was performed with concurring results. Both sets of data have been reported.

Method(s) 8082A: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-334022 recovered outside control limits for the following analytes: PCB-1260 and PCB-1016.

Method(s) 8082A: The DCB Decachlorobiphenyl surrogate recovery for the following sample was outside acceptance limits (low biased) on the confirmation column: DUP-2 (04292016) (500-110948-7). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 500-333763 recovered low and outside control limit for surrogate DCB Decachlorobiphenyl on the confirmation column (ZB-5). No further action was taken. The following samples are impacted: MW-6-GW-04292016 (500-110948-3), MW-7-GW-04292016 (500-110948-4) and DUP-2 (04292016) (500-110948-7).

Method(s) 8082A: The initial calibration verification (ICV) result for batch 500-331727 was high and outside control limit on the ZB-5 column for PCB-1260 peak 3 (20.8%). Sample results were non-detects for this analyte, and have been reported as qualified data.

Method(s) 8082A: The initial calibration verification (ICV) result for batch 500-331727 was above the upper control limit on the Rtx-Clp2 column for PCB-1016 peak 3 (21.5%), PCB-1016 peak 5 (42.5%), and PCB-1260 peak 3 (27.5%). Sample results were non-detects for these analytes, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) SM 4500 NO3 F: Please note that the following Nitrate-Nitrite samples in batch 500-335172 have been reported as non-detects with elevated reporting limits due to the matrix of the samples: MW-6-GW-04292016 (500-110948-3), MW-7-GW-04292016 (500-110948-4) and DUP-2 (04292016) (500-110948-7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016 — Lab Sample ID: 500-110948-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Chloroethane	4.8		1.0	0.51	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	24		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	5.6		1.0	0.40	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	23		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	2.2		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	5.3		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl acetate	20		5.0	2.0	ug/L	1		8260B	Total/NA
Toluene	1.3		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	6.2		1.0	0.22	ug/L	1		8260B	Total/NA
Chlorobenzene - DL	660		5.0	1.9	ug/L	5		8260B	Total/NA
Acenaphthene	1.1		0.83	0.26	ug/L	1		8270D	Total/NA
Bis(2-chloroethyl)ether	0.97	J	1.7	0.24	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	2.0	J	8.3	1.4	ug/L	1		8270D	Total/NA
2-Chlorophenol	5.8		4.1	0.46	ug/L	1		8270D	Total/NA
Diethyl phthalate	0.50	J	1.7	0.30	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	1.9	J	4.1	0.61	ug/L	1		8270D	Total/NA
Fluorene	0.59	J	0.83	0.20	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	6.8		1.7	0.37	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	4.0		0.83	0.31	ug/L	1		8270D	Total/NA
Phenanthrene	0.33	J	0.83	0.25	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	0.70	J	4.1	0.30	ug/L	1		8270D	Total/NA
2-Methylnaphthalene - DL	120		4.1	0.54	ug/L	10		8270D	Total/NA
Naphthalene - DL	90		8.3	2.6	ug/L	10		8270D	Total/NA
Barium	0.30		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	100	V	0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0026	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	37	V	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0034	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	52		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.39	V	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0046	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	33		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	150		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.093		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.32		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0027	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	40		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	57		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.41		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0039	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	36		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	170		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.086		0.020	0.0090	mg/L	1		6010C	Dissolved
Total Organic Carbon - Duplicates	21		1.0	0.23	mg/L	1		9060A	Total/NA
Total Suspended Solids	77		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	43	B	4.0	0.86	mg/L	20		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016 (Continued) — Lab Sample ID: 500-110948-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrite	0.0055	J	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: MW-10-GW-04292016 — Lab Sample ID: 500-110948-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.40	J	0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.71	J	1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.29	J	0.50	0.15	ug/L	1		8260B	Total/NA
Diethyl phthalate	3.0		1.6	0.29	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	0.19	J	0.41	0.053	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.72	J	0.81	0.30	ug/L	1		8270D	Total/NA
Caprolactam	2.9	J	8.1	1.2	ug/L	1		8270D	Total/NA
Barium	0.12		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	210		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	20		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0043	J	0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	94		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	1.1		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0077	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	94		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0060	J B	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	320		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.026		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.12		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	210		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	19		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	95		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	1.1		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0062	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	92		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	310		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.0092	J	0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfate	420		100	40	mg/L	20		9038	Total/NA
Total Organic Carbon - Duplicates	11		1.0	0.23	mg/L	1		9060A	Total/NA
Total Suspended Solids	49		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	4.0	B	0.20	0.043	mg/L	1		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.0032	J	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: MW-6-GW-04292016 — Lab Sample ID: 500-110948-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	33		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	7.0		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.7		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.4		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	13		1.0	0.36	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	0.51	J	1.0	0.41	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-6-GW-04292016 (Continued) — Lab Sample ID: 500-110948-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichloroethane	1.4		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	100		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	6.7		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.1		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	14		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	27		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	160		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	4.1		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	380		5.0	1.1	ug/L	5		8260B	Total/NA
Bis(2-ethylhexyl) phthalate	85	J	86	15	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	110	*	86	16	ug/L	10		8270D	Total/NA
2-Methylphenol	20		17	2.6	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	96		17	3.9	ug/L	10		8270D	Total/NA
Naphthalene	16		8.6	2.7	ug/L	10		8270D	Total/NA
Phenol	40	J	43	5.8	ug/L	10		8270D	Total/NA
PCB-1232	4.9		0.43	0.22	ug/L	1		8082A	Total/NA
Aluminum	0.47		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.024		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.29		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0022		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	30		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.13		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.032		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.012		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	2.0		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.11		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	28		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.0099	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.13		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	570		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0081	J B	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	3100		100	43	mg/L	100		6010C	Total/NA
Vanadium	0.057		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.17		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.38		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.024		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.31		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0016	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	27		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.14		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.036		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0090	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	2.1		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.076		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	29		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.0087	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.14		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	610		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0055	J B	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	3300		100	43	mg/L	100		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016 (Continued) — Lab Sample ID: 500-110948-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.054		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.12		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00020		0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	7.9		1.0	0.22	mg/L	1		9034	Total/NA
Sulfate	21		10	4.0	mg/L	2		9038	Total/NA
Total Organic Carbon - Duplicates	360		20	4.6	mg/L	20		9060A	Total/NA
Total Suspended Solids	17		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	530	B	40	8.6	mg/L	200		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.014	J	0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: MW-7-GW-04292016 — Lab Sample ID: 500-110948-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	54		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	10		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	8.5		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	6.8		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	17		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	150		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	9.6		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.3		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	16		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	63		5.0	2.2	ug/L	1		8260B	Total/NA
Vinyl chloride	13		0.50	0.20	ug/L	1		8260B	Total/NA
Toluene - DL	410		2.5	0.76	ug/L	5		8260B	Total/NA
Xylenes, Total - DL	760		5.0	1.1	ug/L	5		8260B	Total/NA
Anthracene	2.8	J	8.4	2.8	ug/L	10		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	290		84	14	ug/L	10		8270D	Total/NA
Carbazole	4.8	J	42	3.0	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	470	*	84	15	ug/L	10		8270D	Total/NA
Fluoranthene	8.8		8.4	3.8	ug/L	10		8270D	Total/NA
Fluorene	3.2	J	8.4	2.1	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	9.4		4.2	0.55	ug/L	10		8270D	Total/NA
2-Methylphenol	78		17	2.6	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	280		17	3.8	ug/L	10		8270D	Total/NA
Naphthalene	48		8.4	2.6	ug/L	10		8270D	Total/NA
Phenanthrene	14		8.4	2.5	ug/L	10		8270D	Total/NA
Pyrene	8.0	J	8.4	3.6	ug/L	10		8270D	Total/NA
PCB-1254	1.7		0.41	0.21	ug/L	1		8082A	Total/NA
Aluminum	1.9		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.015	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.048		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.54		0.010	0.0022	mg/L	1		6010C	Total/NA
Beryllium	0.0011	J	0.0040	0.00085	mg/L	1		6010C	Total/NA
Cadmium	0.0080		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	11		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.48		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.044		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.082		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	4.7		0.20	0.10	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016 (Continued) — Lab Sample ID: 500-110948-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.68		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	22		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.017		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.16		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	670		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0091	J B	0.010	0.0046	mg/L	1		6010C	Total/NA
Silver	0.0026	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3600		100	43	mg/L	100		6010C	Total/NA
Vanadium	0.078		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.1		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	1.4		0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.011	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.040		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.47		0.010	0.0022	mg/L	1		6010C	Dissolved
Beryllium	0.00085	J	0.0040	0.00085	mg/L	1		6010C	Dissolved
Cadmium	0.0057		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	10		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.43		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.041		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.052		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	4.1		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.39		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	21		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.014		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.15		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	620		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0091	J B	0.010	0.0046	mg/L	1		6010C	Dissolved
Silver	0.0016	J	0.0050	0.0013	mg/L	1		6010C	Dissolved
Sodium	3400		100	43	mg/L	100		6010C	Dissolved
Vanadium	0.068		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.67		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.0010		0.00020	0.00011	mg/L	1		7470A	Total/NA
Mercury	0.00063		0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	8.8		1.0	0.22	mg/L	1		9034	Total/NA
Sulfate	240		100	40	mg/L	20		9038	Total/NA
Total Organic Carbon - Duplicates	480		20	4.6	mg/L	20		9060A	Total/NA
Total Suspended Solids	17		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	670	B	40	8.6	mg/L	200		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-9-GW-04292016 — Lab Sample ID: 500-110948-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.8		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	1.6		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	15		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.5		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.7		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.5		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.3		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	0.37	J	0.50	0.15	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016 (Continued) — Lab Sample ID: 500-110948-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.93	J	1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.97		0.85	0.26	ug/L	1		8270D	Total/NA
Fluorene	0.46	J	0.85	0.21	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.6		0.42	0.055	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	4.5		1.7	0.38	ug/L	1		8270D	Total/NA
Naphthalene	0.36	J	0.85	0.26	ug/L	1		8270D	Total/NA
Phenanthrene	0.48	J	0.85	0.26	ug/L	1		8270D	Total/NA
Barium	0.79		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0028	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	27		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	88		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.19		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0041	J	0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	79		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	200		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.83		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0016	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0033	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	91		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.19		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0044	J	0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	81		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	210		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	1.1		1.0	0.22	mg/L	1		9034	Total/NA
Total Organic Carbon - Duplicates	25		1.0	0.23	mg/L	1		9060A	Total/NA
Total Suspended Solids	52		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	79	B	5.0	1.1	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-8-GW-04292016 — Lab Sample ID: 500-110948-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.2		5.0	1.7	ug/L	1		8260B	Total/NA
Ethylbenzene	0.33	J	0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	1.2		1.0	0.22	ug/L	1		8260B	Total/NA
2-Methylnaphthalene	0.14	J	0.43	0.055	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	0.93	J	1.7	0.38	ug/L	1		8270D	Total/NA
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	10		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	91		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.16		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	38		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	240		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.63		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016 (Continued) — Lab Sample ID: 500-110948-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	10		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	90		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.16		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	37		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0065	J B	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	0.30	J	1.0	0.22	mg/L	1		9034	Total/NA
Total Organic Carbon - Duplicates	13		1.0	0.23	mg/L	1		9060A	Total/NA
Total Suspended Solids	23		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	41	B	2.0	0.43	mg/L	10		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.034		0.020	0.0032	mg/L	1		SM 4500 NO2 B	Total/NA

Client Sample ID: DUP-2 (04292016) — Lab Sample ID: 500-110948-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	30		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	7.0		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.5		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.5		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	13		1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.4		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	97		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	6.6		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.1		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	13		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	27		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	150		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	3.7		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	440		5.0	1.1	ug/L	5		8260B	Total/NA
Bis(2-ethylhexyl) phthalate	88		84	14	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	110	*	84	15	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	6.6		4.2	0.55	ug/L	10		8270D	Total/NA
2-Methylphenol	19		17	2.6	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	90		17	3.8	ug/L	10		8270D	Total/NA
Naphthalene	16		8.4	2.6	ug/L	10		8270D	Total/NA
Phenol	38	J	42	5.7	ug/L	10		8270D	Total/NA
PCB-1232	4.0		0.43	0.22	ug/L	1		8082A	Total/NA
Aluminum	0.51		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.023		0.010	0.0031	mg/L	1		6010C	Total/NA
Barium	0.31		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0022		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	28		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.14		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.036		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.013		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	2.2		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.13		0.0050	0.0024	mg/L	1		6010C	Total/NA
Magnesium	29		0.10	0.034	mg/L	1		6010C	Total/NA
Manganese	0.0093	J	0.010	0.0034	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016) (Continued) — Lab Sample ID: 500-110948-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.14		0.010	0.0031	mg/L	1		6010C	Total/NA
Potassium	610		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0093	J B	0.010	0.0046	mg/L	1		6010C	Total/NA
Sodium	3300		100	43	mg/L	100		6010C	Total/NA
Vanadium	0.057		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.18		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.27		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.021		0.010	0.0031	mg/L	1		6010C	Dissolved
Barium	0.29		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	26		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.13		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.034		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0048	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	2.0		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.032		0.0050	0.0024	mg/L	1		6010C	Dissolved
Magnesium	28		0.10	0.034	mg/L	1		6010C	Dissolved
Manganese	0.0084	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.14		0.010	0.0031	mg/L	1		6010C	Dissolved
Potassium	590		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0078	J B	0.010	0.0046	mg/L	1		6010C	Dissolved
Sodium	3200		100	43	mg/L	100		6010C	Dissolved
Vanadium	0.050		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.060		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00020		0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	4.5		1.0	0.22	mg/L	1		9034	Total/NA
Sulfate	63		20	8.0	mg/L	4		9038	Total/NA
Total Organic Carbon - Duplicates	350		20	4.6	mg/L	20		9060A	Total/NA
Total Suspended Solids	19		5.0	1.6	mg/L	1		SM 2540D	Total/NA
Ammonia	770	B	40	8.6	mg/L	200		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-110948-1	MW-2-GW-04282016	Water	04/28/16 16:17	04/30/16 07:34
500-110948-2	MW-10-GW-04292016	Water	04/29/16 07:07	04/30/16 07:34
500-110948-3	MW-6-GW-04292016	Water	04/29/16 08:47	04/30/16 07:34
500-110948-4	MW-7-GW-04292016	Water	04/29/16 10:47	04/30/16 07:34
500-110948-5	MW-9-GW-04292016	Water	04/29/16 12:27	04/30/16 07:34
500-110948-6	MW-8-GW-04292016	Water	04/29/16 14:02	04/30/16 07:34
500-110948-7	DUP-2 (04292016)	Water	04/29/16 00:00	04/30/16 07:34

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Lab Sample ID: 500-110948-1

Date Collected: 04/28/16 16:17
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 05:28	1
Benzene	**14**		0.50	0.15	ug/L			05/12/16 05:28	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 05:28	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 05:28	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 05:28	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 05:28	1
Chloroethane	**4.8**		1.0	0.51	ug/L			05/12/16 05:28	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 05:28	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 05:28	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 05:28	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 05:28	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 05:28	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 05:28	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,2-Dichlorobenzene	**24**		1.0	0.33	ug/L			05/12/16 05:28	1
1,3-Dichlorobenzene	**5.6**		1.0	0.40	ug/L			05/12/16 05:28	1
1,4-Dichlorobenzene	**23**		1.0	0.36	ug/L			05/12/16 05:28	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 05:28	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 05:28	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 05:28	1
Ethylbenzene	**2.2**		0.50	0.18	ug/L			05/12/16 05:28	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 05:28	1
Isopropylbenzene	**5.3**		1.0	0.39	ug/L			05/12/16 05:28	1
Methyl acetate	**20**		5.0	2.0	ug/L			05/12/16 05:28	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 05:28	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 05:28	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/12/16 05:28	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/12/16 05:28	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 05:28	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Toluene	**1.3**		0.50	0.15	ug/L			05/12/16 05:28	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 05:28	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 05:28	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 05:28	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 05:28	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 05:28	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 05:28	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 05:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 05:28	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 05:28	1
Xylenes, Total	**6.2**		1.0	0.22	ug/L			05/12/16 05:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*05/12/16 05:28*	*1*
Dibromofluoromethane	*99*		*70 - 120*		*05/12/16 05:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*05/12/16 05:28*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*05/12/16 05:28*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**660**		5.0	1.9	ug/L			05/12/16 05:55	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*05/12/16 05:55*	*5*
Dibromofluoromethane	*99*		*70 - 120*		*05/12/16 05:55*	*5*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*05/12/16 05:55*	*5*
Toluene-d8 (Surr)	*98*		*75 - 120*		*05/12/16 05:55*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.1**		0.83	0.26	ug/L		05/05/16 08:14	05/13/16 09:00	1
Acenaphthylene	<0.83		0.83	0.22	ug/L		05/05/16 08:14	05/13/16 09:00	1
Acetophenone	<4.1		4.1	0.55	ug/L		05/05/16 08:14	05/13/16 09:00	1
Anthracene	<0.83		0.83	0.28	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[a]anthracene	<0.17		0.17	0.047	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[a]pyrene	<0.17		0.17	0.082	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[b]fluoranthene	<0.17		0.17	0.067	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[g,h,i]perylene	<0.83		0.83	0.31	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[k]fluoranthene	<0.17		0.17	0.053	ug/L		05/05/16 08:14	05/13/16 09:00	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		05/05/16 08:14	05/13/16 09:00	1
Bis(2-chloroethyl)ether	**0.97**	**J**	1.7	0.24	ug/L		05/05/16 08:14	05/13/16 09:00	1
Bis(2-ethylhexyl) phthalate	**2.0**	**J**	8.3	1.4	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Bromophenyl phenyl ether	<4.1		4.1	0.45	ug/L		05/05/16 08:14	05/13/16 09:00	1
Butyl benzyl phthalate	<1.7		1.7	0.40	ug/L		05/05/16 08:14	05/13/16 09:00	1
Carbazole	<4.1		4.1	0.29	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Chloroaniline	<8.3	*	8.3	1.7	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Chloro-3-methylphenol	<8.3		8.3	1.9	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Chloronaphthalene	<1.7		1.7	0.19	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Chlorophenol	**5.8**		4.1	0.46	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Chlorophenyl phenyl ether	<4.1		4.1	0.53	ug/L		05/05/16 08:14	05/13/16 09:00	1
Chrysene	<0.41		0.41	0.056	ug/L		05/05/16 08:14	05/13/16 09:00	1
Dibenz(a,h)anthracene	<0.25		0.25	0.042	ug/L		05/05/16 08:14	05/13/16 09:00	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		05/05/16 08:14	05/13/16 09:00	1
3,3'-Dichlorobenzidine	<4.1		4.1	1.4	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dichlorophenol	<8.3		8.3	2.2	ug/L		05/05/16 08:14	05/13/16 09:00	1
Diethyl phthalate	**0.50**	**J**	1.7	0.30	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dimethylphenol	<8.3	*	8.3	1.5	ug/L		05/05/16 08:14	05/13/16 09:00	1
Dimethyl phthalate	<1.7		1.7	0.26	ug/L		05/05/16 08:14	05/13/16 09:00	1
Di-n-butyl phthalate	**1.9**	**J**	4.1	0.61	ug/L		05/05/16 08:14	05/13/16 09:00	1
4,6-Dinitro-2-methylphenol	<17		17	4.9	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dinitrophenol	<17		17	7.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dinitrotoluene	<0.83		0.83	0.20	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,6-Dinitrotoluene	<0.41		0.41	0.061	ug/L		05/05/16 08:14	05/13/16 09:00	1
Di-n-octyl phthalate	<8.3		8.3	0.87	ug/L		05/05/16 08:14	05/13/16 09:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.83		0.83	0.38	ug/L		05/05/16 08:14	05/13/16 09:00	1
Fluorene	**0.59**	**J**	0.83	0.20	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachlorobenzene	<0.41		0.41	0.066	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachlorobutadiene	<4.1		4.1	0.43	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachlorocyclopentadiene	<17		17	5.3	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachloroethane	<4.1		4.1	0.50	ug/L		05/05/16 08:14	05/13/16 09:00	1
Indeno[1,2,3-cd]pyrene	<0.17		0.17	0.062	ug/L		05/05/16 08:14	05/13/16 09:00	1
Isophorone	<1.7		1.7	0.31	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Methylphenol	<1.7		1.7	0.25	ug/L		05/05/16 08:14	05/13/16 09:00	1
3 & 4 Methylphenol	**6.8**		1.7	0.37	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Nitroaniline	<4.1		4.1	1.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
3-Nitroaniline	<8.3		8.3	1.5	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Nitroaniline	<8.3		8.3	1.4	ug/L		05/05/16 08:14	05/13/16 09:00	1
Nitrobenzene	<0.83		0.83	0.37	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Nitrophenol	<8.3		8.3	2.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Nitrophenol	<17		17	6.2	ug/L		05/05/16 08:14	05/13/16 09:00	1
N-Nitrosodi-n-propylamine	<0.41		0.41	0.13	ug/L		05/05/16 08:14	05/13/16 09:00	1
N-Nitrosodiphenylamine	**4.0**		0.83	0.31	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/13/16 09:00	1
Pentachlorophenol	<17		17	3.3	ug/L		05/05/16 08:14	05/13/16 09:00	1
Phenanthrene	**0.33**	**J**	0.83	0.25	ug/L		05/05/16 08:14	05/13/16 09:00	1
Phenol	<4.1		4.1	0.56	ug/L		05/05/16 08:14	05/13/16 09:00	1
Pyrene	<0.83		0.83	0.35	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4,5-Trichlorophenol	<8.3		8.3	2.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4,6-Trichlorophenol	<4.1		4.1	0.59	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzaldehyde	<17	*	17	13	ug/L		05/05/16 08:14	05/13/16 09:00	1
Caprolactam	<8.3		8.3	1.2	ug/L		05/05/16 08:14	05/13/16 09:00	1
Atrazine	<4.1		4.1	0.52	ug/L		05/05/16 08:14	05/13/16 09:00	1
1,1'-Biphenyl	**0.70**	**J**	4.1	0.30	ug/L		05/05/16 08:14	05/13/16 09:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*64*		*30 - 123*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*30 - 150*	*05/05/16 08:14*	*05/13/16 09:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**120**		4.1	0.54	ug/L		05/05/16 08:14	05/13/16 00:51	10
Naphthalene	**90**		8.3	2.6	ug/L		05/05/16 08:14	05/13/16 00:51	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.042		0.042	0.0055	ug/L		05/02/16 16:20	05/03/16 15:35	1
alpha-BHC	<0.042		0.042	0.0027	ug/L		05/02/16 16:20	05/03/16 15:35	1
alpha-Chlordane	<0.042		0.042	0.0046	ug/L		05/02/16 16:20	05/03/16 15:35	1
beta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 15:35	1
4,4'-DDD	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1
Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.042		0.042	0.0039	ug/L		05/02/16 16:20	05/03/16 15:35	1
4,4'-DDT	<0.042		0.042	0.0033	ug/L		05/02/16 16:20	05/03/16 15:35	1
delta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 15:35	1
Dieldrin	<0.042		0.042	0.013	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endosulfan I	<0.042		0.042	0.0043	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endosulfan II	<0.042		0.042	0.0029	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endosulfan sulfate	<0.042		0.042	0.012	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endrin	<0.042		0.042	0.015	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endrin aldehyde	<0.042		0.042	0.0085	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endrin ketone	<0.042		0.042	0.018	ug/L		05/02/16 16:20	05/03/16 15:35	1
gamma-BHC (Lindane)	<0.042		0.042	0.0058	ug/L		05/02/16 16:20	05/03/16 15:35	1
gamma-Chlordane	<0.042		0.042	0.0075	ug/L		05/02/16 16:20	05/03/16 15:35	1
Heptachlor	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	1
Heptachlor epoxide	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	1
Methoxychlor	<0.083		0.083	0.024	ug/L		05/02/16 16:20	05/03/16 15:35	1
Toxaphene	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*05/02/16 16:20*	*05/03/16 15:35*	*1*
Tetrachloro-m-xylene	*142*	*X*	*30 - 120*	*05/02/16 16:20*	*05/03/16 15:35*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.42		0.42	0.070	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1221	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1232	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1242	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1248	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1254	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1260	<0.42		0.42	0.073	ug/L		05/02/16 16:20	05/03/16 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*30 - 127*	*05/02/16 16:20*	*05/03/16 17:06*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*05/02/16 16:20*	*05/03/16 17:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 18:49	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 18:49	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:49	1
Barium	**0.30**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 18:49	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 18:49	1
Calcium	**100**	**V**	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 18:49	1
Chromium	**0.0026**	**J**	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 18:49	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 18:49	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:49	1
Iron	**37**	**V**	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 18:49	1
Lead	**0.0034**	**J**	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 18:49	1
Magnesium	**52**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 18:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.39**	**V**	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 18:49	1
Nickel	**0.0046**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:49	1
Potassium	**33**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 18:49	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 18:49	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 18:49	1
Sodium	**150**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 18:49	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 18:49	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 18:49	1
Zinc	**0.093**		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 18:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 18:58	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 18:58	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:58	1
Barium	**0.32**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 18:58	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 18:58	1
Calcium	**110**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 18:58	1
Chromium	**0.0027**	**J**	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 18:58	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 18:58	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:58	1
Iron	**40**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 18:58	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 18:58	1
Magnesium	**57**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 18:58	1
Manganese	**0.41**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 18:58	1
Nickel	**0.0039**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:58	1
Potassium	**36**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 18:58	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 18:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 18:58	1
Sodium	**170**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 18:58	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 18:58	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 18:58	1
Zinc	**0.086**		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 18:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:00	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:38	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:17	1
Total Organic Carbon - Duplicates	**21**		1.0	0.23	mg/L			05/13/16 22:17	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**77**		5.0	1.6	mg/L			05/03/16 11:44	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Lab Sample ID: 500-110948-1

Date Collected: 04/28/16 16:17

Matrix: Water

Date Received: 04/30/16 07:34

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**43**	**B**	4.0	0.86	mg/L		05/11/16 18:12	05/12/16 19:17	20
Nitrogen, Nitrite	**0.0055**	**J**	0.020	0.0032	mg/L			04/30/16 12:19	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2

Date Collected: 04/29/16 07:07
Date Received: 04/30/16 07:34

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 18:46	1
Benzene	**0.40**	**J**	0.50	0.15	ug/L			05/12/16 18:46	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 18:46	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 18:46	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 18:46	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 18:46	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 18:46	1
Chlorobenzene	**0.71**	**J**	1.0	0.39	ug/L			05/12/16 18:46	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 18:46	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 18:46	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 18:46	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 18:46	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 18:46	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 18:46	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 18:46	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 18:46	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 18:46	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 18:46	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/12/16 18:46	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 18:46	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 18:46	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 18:46	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/12/16 18:46	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 18:46	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 18:46	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 18:46	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 18:46	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/12/16 18:46	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/12/16 18:46	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 18:46	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 18:46	1
Toluene	**0.29**	**J**	0.50	0.15	ug/L			05/12/16 18:46	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 18:46	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 18:46	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 18:46	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 18:46	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 18:46	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 18:46	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 18:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 18:46	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 18:46	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			05/12/16 18:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2

Date Collected: 04/29/16 07:07
Matrix: Water
Date Received: 04/30/16 07:34

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*05/12/16 18:46*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*05/12/16 18:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*		*05/12/16 18:46*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 18:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.81		0.81	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
Acenaphthylene	<0.81		0.81	0.22	ug/L		05/05/16 08:14	05/13/16 01:18	1
Acetophenone	<4.1		4.1	0.54	ug/L		05/05/16 08:14	05/13/16 01:18	1
Anthracene	<0.81		0.81	0.27	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[a]anthracene	<0.16		0.16	0.046	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[a]pyrene	<0.16		0.16	0.080	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[g,h,i]perylene	<0.81		0.81	0.30	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[k]fluoranthene	<0.16		0.16	0.052	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.24	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-ethylhexyl) phthalate	<8.1		8.1	1.4	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Bromophenyl phenyl ether	<4.1		4.1	0.44	ug/L		05/05/16 08:14	05/13/16 01:18	1
Butyl benzyl phthalate	<1.6		1.6	0.39	ug/L		05/05/16 08:14	05/13/16 01:18	1
Carbazole	<4.1		4.1	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chloroaniline	<8.1	*	8.1	1.6	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chloro-3-methylphenol	<8.1		8.1	1.9	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Chlorophenol	<4.1		4.1	0.45	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chlorophenyl phenyl ether	<4.1		4.1	0.52	ug/L		05/05/16 08:14	05/13/16 01:18	1
Chrysene	<0.41		0.41	0.055	ug/L		05/05/16 08:14	05/13/16 01:18	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		05/05/16 08:14	05/13/16 01:18	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		05/05/16 08:14	05/13/16 01:18	1
3,3'-Dichlorobenzidine	<4.1		4.1	1.4	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dichlorophenol	<8.1		8.1	2.1	ug/L		05/05/16 08:14	05/13/16 01:18	1
Diethyl phthalate	**3.0**		1.6	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dimethylphenol	<8.1	*	8.1	1.5	ug/L		05/05/16 08:14	05/13/16 01:18	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
Di-n-butyl phthalate	<4.1		4.1	0.59	ug/L		05/05/16 08:14	05/13/16 01:18	1
4,6-Dinitro-2-methylphenol	<16		16	4.8	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dinitrophenol	<16		16	7.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dinitrotoluene	<0.81		0.81	0.20	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,6-Dinitrotoluene	<0.41		0.41	0.060	ug/L		05/05/16 08:14	05/13/16 01:18	1
Di-n-octyl phthalate	<8.1		8.1	0.85	ug/L		05/05/16 08:14	05/13/16 01:18	1
Fluoranthene	<0.81		0.81	0.37	ug/L		05/05/16 08:14	05/13/16 01:18	1
Fluorene	<0.81		0.81	0.20	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachlorobenzene	<0.41		0.41	0.064	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachlorobutadiene	<4.1		4.1	0.42	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachlorocyclopentadiene	<16		16	5.2	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachloroethane	<4.1		4.1	0.49	ug/L		05/05/16 08:14	05/13/16 01:18	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.061	ug/L		05/05/16 08:14	05/13/16 01:18	1
Isophorone	<1.6		1.6	0.30	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Methylnaphthalene	**0.19**	**J**	0.41	0.053	ug/L		05/05/16 08:14	05/13/16 01:18	1

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2

Date Collected: 04/29/16 07:07

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.6		1.6	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		05/05/16 08:14	05/13/16 01:18	1
Naphthalene	<0.81		0.81	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Nitroaniline	<4.1		4.1	1.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
3-Nitroaniline	<8.1		8.1	1.4	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Nitroaniline	<8.1		8.1	1.3	ug/L		05/05/16 08:14	05/13/16 01:18	1
Nitrobenzene	<0.81		0.81	0.36	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Nitrophenol	<8.1		8.1	2.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Nitrophenol	<16		16	6.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
N-Nitrosodi-n-propylamine	<0.41		0.41	0.12	ug/L		05/05/16 08:14	05/13/16 01:18	1
N-Nitrosodiphenylamine	**0.72**	**J**	0.81	0.30	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.31	ug/L		05/05/16 08:14	05/13/16 01:18	1
Pentachlorophenol	<16		16	3.2	ug/L		05/05/16 08:14	05/13/16 01:18	1
Phenanthrene	<0.81		0.81	0.24	ug/L		05/05/16 08:14	05/13/16 01:18	1
Phenol	<4.1		4.1	0.54	ug/L		05/05/16 08:14	05/13/16 01:18	1
Pyrene	<0.81		0.81	0.35	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4,5-Trichlorophenol	<8.1		8.1	2.1	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4,6-Trichlorophenol	<4.1		4.1	0.58	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzaldehyde	<16	^ *	16	12	ug/L		05/05/16 08:14	05/13/16 01:18	1
Caprolactam	**2.9**	**J**	8.1	1.2	ug/L		05/05/16 08:14	05/13/16 01:18	1
Atrazine	<4.1		4.1	0.51	ug/L		05/05/16 08:14	05/13/16 01:18	1
1,1'-Biphenyl	<4.1		4.1	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*30 - 123*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
2-Fluorophenol (Surr)	*70*		*30 - 110*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
Nitrobenzene-d5 (Surr)	*82*		*33 - 139*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*05/05/16 08:14*	*05/13/16 01:18*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0055	ug/L		05/02/16 16:20	05/03/16 15:54	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		05/02/16 16:20	05/03/16 15:54	1
alpha-Chlordane	<0.041		0.041	0.0046	ug/L		05/02/16 16:20	05/03/16 15:54	1
beta-BHC	<0.041		0.041	0.011	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		05/02/16 16:20	05/03/16 15:54	1
delta-BHC	<0.041		0.041	0.011	ug/L		05/02/16 16:20	05/03/16 15:54	1
Dieldrin	<0.041		0.041	0.013	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endrin	<0.041		0.041	0.015	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endrin aldehyde	<0.041		0.041	0.0085	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endrin ketone	<0.041		0.041	0.018	ug/L		05/02/16 16:20	05/03/16 15:54	1
gamma-BHC (Lindane)	<0.041		0.041	0.0058	ug/L		05/02/16 16:20	05/03/16 15:54	1
gamma-Chlordane	<0.041		0.041	0.0075	ug/L		05/02/16 16:20	05/03/16 15:54	1

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2
Date Collected: 04/29/16 07:07
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 15:54	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 15:54	1
Methoxychlor	<0.083		0.083	0.024	ug/L		05/02/16 16:20	05/03/16 15:54	1
Toxaphene	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*05/02/16 16:20*	*05/03/16 15:54*	*1*
Tetrachloro-m-xylene	*65*		*30 - 120*	*05/02/16 16:20*	*05/03/16 15:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.069	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1221	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1232	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1242	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1248	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1254	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1260	<0.41		0.41	0.073	ug/L		05/02/16 16:20	05/03/16 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 127*	*05/02/16 16:20*	*05/03/16 17:21*	*1*
DCB Decachlorobiphenyl	*67*		*30 - 150*	*05/02/16 16:20*	*05/03/16 17:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:02	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:02	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:02	1
Barium	**0.12**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:02	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:02	1
Calcium	**210**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:02	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:02	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:02	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:02	1
Iron	**20**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:02	1
Lead	**0.0043**	**J**	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:02	1
Magnesium	**94**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:02	1
Manganese	**1.1**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:02	1
Nickel	**0.0077**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:02	1
Potassium	**94**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:02	1
Selenium	**0.0060**	**J B**	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:02	1
Sodium	**320**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:02	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:02	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:02	1
Zinc	**0.026**		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:02	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2

Date Collected: 04/29/16 07:07
Matrix: Water
Date Received: 04/30/16 07:34

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:07	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:07	1
Barium	**0.12**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:07	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:07	1
Calcium	**210**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:07	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:07	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:07	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:07	1
Iron	**19**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:07	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:07	1
Magnesium	**95**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:07	1
Manganese	**1.1**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:07	1
Nickel	**0.0062**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:07	1
Potassium	**92**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:07	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:07	1
Sodium	**310**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:07	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:07	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:07	1
Zinc	**0.0092**	**J**	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:41	1
Sulfate	**420**		100	40	mg/L			05/06/16 09:20	20
Total Organic Carbon - Duplicates	**11**		1.0	0.23	mg/L			05/13/16 22:38	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**49**		5.0	1.6	mg/L			05/03/16 11:45	1
Ammonia	**4.0**	**B**	0.20	0.043	mg/L		05/11/16 18:12	05/12/16 19:20	1
Nitrogen, Nitrite	**0.0032**	**J**	0.020	0.0032	mg/L			04/30/16 12:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3

Date Collected: 04/29/16 08:47
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**33**		5.0	1.7	ug/L			05/12/16 19:12	1
Benzene	**7.0**		0.50	0.15	ug/L			05/12/16 19:12	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 19:12	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 19:12	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 19:12	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 19:12	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 19:12	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 19:12	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 19:12	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 19:12	1
cis-1,2-Dichloroethene	**4.7**		1.0	0.41	ug/L			05/12/16 19:12	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 19:12	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 19:12	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 19:12	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 19:12	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
1,2-Dichlorobenzene	**2.4**		1.0	0.33	ug/L			05/12/16 19:12	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 19:12	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			05/12/16 19:12	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 19:12	1
1,1-Dichloroethane	**0.51**	**J**	1.0	0.41	ug/L			05/12/16 19:12	1
1,2-Dichloroethane	**1.4**		1.0	0.39	ug/L			05/12/16 19:12	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 19:12	1
Ethylbenzene	**100**		0.50	0.18	ug/L			05/12/16 19:12	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 19:12	1
Isopropylbenzene	**6.7**		1.0	0.39	ug/L			05/12/16 19:12	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 19:12	1
Methylcyclohexane	**1.1**		1.0	0.32	ug/L			05/12/16 19:12	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 19:12	1
Methyl Ethyl Ketone	**14**		5.0	2.1	ug/L			05/12/16 19:12	1
methyl isobutyl ketone	**27**		5.0	2.2	ug/L			05/12/16 19:12	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 19:12	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 19:12	1
Toluene	**160**		0.50	0.15	ug/L			05/12/16 19:12	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 19:12	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 19:12	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 19:12	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 19:12	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 19:12	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 19:12	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 19:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 19:12	1
Vinyl chloride	**4.1**		0.50	0.20	ug/L			05/12/16 19:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Date Collected: 04/29/16 08:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*71 - 120*		*05/12/16 19:12*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*05/12/16 19:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*		*05/12/16 19:12*	*1*
Toluene-d8 (Surr)	*105*		*75 - 120*		*05/12/16 19:12*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**380**		5.0	1.1	ug/L			05/12/16 19:39	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*05/12/16 19:39*	*5*
Dibromofluoromethane	*97*		*70 - 120*		*05/12/16 19:39*	*5*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*		*05/12/16 19:39*	*5*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/12/16 19:39*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.6		8.6	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acenaphthylene	<8.6		8.6	2.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acetophenone	<43		43	5.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Anthracene	<8.6		8.6	2.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[a]anthracene	<1.7		1.7	0.49	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[a]pyrene	<1.7		1.7	0.85	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[b]fluoranthene	<1.7		1.7	0.70	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[g,h,i]perylene	<8.6		8.6	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[k]fluoranthene	<1.7		1.7	0.55	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-ethylhexyl) phthalate	**85**	**J**	86	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Bromophenyl phenyl ether	<43		43	4.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Butyl benzyl phthalate	<17		17	4.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
Carbazole	<43		43	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chloroaniline	<86	*	86	17	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chloro-3-methylphenol	<86		86	20	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Chlorophenol	<43		43	4.8	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chlorophenyl phenyl ether	<43		43	5.5	ug/L		05/05/16 08:14	05/13/16 09:27	10
Chrysene	<4.3		4.3	0.59	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dibenz(a,h)anthracene	<2.6		2.6	0.44	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dibenzofuran	<17		17	2.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
3,3'-Dichlorobenzidine	<43		43	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dichlorophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
Diethyl phthalate	<17		17	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dimethylphenol	**110**	*****	86	16	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dimethyl phthalate	<17		17	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Di-n-butyl phthalate	<43		43	6.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
4,6-Dinitro-2-methylphenol	<170		170	51	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dinitrophenol	<170		170	74	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dinitrotoluene	<8.6		8.6	2.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,6-Dinitrotoluene	<4.3		4.3	0.64	ug/L		05/05/16 08:14	05/13/16 09:27	10
Di-n-octyl phthalate	<86		86	9.1	ug/L		05/05/16 08:14	05/13/16 09:27	10

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3

Date Collected: 04/29/16 08:47

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.6		8.6	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Fluorene	<8.6		8.6	2.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorobenzene	<4.3		4.3	0.68	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorobutadiene	<43		43	4.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorocyclopentadiene	<170		170	55	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachloroethane	<43		43	5.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.64	ug/L		05/05/16 08:14	05/13/16 09:27	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Methylnaphthalene	<4.3		4.3	0.56	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Methylphenol	**20**		17	2.6	ug/L		05/05/16 08:14	05/13/16 09:27	10
3 & 4 Methylphenol	**96**		17	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Naphthalene	**16**		8.6	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Nitroaniline	<43		43	11	ug/L		05/05/16 08:14	05/13/16 09:27	10
3-Nitroaniline	<86		86	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Nitroaniline	<86		86	14	ug/L		05/05/16 08:14	05/13/16 09:27	10
Nitrobenzene	<8.6		8.6	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Nitrophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Nitrophenol	<170		170	64	ug/L		05/05/16 08:14	05/13/16 09:27	10
N-Nitrosodi-n-propylamine	<4.3		4.3	1.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
N-Nitrosodiphenylamine	<8.6		8.6	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,2'-oxybis[1-chloropropane]	<17		17	3.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
Pentachlorophenol	<170		170	34	ug/L		05/05/16 08:14	05/13/16 09:27	10
Phenanthrene	<8.6		8.6	2.6	ug/L		05/05/16 08:14	05/13/16 09:27	10
Phenol	**40**	**J**	43	5.8	ug/L		05/05/16 08:14	05/13/16 09:27	10
Pyrene	<8.6		8.6	3.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4,5-Trichlorophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4,6-Trichlorophenol	<43		43	6.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzaldehyde	<170	*	170	130	ug/L		05/05/16 08:14	05/13/16 09:27	10
Caprolactam	<86		86	13	ug/L		05/05/16 08:14	05/13/16 09:27	10
Atrazine	<43		43	5.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
1,1'-Biphenyl	<43		43	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*91*		*30 - 123*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
Nitrobenzene-d5 (Surr)	*89*		*33 - 139*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
Phenol-d5 (Surr)	*60*		*20 - 100*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
Terphenyl-d14 (Surr)	*106*		*42 - 150*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*	*05/05/16 08:14*	*05/13/16 09:27*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043		0.043	0.0058	ug/L		05/02/16 16:20	05/03/16 16:13	1
alpha-BHC	<0.043		0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 16:13	1
alpha-Chlordane	<0.043		0.043	0.0048	ug/L		05/02/16 16:20	05/03/16 16:13	1
beta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDD	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDE	<0.043		0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDT	<0.043		0.043	0.0035	ug/L		05/02/16 16:20	05/03/16 16:13	1
delta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:13	1

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3

Date Collected: 04/29/16 08:47

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endosulfan I	<0.043		0.043	0.0045	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endrin aldehyde	<0.043		0.043	0.0089	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endrin ketone	<0.043		0.043	0.018	ug/L		05/02/16 16:20	05/03/16 16:13	1
gamma-BHC (Lindane)	<0.043		0.043	0.0061	ug/L		05/02/16 16:20	05/03/16 16:13	1
gamma-Chlordane	<0.043		0.043	0.0078	ug/L		05/02/16 16:20	05/03/16 16:13	1
Heptachlor	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	1
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	1
Methoxychlor	<0.087		0.087	0.025	ug/L		05/02/16 16:20	05/03/16 16:13	1
Toxaphene	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*40*		*30 - 143*	*05/02/16 16:20*	*05/03/16 16:13*	*1*
Tetrachloro-m-xylene	*110*		*30 - 120*	*05/02/16 16:20*	*05/03/16 16:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1232	**4.9**		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1260	<0.43		0.43	0.076	ug/L		05/02/16 16:20	05/03/16 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*30*		*30 - 127*	*05/02/16 16:20*	*05/03/16 17:36*	*1*
DCB Decachlorobiphenyl	*28*	*X*	*30 - 150*	*05/02/16 16:20*	*05/03/16 17:36*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.47**		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:12	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:12	1
Arsenic	**0.024**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:12	1
Barium	**0.29**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:12	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:12	1
Cadmium	**0.0022**		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:12	1
Calcium	**30**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:12	1
Chromium	**0.13**		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:12	1
Cobalt	**0.032**		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:12	1
Copper	**0.012**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:12	1
Iron	**2.0**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:12	1
Lead	**0.11**		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:12	1
Magnesium	**28**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:12	1
Manganese	**0.0099**	**J**	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:12	1
Nickel	**0.13**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:12	1
Potassium	**570**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Date Collected: 04/29/16 08:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-3

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0081	J B	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:12	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:12	1
Sodium	3100		100	43	mg/L		05/02/16 09:28	05/05/16 15:42	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:12	1
Vanadium	0.057		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:12	1
Zinc	0.17		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:12	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.38		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:18	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:18	1
Arsenic	0.024		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:18	1
Barium	0.31		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:18	1
Cadmium	0.0016	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:18	1
Calcium	27		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:18	1
Chromium	0.14		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:18	1
Cobalt	0.036		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:18	1
Copper	0.0090	J	0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:18	1
Iron	2.1		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:18	1
Lead	0.076		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:18	1
Magnesium	29		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:18	1
Manganese	0.0087	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:18	1
Nickel	0.14		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:18	1
Potassium	610		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:18	1
Selenium	0.0055	J B	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:18	1
Sodium	3300		100	43	mg/L		05/02/16 09:28	05/05/16 15:46	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:18	1
Vanadium	0.054		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:18	1
Zinc	0.12		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	7.9		1.0	0.22	mg/L			05/03/16 05:44	1
Sulfate	21		10	4.0	mg/L			05/02/16 09:05	2
Total Organic Carbon - Duplicates	360		20	4.6	mg/L			05/13/16 22:58	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	17		5.0	1.6	mg/L			05/03/16 11:47	1
Ammonia	530	B	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:12	200
Nitrogen, Nitrite	0.014	J	0.020	0.0032	mg/L			04/30/16 12:21	1
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:36	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**54**		5.0	1.7	ug/L			05/12/16 20:06	1
Benzene	**10**		0.50	0.15	ug/L			05/12/16 20:06	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 20:06	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 20:06	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 20:06	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 20:06	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 20:06	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 20:06	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 20:06	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 20:06	1
cis-1,2-Dichloroethene	**8.5**		1.0	0.41	ug/L			05/12/16 20:06	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 20:06	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 20:06	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 20:06	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 20:06	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,2-Dichlorobenzene	**6.8**		1.0	0.33	ug/L			05/12/16 20:06	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 20:06	1
1,4-Dichlorobenzene	**17**		1.0	0.36	ug/L			05/12/16 20:06	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 20:06	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 20:06	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 20:06	1
Ethylbenzene	**150**		0.50	0.18	ug/L			05/12/16 20:06	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 20:06	1
Isopropylbenzene	**9.6**		1.0	0.39	ug/L			05/12/16 20:06	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 20:06	1
Methylcyclohexane	**1.3**		1.0	0.32	ug/L			05/12/16 20:06	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 20:06	1
Methyl Ethyl Ketone	**16**		5.0	2.1	ug/L			05/12/16 20:06	1
methyl isobutyl ketone	**63**		5.0	2.2	ug/L			05/12/16 20:06	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 20:06	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 20:06	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 20:06	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 20:06	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 20:06	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 20:06	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 20:06	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 20:06	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 20:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 20:06	1
Vinyl chloride	**13**		0.50	0.20	ug/L			05/12/16 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*05/12/16 20:06*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Date Collected: 04/29/16 10:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*93*		*70 - 120*		*05/12/16 20:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*05/12/16 20:06*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 20:06*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**410**		2.5	0.76	ug/L			05/12/16 20:32	5
Xylenes, Total	**760**		5.0	1.1	ug/L			05/12/16 20:32	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*05/12/16 20:32*	*5*
Dibromofluoromethane	*95*		*70 - 120*		*05/12/16 20:32*	*5*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*05/12/16 20:32*	*5*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 20:32*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.4		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Acenaphthylene	<8.4		8.4	2.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Acetophenone	<42		42	5.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Anthracene	**2.8**	**J**	8.4	2.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[a]anthracene	<1.7		1.7	0.48	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[a]pyrene	<1.7		1.7	0.83	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[b]fluoranthene	<1.7		1.7	0.68	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[g,h,i]perylene	<8.4		8.4	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[k]fluoranthene	<1.7		1.7	0.54	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-ethylhexyl) phthalate	**290**		84	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Bromophenyl phenyl ether	<42		42	4.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Butyl benzyl phthalate	<17		17	4.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Carbazole	**4.8**	**J**	42	3.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chloroaniline	<84	*	84	17	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chloro-3-methylphenol	<84		84	19	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Chlorophenol	<42		42	4.7	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chlorophenyl phenyl ether	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Chrysene	<4.2		4.2	0.57	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dibenz(a,h)anthracene	<2.5		2.5	0.43	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dibenzofuran	<17		17	2.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
3,3'-Dichlorobenzidine	<42		42	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 09:54	10
Diethyl phthalate	<17		17	3.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dimethylphenol	**470**	*****	84	15	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dimethyl phthalate	<17		17	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Di-n-butyl phthalate	<42		42	6.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
4,6-Dinitro-2-methylphenol	<170		170	50	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dinitrophenol	<170		170	72	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dinitrotoluene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,6-Dinitrotoluene	<4.2		4.2	0.62	ug/L		05/05/16 08:14	05/13/16 09:54	10

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<84		84	8.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Fluoranthene	**8.8**		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Fluorene	**3.2**	**J**	8.4	2.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorobenzene	<4.2		4.2	0.67	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorobutadiene	<42		42	4.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorocyclopentadiene	<170		170	54	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachloroethane	<42		42	5.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.63	ug/L		05/05/16 08:14	05/13/16 09:54	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Methylnaphthalene	**9.4**		4.2	0.55	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Methylphenol	**78**		17	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
3 & 4 Methylphenol	**280**		17	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Naphthalene	**48**		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Nitroaniline	<42		42	11	ug/L		05/05/16 08:14	05/13/16 09:54	10
3-Nitroaniline	<84		84	15	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Nitroaniline	<84		84	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
Nitrobenzene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Nitrophenol	<84		84	21	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Nitrophenol	<170		170	63	ug/L		05/05/16 08:14	05/13/16 09:54	10
N-Nitrosodi-n-propylamine	<4.2		4.2	1.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
N-Nitrosodiphenylamine	<8.4		8.4	3.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,2'-oxybis[1-chloropropane]	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
Pentachlorophenol	<170		170	33	ug/L		05/05/16 08:14	05/13/16 09:54	10
Phenanthrene	**14**		8.4	2.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Phenol	<42		42	5.7	ug/L		05/05/16 08:14	05/13/16 09:54	10
Pyrene	**8.0**	**J**	8.4	3.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4,5-Trichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4,6-Trichlorophenol	<42		42	6.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzaldehyde	<170	*	170	130	ug/L		05/05/16 08:14	05/13/16 09:54	10
Caprolactam	<84		84	13	ug/L		05/05/16 08:14	05/13/16 09:54	10
Atrazine	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
1,1'-Biphenyl	<42		42	3.1	ug/L		05/05/16 08:14	05/13/16 09:54	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*30 - 123*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
2-Fluorophenol (Surr)	*64*		*30 - 110*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
Phenol-d5 (Surr)	*63*		*20 - 100*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*	*05/05/16 08:14*	*05/13/16 09:54*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0055	ug/L		05/02/16 16:20	05/03/16 16:33	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		05/02/16 16:20	05/03/16 16:33	1
alpha-Chlordane	<0.041		0.041	0.0045	ug/L		05/02/16 16:20	05/03/16 16:33	1
beta-BHC	<0.041		0.041	0.010	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		05/02/16 16:20	05/03/16 16:33	1

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.041		0.041	0.011	ug/L		05/02/16 16:20	05/03/16 16:33	1
Dieldrin	<0.041		0.041	0.013	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin	<0.041		0.041	0.015	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin ketone	<0.041		0.041	0.017	ug/L		05/02/16 16:20	05/03/16 16:33	1
gamma-BHC (Lindane)	<0.041		0.041	0.0058	ug/L		05/02/16 16:20	05/03/16 16:33	1
gamma-Chlordane	<0.041		0.041	0.0074	ug/L		05/02/16 16:20	05/03/16 16:33	1
Heptachlor	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 16:33	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 16:33	1
Methoxychlor	<0.082		0.082	0.024	ug/L		05/02/16 16:20	05/03/16 16:33	1
Toxaphene	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*9*	*X*	*30 - 143*	*05/02/16 16:20*	*05/03/16 16:33*	*1*
Tetrachloro-m-xylene	*93*		*30 - 120*	*05/02/16 16:20*	*05/03/16 16:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.069	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1221	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1232	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1242	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1248	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1254	**1.7**		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1260	<0.41		0.41	0.072	ug/L		05/02/16 16:20	05/03/16 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*05/02/16 16:20*	*05/03/16 17:52*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*05/02/16 16:20*	*05/03/16 17:52*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.9**		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:23	1
Antimony	**0.015**	**J**	0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:23	1
Arsenic	**0.048**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:23	1
Barium	**0.54**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:23	1
Beryllium	**0.0011**	**J**	0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:23	1
Cadmium	**0.0080**		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:23	1
Calcium	**11**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:23	1
Chromium	**0.48**		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:23	1
Cobalt	**0.044**		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:23	1
Copper	**0.082**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:23	1
Iron	**4.7**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:23	1
Lead	**0.68**		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:23	1
Magnesium	**22**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:23	1
Manganese	**0.017**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:23	1
Nickel	**0.16**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:23	1

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4
Date Collected: 04/29/16 10:47
Matrix: Water
Date Received: 04/30/16 07:34

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	670		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:23	1
Selenium	0.0091	J B	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:23	1
Silver	0.0026	J	0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:23	1
Sodium	3600		100	43	mg/L		05/02/16 09:28	05/05/16 15:51	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:23	1
Vanadium	0.078		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:23	1
Zinc	1.1		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:23	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.4		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:28	1
Antimony	0.011	J	0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:28	1
Arsenic	0.040		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:28	1
Barium	0.47		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:28	1
Beryllium	0.00085	J	0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:28	1
Cadmium	0.0057		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:28	1
Calcium	10		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:28	1
Chromium	0.43		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:28	1
Cobalt	0.041		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:28	1
Copper	0.052		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:28	1
Iron	4.1		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:28	1
Lead	0.39		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:28	1
Magnesium	21		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:28	1
Manganese	0.014		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:28	1
Nickel	0.15		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:28	1
Potassium	620		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:28	1
Selenium	0.0091	J B	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:28	1
Silver	0.0016	J	0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:28	1
Sodium	3400		100	43	mg/L		05/02/16 09:28	05/05/16 15:55	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:28	1
Vanadium	0.068		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:28	1
Zinc	0.67		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0010		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:35	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00063		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	8.8		1.0	0.22	mg/L			05/03/16 05:47	1
Sulfate	240		100	40	mg/L			05/05/16 07:46	20
Total Organic Carbon - Duplicates	480		20	4.6	mg/L			05/13/16 23:18	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	17		5.0	1.6	mg/L			05/03/16 11:48	1
Ammonia	670	B	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:14	200
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47
Matrix: Water
Date Received: 04/30/16 07:34

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:38	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.8**		5.0	1.7	ug/L			05/12/16 21:00	1
Benzene	**1.6**		0.50	0.15	ug/L			05/12/16 21:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 21:00	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 21:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 21:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 21:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 21:00	1
Chlorobenzene	**15**		1.0	0.39	ug/L			05/12/16 21:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 21:00	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 21:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 21:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 21:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 21:00	1
Cyclohexane	**1.5**		1.0	0.49	ug/L			05/12/16 21:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 21:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 21:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 21:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 21:00	1
1,4-Dichlorobenzene	**1.7**		1.0	0.36	ug/L			05/12/16 21:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 21:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 21:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 21:00	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/12/16 21:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 21:00	1
Isopropylbenzene	**3.5**		1.0	0.39	ug/L			05/12/16 21:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 21:00	1
Methylcyclohexane	**1.3**		1.0	0.32	ug/L			05/12/16 21:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 21:00	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/12/16 21:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/12/16 21:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 21:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 21:00	1
Toluene	**0.37**	**J**	0.50	0.15	ug/L			05/12/16 21:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 21:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 21:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 21:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 21:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 21:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 21:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 21:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 21:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 21:00	1
Xylenes, Total	**0.93**	**J**	1.0	0.22	ug/L			05/12/16 21:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27
Matrix: Water
Date Received: 04/30/16 07:34

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*05/12/16 21:00*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*05/12/16 21:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*		*05/12/16 21:00*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 21:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.97**		0.85	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
Acenaphthylene	<0.85		0.85	0.23	ug/L		05/05/16 08:14	05/14/16 02:12	1
Acetophenone	<4.2		4.2	0.56	ug/L		05/05/16 08:14	05/14/16 02:12	1
Anthracene	<0.85		0.85	0.28	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[a]anthracene	<0.17		0.17	0.048	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[a]pyrene	<0.17		0.17	0.084	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[b]fluoranthene	<0.17		0.17	0.068	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[g,h,i]perylene	<0.85		0.85	0.32	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[k]fluoranthene	<0.17		0.17	0.054	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-chloroethyl)ether	<1.7		1.7	0.25	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-ethylhexyl) phthalate	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Bromophenyl phenyl ether	<4.2		4.2	0.46	ug/L		05/05/16 08:14	05/14/16 02:12	1
Butyl benzyl phthalate	<1.7		1.7	0.41	ug/L		05/05/16 08:14	05/14/16 02:12	1
Carbazole	<4.2		4.2	0.30	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chloroaniline	<8.5	*	8.5	1.7	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chloro-3-methylphenol	<8.5		8.5	2.0	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Chloronaphthalene	<1.7		1.7	0.20	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Chlorophenol	<4.2		4.2	0.47	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chlorophenyl phenyl ether	<4.2		4.2	0.54	ug/L		05/05/16 08:14	05/14/16 02:12	1
Chrysene	<0.42		0.42	0.058	ug/L		05/05/16 08:14	05/14/16 02:12	1
Dibenz(a,h)anthracene	<0.25		0.25	0.043	ug/L		05/05/16 08:14	05/14/16 02:12	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		05/05/16 08:14	05/14/16 02:12	1
3,3'-Dichlorobenzidine	<4.2		4.2	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/14/16 02:12	1
Diethyl phthalate	<1.7		1.7	0.31	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dimethylphenol	<8.5	*	8.5	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
Dimethyl phthalate	<1.7		1.7	0.27	ug/L		05/05/16 08:14	05/14/16 02:12	1
Di-n-butyl phthalate	<4.2		4.2	0.62	ug/L		05/05/16 08:14	05/14/16 02:12	1
4,6-Dinitro-2-methylphenol	<17		17	5.0	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dinitrophenol	<17		17	7.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dinitrotoluene	<0.85		0.85	0.21	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,6-Dinitrotoluene	<0.42		0.42	0.063	ug/L		05/05/16 08:14	05/14/16 02:12	1
Di-n-octyl phthalate	<8.5		8.5	0.89	ug/L		05/05/16 08:14	05/14/16 02:12	1
Fluoranthene	<0.85		0.85	0.39	ug/L		05/05/16 08:14	05/14/16 02:12	1
Fluorene	**0.46**	**J**	0.85	0.21	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachlorobenzene	<0.42		0.42	0.067	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachlorobutadiene	<4.2		4.2	0.44	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachlorocyclopentadiene	<17		17	5.4	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachloroethane	<4.2		4.2	0.51	ug/L		05/05/16 08:14	05/14/16 02:12	1
Indeno[1,2,3-cd]pyrene	<0.17		0.17	0.063	ug/L		05/05/16 08:14	05/14/16 02:12	1
Isophorone	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Methylnaphthalene	**2.6**		0.42	0.055	ug/L		05/05/16 08:14	05/14/16 02:12	1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.7		1.7	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
3 & 4 Methylphenol	**4.5**		1.7	0.38	ug/L		05/05/16 08:14	05/14/16 02:12	1
Naphthalene	**0.36**	**J**	0.85	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Nitroaniline	<4.2		4.2	1.1	ug/L		05/05/16 08:14	05/14/16 02:12	1
3-Nitroaniline	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Nitroaniline	<8.5		8.5	1.4	ug/L		05/05/16 08:14	05/14/16 02:12	1
Nitrobenzene	<0.85		0.85	0.38	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Nitrophenol	<8.5		8.5	2.1	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Nitrophenol	<17		17	6.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
N-Nitrosodi-n-propylamine	<0.42		0.42	0.13	ug/L		05/05/16 08:14	05/14/16 02:12	1
N-Nitrosodiphenylamine	<0.85		0.85	0.31	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/14/16 02:12	1
Pentachlorophenol	<17		17	3.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
Phenanthrene	**0.48**	**J**	0.85	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
Phenol	<4.2		4.2	0.57	ug/L		05/05/16 08:14	05/14/16 02:12	1
Pyrene	<0.85		0.85	0.36	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4,5-Trichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4,6-Trichlorophenol	<4.2		4.2	0.61	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzaldehyde	<17	*	17	13	ug/L		05/05/16 08:14	05/14/16 02:12	1
Caprolactam	<8.5		8.5	1.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
Atrazine	<4.2		4.2	0.53	ug/L		05/05/16 08:14	05/14/16 02:12	1
1,1'-Biphenyl	<4.2		4.2	0.31	ug/L		05/05/16 08:14	05/14/16 02:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*30 - 123*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
2-Fluorophenol (Surr)	*55*		*30 - 110*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
Nitrobenzene-d5 (Surr)	*58*		*33 - 139*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
Phenol-d5 (Surr)	*45*		*20 - 100*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*05/05/16 08:14*	*05/14/16 02:12*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043		0.043	0.0057	ug/L		05/02/16 16:20	05/03/16 16:52	1
alpha-BHC	<0.043		0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 16:52	1
alpha-Chlordane	<0.043		0.043	0.0047	ug/L		05/02/16 16:20	05/03/16 16:52	1
beta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:52	1
4,4'-DDD	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:52	1
4,4'-DDE	<0.043		0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 16:52	1
4,4'-DDT	<0.043		0.043	0.0034	ug/L		05/02/16 16:20	05/03/16 16:52	1
delta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:52	1
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan I	<0.043		0.043	0.0044	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endrin aldehyde	<0.043		0.043	0.0088	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endrin ketone	<0.043		0.043	0.018	ug/L		05/02/16 16:20	05/03/16 16:52	1
gamma-BHC (Lindane)	<0.043		0.043	0.0060	ug/L		05/02/16 16:20	05/03/16 16:52	1
gamma-Chlordane	<0.043		0.043	0.0078	ug/L		05/02/16 16:20	05/03/16 16:52	1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:52	1
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:52	1
Methoxychlor	<0.086		0.086	0.025	ug/L		05/02/16 16:20	05/03/16 16:52	1
Toxaphene	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*30 - 143*	*05/02/16 16:20*	*05/03/16 16:52*	*1*
Tetrachloro-m-xylene	*69*		*30 - 120*	*05/02/16 16:20*	*05/03/16 16:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.43		0.43	0.072	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1232	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1260	<0.43		0.43	0.075	ug/L		05/02/16 16:20	05/03/16 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*65*		*30 - 127*	*05/02/16 16:20*	*05/03/16 18:08*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 150*	*05/02/16 16:20*	*05/03/16 18:08*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:34	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:34	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:34	1
Barium	**0.79**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:34	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:34	1
Calcium	**130**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:34	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:34	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:34	1
Iron	**27**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:34	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:34	1
Magnesium	**88**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:34	1
Manganese	**0.19**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:34	1
Nickel	**0.0041**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:34	1
Potassium	**79**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:34	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:34	1
Sodium	**200**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:34	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:34	1
Zinc	<0.020		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:34	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27
Matrix: Water
Date Received: 04/30/16 07:34

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:46	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:46	1
Barium	**0.83**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:46	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:46	1
Cadmium	**0.0016**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:46	1
Calcium	**130**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:46	1
Chromium	**0.0033**	**J**	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:46	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:46	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:46	1
Iron	**28**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:46	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:46	1
Magnesium	**91**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:46	1
Manganese	**0.19**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:46	1
Nickel	**0.0044**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:46	1
Potassium	**81**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:46	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:46	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:46	1
Sodium	**210**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:46	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:46	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:46	1
Zinc	<0.020		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.1**		1.0	0.22	mg/L			05/03/16 05:50	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:21	1
Total Organic Carbon - Duplicates	**25**		1.0	0.23	mg/L			05/13/16 23:39	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**52**		5.0	1.6	mg/L			05/03/16 11:50	1
Ammonia	**79**	**B**	5.0	1.1	mg/L		05/11/16 18:12	05/12/16 19:28	25
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:22	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.2**		5.0	1.7	ug/L			05/12/16 21:26	1
Benzene	<0.50		0.50	0.15	ug/L			05/12/16 21:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 21:26	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 21:26	1
Bromomethane	<2.0	F2	2.0	0.80	ug/L			05/12/16 21:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 21:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 21:26	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
Chloroethane	<1.0	F2	1.0	0.51	ug/L			05/12/16 21:26	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 21:26	1
Chloromethane	<1.0	F2	1.0	0.32	ug/L			05/12/16 21:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 21:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 21:26	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 21:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 21:26	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 21:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 21:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 21:26	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/12/16 21:26	1
Dichlorodifluoromethane	<2.0	F2	2.0	0.67	ug/L			05/12/16 21:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 21:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 21:26	1
Ethylbenzene	**0.33**	**J**	0.50	0.18	ug/L			05/12/16 21:26	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 21:26	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 21:26	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 21:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 21:26	1
Methyl Ethyl Ketone	<5.0	F2	5.0	2.1	ug/L			05/12/16 21:26	1
methyl isobutyl ketone	<5.0	F2	5.0	2.2	ug/L			05/12/16 21:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 21:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 21:26	1
Toluene	<0.50		0.50	0.15	ug/L			05/12/16 21:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 21:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 21:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 21:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 21:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 21:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 21:26	1
Trichlorofluoromethane	<1.0	F2	1.0	0.43	ug/L			05/12/16 21:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 21:26	1
Vinyl chloride	<0.50	F2	0.50	0.20	ug/L			05/12/16 21:26	1
Xylenes, Total	**1.2**		1.0	0.22	ug/L			05/12/16 21:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02
Matrix: Water
Date Received: 04/30/16 07:34

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*05/12/16 21:26*	*1*
Dibromofluoromethane	*98*		*70 - 120*		*05/12/16 21:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*		*05/12/16 21:26*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 21:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.85		0.85	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
Acenaphthylene	<0.85		0.85	0.23	ug/L		05/05/16 08:14	05/13/16 03:06	1
Acetophenone	<4.3		4.3	0.56	ug/L		05/05/16 08:14	05/13/16 03:06	1
Anthracene	<0.85		0.85	0.28	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[a]anthracene	<0.17		0.17	0.048	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[a]pyrene	<0.17		0.17	0.084	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[b]fluoranthene	<0.17		0.17	0.069	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[g,h,i]perylene	<0.85		0.85	0.32	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[k]fluoranthene	<0.17		0.17	0.054	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-chloroethyl)ether	<1.7		1.7	0.25	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-ethylhexyl) phthalate	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Bromophenyl phenyl ether	<4.3		4.3	0.46	ug/L		05/05/16 08:14	05/13/16 03:06	1
Butyl benzyl phthalate	<1.7		1.7	0.41	ug/L		05/05/16 08:14	05/13/16 03:06	1
Carbazole	<4.3		4.3	0.30	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chloroaniline	<8.5	*	8.5	1.7	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chloro-3-methylphenol	<8.5		8.5	2.0	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Chloronaphthalene	<1.7		1.7	0.20	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Chlorophenol	<4.3		4.3	0.48	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chlorophenyl phenyl ether	<4.3		4.3	0.54	ug/L		05/05/16 08:14	05/13/16 03:06	1
Chrysene	<0.43		0.43	0.058	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dibenz(a,h)anthracene	<0.26		0.26	0.043	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		05/05/16 08:14	05/13/16 03:06	1
3,3'-Dichlorobenzidine	<4.3		4.3	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/13/16 03:06	1
Diethyl phthalate	<1.7		1.7	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dimethylphenol	<8.5	*	8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dimethyl phthalate	<1.7		1.7	0.27	ug/L		05/05/16 08:14	05/13/16 03:06	1
Di-n-butyl phthalate	<4.3		4.3	0.62	ug/L		05/05/16 08:14	05/13/16 03:06	1
4,6-Dinitro-2-methylphenol	<17		17	5.0	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dinitrophenol	<17		17	7.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dinitrotoluene	<0.85		0.85	0.21	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,6-Dinitrotoluene	<0.43		0.43	0.063	ug/L		05/05/16 08:14	05/13/16 03:06	1
Di-n-octyl phthalate	<8.5		8.5	0.89	ug/L		05/05/16 08:14	05/13/16 03:06	1
Fluoranthene	<0.85		0.85	0.39	ug/L		05/05/16 08:14	05/13/16 03:06	1
Fluorene	<0.85		0.85	0.21	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorobenzene	<0.43		0.43	0.067	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorobutadiene	<4.3		4.3	0.44	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorocyclopentadiene	<17		17	5.4	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachloroethane	<4.3		4.3	0.51	ug/L		05/05/16 08:14	05/13/16 03:06	1
Indeno[1,2,3-cd]pyrene	<0.17		0.17	0.064	ug/L		05/05/16 08:14	05/13/16 03:06	1
Isophorone	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Methylnaphthalene	**0.14**	**J**	0.43	0.055	ug/L		05/05/16 08:14	05/13/16 03:06	1

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.7		1.7	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
3 & 4 Methylphenol	**0.93**	**J**	1.7	0.38	ug/L		05/05/16 08:14	05/13/16 03:06	1
Naphthalene	<0.85		0.85	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Nitroaniline	<4.3		4.3	1.1	ug/L		05/05/16 08:14	05/13/16 03:06	1
3-Nitroaniline	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Nitroaniline	<8.5		8.5	1.4	ug/L		05/05/16 08:14	05/13/16 03:06	1
Nitrobenzene	<0.85		0.85	0.38	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Nitrophenol	<8.5		8.5	2.1	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Nitrophenol	<17		17	6.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
N-Nitrosodi-n-propylamine	<0.43		0.43	0.13	ug/L		05/05/16 08:14	05/13/16 03:06	1
N-Nitrosodiphenylamine	<0.85		0.85	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/13/16 03:06	1
Pentachlorophenol	<17		17	3.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
Phenanthrene	<0.85		0.85	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
Phenol	<4.3		4.3	0.57	ug/L		05/05/16 08:14	05/13/16 03:06	1
Pyrene	<0.85		0.85	0.36	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4,5-Trichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4,6-Trichlorophenol	<4.3		4.3	0.61	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzaldehyde	<17	*	17	13	ug/L		05/05/16 08:14	05/13/16 03:06	1
Caprolactam	<8.5		8.5	1.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
Atrazine	<4.3		4.3	0.53	ug/L		05/05/16 08:14	05/13/16 03:06	1
1,1'-Biphenyl	<4.3		4.3	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
2-Fluorophenol (Surr)	*67*		*30 - 110*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
Phenol-d5 (Surr)	*53*		*20 - 100*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*30 - 150*	*05/05/16 08:14*	*05/13/16 03:06*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.042		0.042	0.0055	ug/L		05/02/16 16:20	05/03/16 17:11	1
alpha-BHC	<0.042		0.042	0.0027	ug/L		05/02/16 16:20	05/03/16 17:11	1
alpha-Chlordane	<0.042		0.042	0.0046	ug/L		05/02/16 16:20	05/03/16 17:11	1
beta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 17:11	1
4,4'-DDD	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 17:11	1
4,4'-DDE	<0.042		0.042	0.0040	ug/L		05/02/16 16:20	05/03/16 17:11	1
4,4'-DDT	<0.042		0.042	0.0033	ug/L		05/02/16 16:20	05/03/16 17:11	1
delta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 17:11	1
Dieldrin	<0.042		0.042	0.013	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endosulfan I	<0.042		0.042	0.0043	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endosulfan II	<0.042		0.042	0.0029	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endosulfan sulfate	<0.042		0.042	0.012	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endrin	<0.042		0.042	0.015	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endrin aldehyde	<0.042		0.042	0.0086	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endrin ketone	<0.042		0.042	0.018	ug/L		05/02/16 16:20	05/03/16 17:11	1
gamma-BHC (Lindane)	<0.042		0.042	0.0058	ug/L		05/02/16 16:20	05/03/16 17:11	1
gamma-Chlordane	<0.042		0.042	0.0075	ug/L		05/02/16 16:20	05/03/16 17:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 17:11	1
Heptachlor epoxide	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 17:11	1
Methoxychlor	<0.083		0.083	0.024	ug/L		05/02/16 16:20	05/03/16 17:11	1
Toxaphene	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*05/02/16 16:20*	*05/03/16 17:11*	*1*
Tetrachloro-m-xylene	*67*		*30 - 120*	*05/02/16 16:20*	*05/03/16 17:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.42		0.42	0.070	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1221	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1232	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1242	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1248	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1254	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1260	<0.42		0.42	0.073	ug/L		05/02/16 16:20	05/03/16 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*77*		*30 - 127*	*05/02/16 16:20*	*05/03/16 18:23*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*05/02/16 16:20*	*05/03/16 18:23*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:51	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:51	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:51	1
Barium	**0.65**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:51	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:51	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:51	1
Calcium	**110**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:51	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:51	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:51	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:51	1
Iron	**10**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:51	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:51	1
Magnesium	**91**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:51	1
Manganese	**0.16**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:51	1
Nickel	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:51	1
Potassium	**38**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:51	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:51	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:51	1
Sodium	**240**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:51	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:51	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:51	1
Zinc	<0.020		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:51	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Date Collected: 04/29/16 14:02
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-6

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:57	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:57	1
Barium	**0.63**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:57	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:57	1
Calcium	**110**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:57	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:57	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:57	1
Iron	**10**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:57	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:57	1
Magnesium	**90**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:57	1
Manganese	**0.16**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:57	1
Nickel	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:57	1
Potassium	**37**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:57	1
Selenium	**0.0065**	**J B**	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:57	1
Sodium	**230**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:57	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:57	1
Zinc	<0.020		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.30**	**J**	1.0	0.22	mg/L			05/03/16 05:52	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:22	1
Total Organic Carbon - Duplicates	**13**		1.0	0.23	mg/L			05/13/16 23:59	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**23**		5.0	1.6	mg/L			05/03/16 11:52	1
Ammonia	**41**	**B**	2.0	0.43	mg/L		05/11/16 18:12	05/12/16 19:31	10
Nitrogen, Nitrite	**0.034**		0.020	0.0032	mg/L			04/30/16 12:23	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		5.0	1.7	ug/L			05/12/16 21:52	1
Benzene	**7.0**		0.50	0.15	ug/L			05/12/16 21:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 21:52	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 21:52	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 21:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 21:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 21:52	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 21:52	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 21:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 21:52	1
cis-1,2-Dichloroethene	**4.5**		1.0	0.41	ug/L			05/12/16 21:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 21:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 21:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 21:52	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 21:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
1,2-Dichlorobenzene	**2.5**		1.0	0.33	ug/L			05/12/16 21:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 21:52	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			05/12/16 21:52	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 21:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 21:52	1
1,2-Dichloroethane	**1.4**		1.0	0.39	ug/L			05/12/16 21:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 21:52	1
Ethylbenzene	**97**		0.50	0.18	ug/L			05/12/16 21:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 21:52	1
Isopropylbenzene	**6.6**		1.0	0.39	ug/L			05/12/16 21:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 21:52	1
Methylcyclohexane	**1.1**		1.0	0.32	ug/L			05/12/16 21:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 21:52	1
Methyl Ethyl Ketone	**13**		5.0	2.1	ug/L			05/12/16 21:52	1
methyl isobutyl ketone	**27**		5.0	2.2	ug/L			05/12/16 21:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 21:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 21:52	1
Toluene	**150**		0.50	0.15	ug/L			05/12/16 21:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 21:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 21:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 21:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 21:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 21:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 21:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 21:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 21:52	1
Vinyl chloride	**3.7**		0.50	0.20	ug/L			05/12/16 21:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016)

Date Collected: 04/29/16 00:00
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-7

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*05/12/16 21:52*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*05/12/16 21:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*05/12/16 21:52*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/12/16 21:52*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**440**		5.0	1.1	ug/L			05/12/16 22:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*05/12/16 22:18*	*5*
Dibromofluoromethane	*99*		*70 - 120*		*05/12/16 22:18*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*05/12/16 22:18*	*5*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/12/16 22:18*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.4		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Acenaphthylene	<8.4		8.4	2.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
Acetophenone	<42		42	5.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Anthracene	<8.4		8.4	2.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[a]anthracene	<1.7		1.7	0.48	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[a]pyrene	<1.7		1.7	0.83	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[b]fluoranthene	<1.7		1.7	0.68	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[g,h,i]perylene	<8.4		8.4	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[k]fluoranthene	<1.7		1.7	0.54	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-ethylhexyl) phthalate	**88**		84	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Bromophenyl phenyl ether	<42		42	4.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Butyl benzyl phthalate	<17		17	4.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Carbazole	<42		42	3.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chloroaniline	<84	*	84	17	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chloro-3-methylphenol	<84		84	19	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Chlorophenol	<42		42	4.7	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chlorophenyl phenyl ether	<42		42	5.4	ug/L		05/05/16 08:14	05/13/16 10:21	10
Chrysene	<4.2		4.2	0.58	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dibenz(a,h)anthracene	<2.5		2.5	0.43	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dibenzofuran	<17		17	2.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
3,3'-Dichlorobenzidine	<42		42	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 10:21	10
Diethyl phthalate	<17		17	3.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dimethylphenol	**110**	*	84	15	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dimethyl phthalate	<17		17	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Di-n-butyl phthalate	<42		42	6.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
4,6-Dinitro-2-methylphenol	<170		170	50	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dinitrophenol	<170		170	72	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dinitrotoluene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,6-Dinitrotoluene	<4.2		4.2	0.62	ug/L		05/05/16 08:14	05/13/16 10:21	10
Di-n-octyl phthalate	<84		84	8.9	ug/L		05/05/16 08:14	05/13/16 10:21	10

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Fluorene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorobenzene	<4.2		4.2	0.67	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorobutadiene	<42		42	4.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorocyclopentadiene	<170		170	54	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachloroethane	<42		42	5.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.63	ug/L		05/05/16 08:14	05/13/16 10:21	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Methylnaphthalene	**6.6**		4.2	0.55	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Methylphenol	**19**		17	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
3 & 4 Methylphenol	**90**		17	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Naphthalene	**16**		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Nitroaniline	<42		42	11	ug/L		05/05/16 08:14	05/13/16 10:21	10
3-Nitroaniline	<84		84	15	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Nitroaniline	<84		84	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
Nitrobenzene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Nitrophenol	<84		84	21	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Nitrophenol	<170		170	63	ug/L		05/05/16 08:14	05/13/16 10:21	10
N-Nitrosodi-n-propylamine	<4.2		4.2	1.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
N-Nitrosodiphenylamine	<8.4		8.4	3.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,2'-oxybis[1-chloropropane]	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
Pentachlorophenol	<170		170	33	ug/L		05/05/16 08:14	05/13/16 10:21	10
Phenanthrene	<8.4		8.4	2.5	ug/L		05/05/16 08:14	05/13/16 10:21	10
Phenol	**38**	**J**	42	5.7	ug/L		05/05/16 08:14	05/13/16 10:21	10
Pyrene	<8.4		8.4	3.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4,5-Trichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4,6-Trichlorophenol	<42		42	6.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzaldehyde	<170	*	170	130	ug/L		05/05/16 08:14	05/13/16 10:21	10
Caprolactam	<84		84	13	ug/L		05/05/16 08:14	05/13/16 10:21	10
Atrazine	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
1,1'-Biphenyl	<42		42	3.1	ug/L		05/05/16 08:14	05/13/16 10:21	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*99*		*30 - 123*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
2-Fluorophenol (Surr)	*67*		*30 - 110*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
Nitrobenzene-d5 (Surr)	*88*		*33 - 139*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
Phenol-d5 (Surr)	*60*		*20 - 100*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
Terphenyl-d14 (Surr)	*113*		*42 - 150*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
2,4,6-Tribromophenol (Surr)	*111*		*30 - 150*	*05/05/16 08:14*	*05/13/16 10:21*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043		0.043	0.0058	ug/L		05/02/16 16:20	05/03/16 17:30	1
alpha-BHC	<0.043		0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 17:30	1
alpha-Chlordane	<0.043		0.043	0.0048	ug/L		05/02/16 16:20	05/03/16 17:30	1
beta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDD	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDE	<0.043		0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDT	<0.043		0.043	0.0035	ug/L		05/02/16 16:20	05/03/16 17:30	1
delta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 17:30	1

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endosulfan I	<0.043		0.043	0.0045	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endrin aldehyde	<0.043		0.043	0.0089	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endrin ketone	<0.043		0.043	0.018	ug/L		05/02/16 16:20	05/03/16 17:30	1
gamma-BHC (Lindane)	<0.043		0.043	0.0061	ug/L		05/02/16 16:20	05/03/16 17:30	1
gamma-Chlordane	<0.043		0.043	0.0078	ug/L		05/02/16 16:20	05/03/16 17:30	1
Heptachlor	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 17:30	1
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 17:30	1
Methoxychlor	<0.087		0.087	0.025	ug/L		05/02/16 16:20	05/03/16 17:30	1
Toxaphene	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*35*		*30 - 143*	*05/02/16 16:20*	*05/03/16 17:30*	*1*
Tetrachloro-m-xylene	*88*		*30 - 120*	*05/02/16 16:20*	*05/03/16 17:30*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1232	**4.0**		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1260	<0.43		0.43	0.076	ug/L		05/02/16 16:20	05/03/16 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*33*		*30 - 127*	*05/02/16 16:20*	*05/03/16 18:39*	*1*
DCB Decachlorobiphenyl	*30*		*30 - 150*	*05/02/16 16:20*	*05/03/16 18:39*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.51**		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 20:02	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 20:02	1
Arsenic	**0.023**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:02	1
Barium	**0.31**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 20:02	1
Cadmium	**0.0022**		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 20:02	1
Calcium	**28**		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 20:02	1
Chromium	**0.14**		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 20:02	1
Cobalt	**0.036**		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 20:02	1
Copper	**0.013**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:02	1
Iron	**2.2**		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 20:02	1
Lead	**0.13**		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 20:02	1
Magnesium	**29**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 20:02	1
Manganese	**0.0093**	**J**	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 20:02	1
Nickel	**0.14**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:02	1
Potassium	**610**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 20:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7
Date Collected: 04/29/16 00:00
Matrix: Water
Date Received: 04/30/16 07:34

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0093	J B	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 20:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 20:02	1
Sodium	3300		100	43	mg/L		05/02/16 09:28	05/05/16 15:59	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 20:02	1
Vanadium	0.057		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 20:02	1
Zinc	0.18		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 20:02	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.27		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 20:07	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 20:07	1
Arsenic	0.021		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:07	1
Barium	0.29		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 20:07	1
Cadmium	0.0014	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 20:07	1
Calcium	26		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 20:07	1
Chromium	0.13		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 20:07	1
Cobalt	0.034		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 20:07	1
Copper	0.0048	J	0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:07	1
Iron	2.0		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 20:07	1
Lead	0.032		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 20:07	1
Magnesium	28		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 20:07	1
Manganese	0.0084	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 20:07	1
Nickel	0.14		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:07	1
Potassium	590		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 20:07	1
Selenium	0.0078	J B	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 20:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 20:07	1
Sodium	3200		100	43	mg/L		05/02/16 09:28	05/05/16 16:03	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 20:07	1
Vanadium	0.050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 20:07	1
Zinc	0.060		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 20:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:50	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	4.5		1.0	0.22	mg/L			05/03/16 05:55	1
Sulfate	63		20	8.0	mg/L			05/06/16 09:06	4
Total Organic Carbon - Duplicates	350		20	4.6	mg/L			05/14/16 00:19	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	19		5.0	1.6	mg/L			05/03/16 11:53	1
Ammonia	770	B	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:17	200
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:23	1
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:44	2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
*	LCS or LCSD is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
V	Serial Dilution exceeds the control limits
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

GC/MS VOA

Analysis Batch: 335053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	8260B	
500-110948-1 - DL	MW-2-GW-04282016	Total/NA	Water	8260B	
500-110948-1 MS	MW-2-GW-04282016	Total/NA	Water	8260B	
500-110948-1 MSD	MW-2-GW-04282016	Total/NA	Water	8260B	
LCS 500-335053/4	Lab Control Sample	Total/NA	Water	8260B	
MB 500-335053/6	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 335112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-2	MW-10-GW-04292016	Total/NA	Water	8260B	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	8260B	
500-110948-3 - DL	MW-6-GW-04292016	Total/NA	Water	8260B	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	8260B	
500-110948-4 - DL	MW-7-GW-04292016	Total/NA	Water	8260B	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	8260B	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	8260B	
500-110948-6 MS	MW-8-GW-04292016	Total/NA	Water	8260B	
500-110948-6 MSD	MW-8-GW-04292016	Total/NA	Water	8260B	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	8260B	
500-110948-7 - DL	DUP-2 (04292016)	Total/NA	Water	8260B	
LCS 500-335112/32	Lab Control Sample	Total/NA	Water	8260B	
MB 500-335112/6	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 334095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	3510C	
500-110948-1 - DL	MW-2-GW-04282016	Total/NA	Water	3510C	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	3510C	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	3510C	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	3510C	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	3510C	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	3510C	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	3510C	
LCS 500-334095/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-334095/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 500-334095/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 335266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1 - DL	MW-2-GW-04282016	Total/NA	Water	8270D	334095
500-110948-1	MW-2-GW-04282016	Total/NA	Water	8270D	334095
500-110948-2	MW-10-GW-04292016	Total/NA	Water	8270D	334095
500-110948-3	MW-6-GW-04292016	Total/NA	Water	8270D	334095
500-110948-4	MW-7-GW-04292016	Total/NA	Water	8270D	334095
500-110948-6	MW-8-GW-04292016	Total/NA	Water	8270D	334095
500-110948-7	DUP-2 (04292016)	Total/NA	Water	8270D	334095

GC/MS Semi VOA (Continued)

Analysis Batch: 335398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-5	MW-9-GW-04292016	Total/NA	Water	8270D	334095
LCS 500-334095/2-A	Lab Control Sample	Total/NA	Water	8270D	334095
LCS 500-334095/2-A	Lab Control Sample	Total/NA	Water	8270D	334095
LCSD 500-334095/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	334095
LCSD 500-334095/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	334095
MB 500-334095/1-A	Method Blank	Total/NA	Water	8270D	334095

GC Semi VOA

Prep Batch: 333645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	3510C	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	3510C	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	3510C	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	3510C	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	3510C	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	3510C	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	3510C	
LCS 500-333645/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-333645/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-333645/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-333645/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 500-333645/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 333747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	8081B	333645
500-110948-2	MW-10-GW-04292016	Total/NA	Water	8081B	333645
500-110948-3	MW-6-GW-04292016	Total/NA	Water	8081B	333645
500-110948-4	MW-7-GW-04292016	Total/NA	Water	8081B	333645
500-110948-5	MW-9-GW-04292016	Total/NA	Water	8081B	333645
500-110948-6	MW-8-GW-04292016	Total/NA	Water	8081B	333645
500-110948-7	DUP-2 (04292016)	Total/NA	Water	8081B	333645
LCS 500-333645/2-A	Lab Control Sample	Total/NA	Water	8081B	333645
LCSD 500-333645/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	333645
MB 500-333645/1-A	Method Blank	Total/NA	Water	8081B	333645

Analysis Batch: 333763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	8082A	333645
500-110948-2	MW-10-GW-04292016	Total/NA	Water	8082A	333645
500-110948-3	MW-6-GW-04292016	Total/NA	Water	8082A	333645
500-110948-4	MW-7-GW-04292016	Total/NA	Water	8082A	333645
500-110948-5	MW-9-GW-04292016	Total/NA	Water	8082A	333645
500-110948-6	MW-8-GW-04292016	Total/NA	Water	8082A	333645
500-110948-7	DUP-2 (04292016)	Total/NA	Water	8082A	333645
LCS 500-333645/4-A	Lab Control Sample	Total/NA	Water	8082A	333645
LCSD 500-333645/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	333645
MB 500-333645/1-A	Method Blank	Total/NA	Water	8082A	333645

GC Semi VOA (Continued)

Prep Batch: 334022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-4 - RE	MW-7-GW-04292016	Total/NA	Water	3510C	
LCS 500-334022/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-334022/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 500-334022/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 335130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-4 - RE	MW-7-GW-04292016	Total/NA	Water	8082A	334022
LCS 500-334022/4-A	Lab Control Sample	Total/NA	Water	8082A	334022
LCSD 500-334022/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	334022
MB 500-334022/1-A	Method Blank	Total/NA	Water	8082A	334022

Metals

Prep Batch: 333552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Dissolved	Water	3010A	
500-110948-1	MW-2-GW-04282016	Total/NA	Water	3010A	
500-110948-2	MW-10-GW-04292016	Dissolved	Water	3010A	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	3010A	
500-110948-3	MW-6-GW-04292016	Dissolved	Water	3010A	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	3010A	
500-110948-4	MW-7-GW-04292016	Dissolved	Water	3010A	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	3010A	
500-110948-5	MW-9-GW-04292016	Dissolved	Water	3010A	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	3010A	
500-110948-6	MW-8-GW-04292016	Dissolved	Water	3010A	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	3010A	
500-110948-7	DUP-2 (04292016)	Dissolved	Water	3010A	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	3010A	
LCS 500-333552/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 500-333552/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	
MB 500-333552/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 333883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Dissolved	Water	6010C	333552
500-110948-1	MW-2-GW-04282016	Total/NA	Water	6010C	333552
500-110948-2	MW-10-GW-04292016	Dissolved	Water	6010C	333552
500-110948-2	MW-10-GW-04292016	Total/NA	Water	6010C	333552
500-110948-3	MW-6-GW-04292016	Dissolved	Water	6010C	333552
500-110948-3	MW-6-GW-04292016	Total/NA	Water	6010C	333552
500-110948-4	MW-7-GW-04292016	Dissolved	Water	6010C	333552
500-110948-4	MW-7-GW-04292016	Total/NA	Water	6010C	333552
500-110948-5	MW-9-GW-04292016	Dissolved	Water	6010C	333552
500-110948-5	MW-9-GW-04292016	Total/NA	Water	6010C	333552
500-110948-6	MW-8-GW-04292016	Dissolved	Water	6010C	333552
500-110948-6	MW-8-GW-04292016	Total/NA	Water	6010C	333552
500-110948-7	DUP-2 (04292016)	Dissolved	Water	6010C	333552
500-110948-7	DUP-2 (04292016)	Total/NA	Water	6010C	333552

Metals (Continued)

Analysis Batch: 333883 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-333552/2-A	Lab Control Sample	Total/NA	Water	6010C	333552
LCSD 500-333552/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	333552
MB 500-333552/1-A	Method Blank	Total/NA	Water	6010C	333552

Prep Batch: 334006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Dissolved	Water	7470A	
500-110948-1	MW-2-GW-04282016	Total/NA	Water	7470A	
500-110948-1 DU	MW-2-GW-04282016	Total/NA	Water	7470A	
500-110948-1 MS	MW-2-GW-04282016	Total/NA	Water	7470A	
500-110948-1 MSD	MW-2-GW-04282016	Total/NA	Water	7470A	
500-110948-2	MW-10-GW-04292016	Dissolved	Water	7470A	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	7470A	
500-110948-3	MW-6-GW-04292016	Dissolved	Water	7470A	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	7470A	
500-110948-4	MW-7-GW-04292016	Dissolved	Water	7470A	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	7470A	
500-110948-5	MW-9-GW-04292016	Dissolved	Water	7470A	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	7470A	
500-110948-6	MW-8-GW-04292016	Dissolved	Water	7470A	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	7470A	
500-110948-7	DUP-2 (04292016)	Dissolved	Water	7470A	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	7470A	
LCS 500-334006/13-A	Lab Control Sample	Total/NA	Water	7470A	
MB 500-334006/12-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 334156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Dissolved	Water	7470A	334006
500-110948-1	MW-2-GW-04282016	Total/NA	Water	7470A	334006
500-110948-1 DU	MW-2-GW-04282016	Total/NA	Water	7470A	334006
500-110948-1 MS	MW-2-GW-04282016	Total/NA	Water	7470A	334006
500-110948-1 MSD	MW-2-GW-04282016	Total/NA	Water	7470A	334006
500-110948-2	MW-10-GW-04292016	Dissolved	Water	7470A	334006
500-110948-2	MW-10-GW-04292016	Total/NA	Water	7470A	334006
500-110948-3	MW-6-GW-04292016	Dissolved	Water	7470A	334006
500-110948-3	MW-6-GW-04292016	Total/NA	Water	7470A	334006
500-110948-4	MW-7-GW-04292016	Dissolved	Water	7470A	334006
500-110948-4	MW-7-GW-04292016	Total/NA	Water	7470A	334006
500-110948-5	MW-9-GW-04292016	Dissolved	Water	7470A	334006
500-110948-5	MW-9-GW-04292016	Total/NA	Water	7470A	334006
500-110948-6	MW-8-GW-04292016	Dissolved	Water	7470A	334006
500-110948-6	MW-8-GW-04292016	Total/NA	Water	7470A	334006
500-110948-7	DUP-2 (04292016)	Dissolved	Water	7470A	334006
500-110948-7	DUP-2 (04292016)	Total/NA	Water	7470A	334006
LCS 500-334006/13-A	Lab Control Sample	Total/NA	Water	7470A	334006
MB 500-334006/12-A	Method Blank	Total/NA	Water	7470A	334006

Analysis Batch: 334271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-3	MW-6-GW-04292016	Dissolved	Water	6010C	333552

Metals (Continued)

Analysis Batch: 334271 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-3	MW-6-GW-04292016	Total/NA	Water	6010C	333552
500-110948-4	MW-7-GW-04292016	Dissolved	Water	6010C	333552
500-110948-4	MW-7-GW-04292016	Total/NA	Water	6010C	333552
500-110948-7	DUP-2 (04292016)	Dissolved	Water	6010C	333552
500-110948-7	DUP-2 (04292016)	Total/NA	Water	6010C	333552

General Chemistry

Analysis Batch: 333433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	SM 4500 NO2 B	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	SM 4500 NO2 B	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	SM 4500 NO2 B	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	SM 4500 NO2 B	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	SM 4500 NO2 B	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	SM 4500 NO2 B	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	SM 4500 NO2 B	
LCS 500-333433/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	
MB 500-333433/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 333553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-3	MW-6-GW-04292016	Total/NA	Water	9038	
LCS 500-333553/4	Lab Control Sample	Total/NA	Water	9038	
MB 500-333553/3	Method Blank	Total/NA	Water	9038	

Analysis Batch: 333690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	9034	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	9034	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	9034	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	9034	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	9034	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	9034	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	9034	
LCS 500-333690/2	Lab Control Sample	Total/NA	Water	9034	
MB 500-333690/1	Method Blank	Total/NA	Water	9034	

Analysis Batch: 333768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	SM 2540D	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	SM 2540D	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	SM 2540D	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	SM 2540D	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	SM 2540D	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	SM 2540D	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	SM 2540D	
LCS 500-333768/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 500-333768/1	Method Blank	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 334094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-4	MW-7-GW-04292016	Total/NA	Water	9038	
LCS 500-334094/4	Lab Control Sample	Total/NA	Water	9038	
MB 500-334094/3	Method Blank	Total/NA	Water	9038	

Analysis Batch: 334308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	9038	
500-110948-1 MS	MW-2-GW-04282016	Total/NA	Water	9038	
500-110948-1 MSD	MW-2-GW-04282016	Total/NA	Water	9038	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	9038	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	9038	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	9038	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	9038	
LCS 500-334308/4	Lab Control Sample	Total/NA	Water	9038	
MB 500-334308/3	Method Blank	Total/NA	Water	9038	

Analysis Batch: 335008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	Nitrate by calc	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	Nitrate by calc	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	Nitrate by calc	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	Nitrate by calc	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	Nitrate by calc	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	Nitrate by calc	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	Nitrate by calc	

Prep Batch: 335077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	SM 4500 NH3 B	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	SM 4500 NH3 B	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	SM 4500 NH3 B	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	SM 4500 NH3 B	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	SM 4500 NH3 B	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	SM 4500 NH3 B	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	SM 4500 NH3 B	
LCS 500-335077/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 500-335077/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 335172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	SM 4500 NO3 F	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	SM 4500 NO3 F	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	SM 4500 NO3 F	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	SM 4500 NO3 F	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	SM 4500 NO3 F	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	SM 4500 NO3 F	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	SM 4500 NO3 F	
LCS 500-335172/13	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	
MB 500-335172/12	Method Blank	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 335265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	SM 4500 NH3 G	335077
500-110948-2	MW-10-GW-04292016	Total/NA	Water	SM 4500 NH3 G	335077
500-110948-3	MW-6-GW-04292016	Total/NA	Water	SM 4500 NH3 G	335077
500-110948-4	MW-7-GW-04292016	Total/NA	Water	SM 4500 NH3 G	335077
500-110948-5	MW-9-GW-04292016	Total/NA	Water	SM 4500 NH3 G	335077
500-110948-6	MW-8-GW-04292016	Total/NA	Water	SM 4500 NH3 G	335077
500-110948-7	DUP-2 (04292016)	Total/NA	Water	SM 4500 NH3 G	335077
LCS 500-335077/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	335077
MB 500-335077/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	335077

Analysis Batch: 335506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-110948-1	MW-2-GW-04282016	Total/NA	Water	9060A	
500-110948-2	MW-10-GW-04292016	Total/NA	Water	9060A	
500-110948-3	MW-6-GW-04292016	Total/NA	Water	9060A	
500-110948-4	MW-7-GW-04292016	Total/NA	Water	9060A	
500-110948-5	MW-9-GW-04292016	Total/NA	Water	9060A	
500-110948-6	MW-8-GW-04292016	Total/NA	Water	9060A	
500-110948-7	DUP-2 (04292016)	Total/NA	Water	9060A	
LCS 500-335506/5	Lab Control Sample	Total/NA	Water	9060A	
MB 500-335506/4	Method Blank	Total/NA	Water	9060A	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-110948-1	MW-2-GW-04282016	97	99	99	99
500-110948-1 - DL	MW-2-GW-04282016	97	99	99	98
500-110948-1 MS	MW-2-GW-04282016	95	101	94	100
500-110948-1 MSD	MW-2-GW-04282016	97	100	98	100
500-110948-2	MW-10-GW-04292016	98	96	93	102
500-110948-3	MW-6-GW-04292016	91	96	94	105
500-110948-3 - DL	MW-6-GW-04292016	99	97	94	101
500-110948-4	MW-7-GW-04292016	95	93	92	102
500-110948-4 - DL	MW-7-GW-04292016	100	95	95	102
500-110948-5	MW-9-GW-04292016	102	94	94	102
500-110948-6	MW-8-GW-04292016	101	98	96	102
500-110948-6 MS	MW-8-GW-04292016	96	100	92	100
500-110948-6 MSD	MW-8-GW-04292016	96	101	94	101
500-110948-7	DUP-2 (04292016)	97	96	95	100
500-110948-7 - DL	DUP-2 (04292016)	100	99	100	100
LCS 500-335053/4	Lab Control Sample	93	99	93	102
LCS 500-335112/32	Lab Control Sample	94	97	92	103
MB 500-335053/6	Method Blank	101	99	95	100
MB 500-335112/6	Method Blank	102	96	95	102

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-110948-1	MW-2-GW-04282016	64	60	69	46	99	86
500-110948-1 - DL	MW-2-GW-04282016	77	60	84	51	118	98
500-110948-2	MW-10-GW-04292016	77	70	82	54	100	88
500-110948-3	MW-6-GW-04292016	91	69	89	60	106	105
500-110948-4	MW-7-GW-04292016	90	64	87	63	91	101
500-110948-5	MW-9-GW-04292016	61	55	58	45	91	88
500-110948-6	MW-8-GW-04292016	66	67	72	53	99	89
500-110948-7	DUP-2 (04292016)	99	67	88	60	113	111
LCS 500-334095/2-A	Lab Control Sample	77	67	81	57	103	99
LCSD 500-334095/3-A	Lab Control Sample Dup	82	71	83	59	104	101
MB 500-334095/1-A	Method Blank	75	63	75	51	108	83

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-110948-1	MW-2-GW-04282016	82	142 X
500-110948-2	MW-10-GW-04292016	66	65
500-110948-3	MW-6-GW-04292016	40	110
500-110948-4	MW-7-GW-04292016	9 X	93
500-110948-5	MW-9-GW-04292016	55	69
500-110948-6	MW-8-GW-04292016	82	67
500-110948-7	DUP-2 (04292016)	35	88
LCS 500-333645/2-A	Lab Control Sample	100	80
LCSD 500-333645/3-A	Lab Control Sample Dup	96	75
MB 500-333645/1-A	Method Blank	109	78

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-110948-1	MW-2-GW-04282016		73		75
500-110948-2	MW-10-GW-04292016		74		67
500-110948-3	MW-6-GW-04292016	57	30	22 X	28 X
500-110948-4	MW-7-GW-04292016	23 X	15 X	13 X	13 X
500-110948-4 - RE	MW-7-GW-04292016	6 X	6 X	2 X	2 X
500-110948-5	MW-9-GW-04292016		65		62
500-110948-6	MW-8-GW-04292016		77		75
500-110948-7	DUP-2 (04292016)	46	33	24 X	30
LCS 500-333645/4-A	Lab Control Sample	102	73	81	87
LCS 500-334022/4-A	Lab Control Sample	77	71	91	71
LCSD 500-333645/5-A	Lab Control Sample Dup	108	79	88	96
LCSD 500-334022/5-A	Lab Control Sample Dup	88	81	113	83
MB 500-333645/1-A	Method Blank	111	78	87	89
MB 500-334022/1-A	Method Blank	94	84	113	83

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-335053/6
Matrix: Water
Analysis Batch: 335053

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/11/16 23:48	1
Benzene	<0.50		0.50	0.15	ug/L			05/11/16 23:48	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/11/16 23:48	1
Bromoform	<1.0		1.0	0.48	ug/L			05/11/16 23:48	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/11/16 23:48	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/11/16 23:48	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/11/16 23:48	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/11/16 23:48	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/11/16 23:48	1
Chloroform	<1.0		1.0	0.37	ug/L			05/11/16 23:48	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/11/16 23:48	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/11/16 23:48	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/11/16 23:48	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/11/16 23:48	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/11/16 23:48	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/11/16 23:48	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/11/16 23:48	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/11/16 23:48	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/11/16 23:48	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/11/16 23:48	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/11/16 23:48	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/11/16 23:48	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/11/16 23:48	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/11/16 23:48	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/11/16 23:48	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/11/16 23:48	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/11/16 23:48	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/11/16 23:48	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/11/16 23:48	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/11/16 23:48	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/11/16 23:48	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/11/16 23:48	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/11/16 23:48	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/11/16 23:48	1
Styrene	<1.0		1.0	0.39	ug/L			05/11/16 23:48	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/11/16 23:48	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/11/16 23:48	1
Toluene	<0.50		0.50	0.15	ug/L			05/11/16 23:48	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/11/16 23:48	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/11/16 23:48	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/11/16 23:48	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/11/16 23:48	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/11/16 23:48	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/11/16 23:48	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/11/16 23:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/11/16 23:48	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/11/16 23:48	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			05/11/16 23:48	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		71 - 120		05/11/16 23:48	1
Dibromofluoromethane	99		70 - 120		05/11/16 23:48	1
1,2-Dichloroethane-d4 (Surr)	95		71 - 127		05/11/16 23:48	1
Toluene-d8 (Surr)	100		75 - 120		05/11/16 23:48	1

Lab Sample ID: LCS 500-335053/4
Matrix: Water
Analysis Batch: 335053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	46.9		ug/L		94	37 - 141
Benzene	50.0	46.3		ug/L		93	70 - 125
Bromodichloromethane	50.0	41.5		ug/L		83	70 - 125
Bromoform	50.0	38.3		ug/L		77	54 - 128
Bromomethane	50.0	56.6		ug/L		113	40 - 150
Carbon disulfide	50.0	43.1		ug/L		86	68 - 125
Carbon tetrachloride	50.0	43.4		ug/L		87	70 - 125
Chlorobenzene	50.0	46.8		ug/L		94	70 - 125
Chloroethane	50.0	54.2		ug/L		108	60 - 139
Chloroform	50.0	44.7		ug/L		89	70 - 125
Chloromethane	50.0	48.3		ug/L		97	60 - 140
cis-1,2-Dichloroethene	50.0	47.9		ug/L		96	70 - 125
cis-1,3-Dichloropropene	50.0	42.0		ug/L		84	70 - 125
Cyclohexane	50.0	45.0		ug/L		90	56 - 149
Dibromochloromethane	50.0	39.5		ug/L		79	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	35.3		ug/L		71	51 - 125
1,2-Dibromoethane	50.0	42.8		ug/L		86	70 - 125
1,2-Dichlorobenzene	50.0	44.8		ug/L		90	70 - 125
1,3-Dichlorobenzene	50.0	46.9		ug/L		94	70 - 125
1,4-Dichlorobenzene	50.0	44.4		ug/L		89	70 - 125
Dichlorodifluoromethane	50.0	48.7		ug/L		97	51 - 140
1,1-Dichloroethane	50.0	46.2		ug/L		92	70 - 125
1,2-Dichloroethane	50.0	44.8		ug/L		90	70 - 125
1,1-Dichloroethene	50.0	44.8		ug/L		90	70 - 125
1,2-Dichloropropane	50.0	45.4		ug/L		91	70 - 125
Ethylbenzene	50.0	47.8		ug/L		96	70 - 125
2-Hexanone	50.0	38.3		ug/L		77	49 - 139
Isopropylbenzene	50.0	44.2		ug/L		88	70 - 125
Methyl acetate	250	202		ug/L		81	60 - 148
Methylcyclohexane	50.0	45.7		ug/L		91	70 - 127
Methylene Chloride	50.0	46.6		ug/L		93	68 - 125
Methyl Ethyl Ketone	50.0	39.0		ug/L		78	52 - 142
methyl isobutyl ketone	50.0	39.2		ug/L		78	47 - 140
Methyl tert-butyl ether	50.0	43.4		ug/L		87	67 - 125
Styrene	50.0	45.9		ug/L		92	70 - 125
1,1,2,2-Tetrachloroethane	50.0	38.1		ug/L		76	68 - 125
Tetrachloroethene	50.0	51.4		ug/L		103	70 - 125
Toluene	50.0	46.4		ug/L		93	70 - 125
trans-1,2-Dichloroethene	50.0	46.4		ug/L		93	70 - 125
trans-1,3-Dichloropropene	50.0	40.1		ug/L		80	70 - 125
1,2,4-Trichlorobenzene	50.0	48.9		ug/L		98	64 - 126
1,1,1-Trichloroethane	50.0	45.7		ug/L		91	70 - 125
1,1,2-Trichloroethane	50.0	42.0		ug/L		84	70 - 125
Trichloroethene	50.0	48.2		ug/L		96	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-335053/4
Matrix: Water
Analysis Batch: 335053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	53.7		ug/L		107	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.1		ug/L		96	57 - 141
Vinyl chloride	50.0	52.7		ug/L		105	70 - 126
Xylenes, Total	100	91.2		ug/L		91	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*99*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*

Lab Sample ID: 500-110948-1 MS
Matrix: Water
Analysis Batch: 335053

Client Sample ID: MW-2-GW-04282016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<5.0		50.0	34.7		ug/L		69	37 - 141
Benzene	14		50.0	62.2		ug/L		97	70 - 125
Bromodichloromethane	<1.0		50.0	43.7		ug/L		87	70 - 125
Bromoform	<1.0		50.0	41.1		ug/L		82	54 - 128
Bromomethane	<2.0		50.0	38.0		ug/L		76	40 - 150
Carbon disulfide	<2.0		50.0	42.7		ug/L		85	68 - 125
Carbon tetrachloride	<1.0		50.0	43.3		ug/L		87	70 - 125
Chlorobenzene	580	E	50.0	610	E 4	ug/L		51	70 - 125
Chloroethane	4.8		50.0	44.9		ug/L		80	60 - 139
Chloroform	<1.0		50.0	46.4		ug/L		93	70 - 125
Chloromethane	<1.0		50.0	38.8		ug/L		78	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	49.4		ug/L		99	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	44.0		ug/L		88	70 - 125
Cyclohexane	<1.0		50.0	44.4		ug/L		89	56 - 149
Dibromochloromethane	<1.0		50.0	40.7		ug/L		81	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	43.4		ug/L		87	51 - 125
1,2-Dibromoethane	<1.0		50.0	46.7		ug/L		93	70 - 125
1,2-Dichlorobenzene	24		50.0	72.2		ug/L		96	70 - 125
1,3-Dichlorobenzene	5.6		50.0	54.5		ug/L		98	70 - 125
1,4-Dichlorobenzene	23		50.0	69.9		ug/L		94	70 - 125
Dichlorodifluoromethane	<2.0		50.0	35.4		ug/L		71	51 - 140
1,1-Dichloroethane	<1.0		50.0	48.5		ug/L		97	70 - 125
1,2-Dichloroethane	<1.0		50.0	48.8		ug/L		98	70 - 125
1,1-Dichloroethene	<1.0		50.0	45.6		ug/L		91	70 - 125
1,2-Dichloropropane	<1.0		50.0	48.6		ug/L		97	70 - 125
Ethylbenzene	2.2		50.0	51.8		ug/L		99	70 - 125
2-Hexanone	<5.0		50.0	35.9		ug/L		72	49 - 139
Isopropylbenzene	5.3		50.0	52.3		ug/L		94	70 - 125
Methyl acetate	20		250	238		ug/L		87	60 - 148
Methylcyclohexane	<1.0		50.0	46.3		ug/L		93	70 - 127
Methylene Chloride	<5.0		50.0	50.0		ug/L		100	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-110948-1 MS — **Client Sample ID: MW-2-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335053

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	33.9		ug/L		68	52 - 142
methyl isobutyl ketone	<5.0		50.0	36.7		ug/L		73	47 - 140
Methyl tert-butyl ether	<1.0		50.0	48.2		ug/L		96	67 - 125
Styrene	<1.0		50.0	48.2		ug/L		96	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	43.7		ug/L		87	68 - 125
Tetrachloroethene	<1.0		50.0	50.8		ug/L		102	70 - 125
Toluene	1.3		50.0	49.7		ug/L		97	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	48.1		ug/L		96	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	41.9		ug/L		84	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	57.2		ug/L		114	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	45.8		ug/L		92	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	45.0		ug/L		90	70 - 125
Trichloroethene	<0.50		50.0	49.7		ug/L		99	70 - 125
Trichlorofluoromethane	<1.0		50.0	34.3		ug/L		69	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	47.6		ug/L		95	57 - 141
Vinyl chloride	<0.50		50.0	41.0		ug/L		82	70 - 126
Xylenes, Total	6.2		100	102		ug/L		95	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*101*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*
Toluene-d8 (Surr)	*100*		*75 - 120*

Lab Sample ID: 500-110948-1 MSD — **Client Sample ID: MW-2-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335053

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<5.0		50.0	40.2		ug/L		80	37 - 141	15	20
Benzene	14		50.0	56.4		ug/L		86	70 - 125	10	20
Bromodichloromethane	<1.0		50.0	40.7		ug/L		81	70 - 125	7	20
Bromoform	<1.0		50.0	36.5		ug/L		73	54 - 128	12	20
Bromomethane	<2.0		50.0	41.4		ug/L		83	40 - 150	8	20
Carbon disulfide	<2.0		50.0	38.3		ug/L		77	68 - 125	11	20
Carbon tetrachloride	<1.0		50.0	39.8		ug/L		80	70 - 125	8	20
Chlorobenzene	580	E	50.0	590	E 4	ug/L		11	70 - 125	3	20
Chloroethane	4.8		50.0	47.9		ug/L		86	60 - 139	6	20
Chloroform	<1.0		50.0	42.3		ug/L		85	70 - 125	9	20
Chloromethane	<1.0		50.0	41.4		ug/L		83	60 - 140	6	20
cis-1,2-Dichloroethene	<1.0		50.0	45.6		ug/L		91	70 - 125	8	20
cis-1,3-Dichloropropene	<1.0		50.0	39.4		ug/L		79	70 - 125	11	20
Cyclohexane	<1.0		50.0	39.2		ug/L		78	56 - 149	12	20
Dibromochloromethane	<1.0		50.0	37.1		ug/L		74	66 - 125	9	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	40.6		ug/L		81	51 - 125	7	20
1,2-Dibromoethane	<1.0		50.0	41.2		ug/L		82	70 - 125	13	20
1,2-Dichlorobenzene	24		50.0	67.9		ug/L		87	70 - 125	6	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-110948-1 MSD
Matrix: Water
Analysis Batch: 335053

Client Sample ID: MW-2-GW-04282016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	5.6		50.0	50.0		ug/L		89	70 - 125	9	20
1,4-Dichlorobenzene	23		50.0	65.4		ug/L		85	70 - 125	7	20
Dichlorodifluoromethane	<2.0		50.0	38.0		ug/L		76	51 - 140	7	20
1,1-Dichloroethane	<1.0		50.0	43.1		ug/L		86	70 - 125	12	20
1,2-Dichloroethane	<1.0		50.0	45.3		ug/L		91	70 - 125	8	20
1,1-Dichloroethene	<1.0		50.0	41.1		ug/L		82	70 - 125	10	20
1,2-Dichloropropane	<1.0		50.0	44.4		ug/L		89	70 - 125	9	20
Ethylbenzene	2.2		50.0	45.8		ug/L		87	70 - 125	12	20
2-Hexanone	<5.0		50.0	33.1		ug/L		66	49 - 139	8	20
Isopropylbenzene	5.3		50.0	47.9		ug/L		85	70 - 125	9	20
Methyl acetate	20		250	219		ug/L		79	60 - 148	8	20
Methylcyclohexane	<1.0		50.0	40.1		ug/L		80	70 - 127	14	20
Methylene Chloride	<5.0		50.0	44.9		ug/L		90	68 - 125	11	20
Methyl Ethyl Ketone	<5.0		50.0	34.0		ug/L		68	52 - 142	0	20
methyl isobutyl ketone	<5.0		50.0	33.6		ug/L		67	47 - 140	9	20
Methyl tert-butyl ether	<1.0		50.0	43.8		ug/L		88	67 - 125	9	20
Styrene	<1.0		50.0	42.3		ug/L		85	70 - 125	13	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	40.4		ug/L		81	68 - 125	8	20
Tetrachloroethene	<1.0		50.0	44.5		ug/L		89	70 - 125	13	20
Toluene	1.3		50.0	43.4		ug/L		84	70 - 125	13	20
trans-1,2-Dichloroethene	<1.0		50.0	42.9		ug/L		86	70 - 125	11	20
trans-1,3-Dichloropropene	<1.0		50.0	37.2		ug/L		74	70 - 125	12	20
1,2,4-Trichlorobenzene	<1.0		50.0	50.2		ug/L		100	64 - 126	13	20
1,1,1-Trichloroethane	<1.0		50.0	41.8		ug/L		84	70 - 125	9	20
1,1,2-Trichloroethane	<1.0		50.0	40.0		ug/L		80	70 - 125	12	20
Trichloroethene	<0.50		50.0	44.3		ug/L		89	70 - 125	11	20
Trichlorofluoromethane	<1.0		50.0	39.5		ug/L		79	60 - 126	14	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	41.1		ug/L		82	57 - 141	15	20
Vinyl chloride	<0.50		50.0	44.5		ug/L		89	70 - 126	8	20
Xylenes, Total	6.2		100	89.5		ug/L		83	70 - 125	13	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*100*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 127*
Toluene-d8 (Surr)	*100*		*75 - 120*

Lab Sample ID: MB 500-335112/6
Matrix: Water
Analysis Batch: 335112

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 13:30	1
Benzene	<0.50		0.50	0.15	ug/L			05/12/16 13:30	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 13:30	1
Bromoform	<1.0		1.0	0.48	ug/L			05/12/16 13:30	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 13:30	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-335112/6
Matrix: Water
Analysis Batch: 335112

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 13:30	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 13:30	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 13:30	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 13:30	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 13:30	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 13:30	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 13:30	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 13:30	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 13:30	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 13:30	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/12/16 13:30	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 13:30	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 13:30	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 13:30	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/12/16 13:30	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 13:30	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 13:30	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 13:30	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 13:30	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 13:30	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/12/16 13:30	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/12/16 13:30	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/12/16 13:30	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 13:30	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 13:30	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 13:30	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			05/12/16 13:30	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			05/12/16 13:30	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 13:30	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 13:30	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 13:30	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 13:30	1
Toluene	<0.50		0.50	0.15	ug/L			05/12/16 13:30	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 13:30	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 13:30	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 13:30	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 13:30	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 13:30	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 13:30	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 13:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 13:30	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 13:30	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			05/12/16 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*05/12/16 13:30*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*05/12/16 13:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*05/12/16 13:30*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-335112/6
Matrix: Water
Analysis Batch: 335112

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 13:30*	*1*

Lab Sample ID: LCS 500-335112/32
Matrix: Water
Analysis Batch: 335112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	47.0		ug/L		94	37 - 141
Benzene	50.0	49.1		ug/L		98	70 - 125
Bromodichloromethane	50.0	43.9		ug/L		88	70 - 125
Bromoform	50.0	41.3		ug/L		83	54 - 128
Bromomethane	50.0	50.0		ug/L		100	40 - 150
Carbon disulfide	50.0	46.1		ug/L		92	68 - 125
Carbon tetrachloride	50.0	47.7		ug/L		95	70 - 125
Chlorobenzene	50.0	50.6		ug/L		101	70 - 125
Chloroethane	50.0	49.2		ug/L		98	60 - 139
Chloroform	50.0	46.8		ug/L		94	70 - 125
Chloromethane	50.0	45.0		ug/L		90	60 - 140
cis-1,2-Dichloroethene	50.0	50.5		ug/L		101	70 - 125
cis-1,3-Dichloropropene	50.0	47.1		ug/L		94	70 - 125
Cyclohexane	50.0	48.5		ug/L		97	56 - 149
Dibromochloromethane	50.0	42.4		ug/L		85	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	36.2		ug/L		72	51 - 125
1,2-Dibromoethane	50.0	46.3		ug/L		93	70 - 125
1,2-Dichlorobenzene	50.0	48.2		ug/L		96	70 - 125
1,3-Dichlorobenzene	50.0	51.1		ug/L		102	70 - 125
1,4-Dichlorobenzene	50.0	49.6		ug/L		99	70 - 125
Dichlorodifluoromethane	50.0	45.3		ug/L		91	51 - 140
1,1-Dichloroethane	50.0	48.6		ug/L		97	70 - 125
1,2-Dichloroethane	50.0	48.0		ug/L		96	70 - 125
1,1-Dichloroethene	50.0	48.4		ug/L		97	70 - 125
1,2-Dichloropropane	50.0	47.2		ug/L		94	70 - 125
Ethylbenzene	50.0	52.0		ug/L		104	70 - 125
2-Hexanone	50.0	40.0		ug/L		80	49 - 139
Isopropylbenzene	50.0	49.9		ug/L		100	70 - 125
Methyl acetate	250	208		ug/L		83	60 - 148
Methylcyclohexane	50.0	50.4		ug/L		101	70 - 127
Methylene Chloride	50.0	54.1		ug/L		108	68 - 125
Methyl Ethyl Ketone	50.0	39.0		ug/L		78	52 - 142
methyl isobutyl ketone	50.0	39.0		ug/L		78	47 - 140
Methyl tert-butyl ether	50.0	46.3		ug/L		93	67 - 125
Styrene	50.0	48.6		ug/L		97	70 - 125
1,1,2,2-Tetrachloroethane	50.0	42.4		ug/L		85	68 - 125
Tetrachloroethene	50.0	56.1		ug/L		112	70 - 125
Toluene	50.0	50.4		ug/L		101	70 - 125
trans-1,2-Dichloroethene	50.0	49.9		ug/L		100	70 - 125
trans-1,3-Dichloropropene	50.0	44.0		ug/L		88	70 - 125
1,2,4-Trichlorobenzene	50.0	55.6		ug/L		111	64 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-335112/32
Matrix: Water
Analysis Batch: 335112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	49.1		ug/L		98	70 - 125
1,1,2-Trichloroethane	50.0	45.3		ug/L		91	70 - 125
Trichloroethene	50.0	51.2		ug/L		102	70 - 125
Trichlorofluoromethane	50.0	51.8		ug/L		104	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.1		ug/L		104	57 - 141
Vinyl chloride	50.0	49.6		ug/L		99	70 - 126
Xylenes, Total	100	99.2		ug/L		99	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*
Toluene-d8 (Surr)	*103*		*75 - 120*

Lab Sample ID: 500-110948-6 MS
Matrix: Water
Analysis Batch: 335112

Client Sample ID: MW-8-GW-04292016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	6.2		50.0	47.8		ug/L		83	37 - 141
Benzene	<0.50		50.0	50.3		ug/L		101	70 - 125
Bromodichloromethane	<1.0		50.0	44.0		ug/L		88	70 - 125
Bromoform	<1.0		50.0	40.4		ug/L		81	54 - 128
Bromomethane	<2.0	F2	50.0	60.0		ug/L		120	40 - 150
Carbon disulfide	<2.0		50.0	45.3		ug/L		91	68 - 125
Carbon tetrachloride	<1.0		50.0	46.8		ug/L		94	70 - 125
Chlorobenzene	<1.0		50.0	50.1		ug/L		100	70 - 125
Chloroethane	<1.0	F2	50.0	57.4		ug/L		115	60 - 139
Chloroform	<1.0		50.0	47.9		ug/L		96	70 - 125
Chloromethane	<1.0	F2	50.0	53.5		ug/L		107	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	51.8		ug/L		104	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	45.3		ug/L		91	70 - 125
Cyclohexane	<1.0		50.0	47.6		ug/L		95	56 - 149
Dibromochloromethane	<1.0		50.0	42.7		ug/L		85	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	37.8		ug/L		76	51 - 125
1,2-Dibromoethane	<1.0		50.0	47.8		ug/L		96	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	48.9		ug/L		98	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	50.7		ug/L		101	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	49.3		ug/L		99	70 - 125
Dichlorodifluoromethane	<2.0	F2	50.0	57.2		ug/L		114	51 - 140
1,1-Dichloroethane	<1.0		50.0	48.5		ug/L		97	70 - 125
1,2-Dichloroethane	<1.0		50.0	48.5		ug/L		97	70 - 125
1,1-Dichloroethene	<1.0		50.0	47.9		ug/L		96	70 - 125
1,2-Dichloropropane	<1.0		50.0	48.7		ug/L		97	70 - 125
Ethylbenzene	0.33	J	50.0	50.8		ug/L		101	70 - 125
2-Hexanone	<5.0		50.0	44.4		ug/L		89	49 - 139
Isopropylbenzene	<1.0		50.0	49.9		ug/L		100	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-110948-6 MS
Matrix: Water
Analysis Batch: 335112

Client Sample ID: MW-8-GW-04292016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	<5.0		250	216		ug/L		86	60 - 148
Methylcyclohexane	<1.0		50.0	48.8		ug/L		98	70 - 127
Methylene Chloride	<5.0		50.0	50.9		ug/L		102	68 - 125
Methyl Ethyl Ketone	<5.0	F2	50.0	49.1		ug/L		98	52 - 142
methyl isobutyl ketone	<5.0	F2	50.0	46.0		ug/L		92	47 - 140
Methyl tert-butyl ether	<1.0		50.0	47.6		ug/L		95	67 - 125
Styrene	<1.0		50.0	48.5		ug/L		97	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	42.7		ug/L		85	68 - 125
Tetrachloroethene	<1.0		50.0	54.7		ug/L		109	70 - 125
Toluene	<0.50		50.0	50.0		ug/L		100	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	50.3		ug/L		101	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	43.0		ug/L		86	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	50.8		ug/L		102	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	48.3		ug/L		97	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	46.9		ug/L		94	70 - 125
Trichloroethene	<0.50		50.0	51.6		ug/L		103	70 - 125
Trichlorofluoromethane	<1.0	F2	50.0	57.3		ug/L		115	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	50.8		ug/L		102	57 - 141
Vinyl chloride	<0.50	F2	50.0	59.8		ug/L		120	70 - 126
Xylenes, Total	1.2		100	97.2		ug/L		96	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*
Dibromofluoromethane	*100*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*
Toluene-d8 (Surr)	*100*		*75 - 120*

Lab Sample ID: 500-110948-6 MSD
Matrix: Water
Analysis Batch: 335112

Client Sample ID: MW-8-GW-04292016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	6.2		50.0	49.1		ug/L		86	37 - 141	3	20
Benzene	<0.50		50.0	52.8		ug/L		106	70 - 125	5	20
Bromodichloromethane	<1.0		50.0	47.6		ug/L		95	70 - 125	8	20
Bromoform	<1.0		50.0	43.9		ug/L		88	54 - 128	8	20
Bromomethane	<2.0	F2	50.0	45.3	F2	ug/L		91	40 - 150	28	20
Carbon disulfide	<2.0		50.0	48.7		ug/L		97	68 - 125	7	20
Carbon tetrachloride	<1.0		50.0	51.0		ug/L		102	70 - 125	9	20
Chlorobenzene	<1.0		50.0	54.0		ug/L		108	70 - 125	7	20
Chloroethane	<1.0	F2	50.0	45.9	F2	ug/L		92	60 - 139	22	20
Chloroform	<1.0		50.0	51.1		ug/L		102	70 - 125	7	20
Chloromethane	<1.0	F2	50.0	41.9	F2	ug/L		84	60 - 140	24	20
cis-1,2-Dichloroethene	<1.0		50.0	55.1		ug/L		110	70 - 125	6	20
cis-1,3-Dichloropropene	<1.0		50.0	48.3		ug/L		97	70 - 125	6	20
Cyclohexane	<1.0		50.0	51.6		ug/L		103	56 - 149	8	20
Dibromochloromethane	<1.0		50.0	45.9		ug/L		92	66 - 125	7	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-110948-6 MSD
Matrix: Water
Analysis Batch: 335112

Client Sample ID: MW-8-GW-04292016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane	<5.0		50.0	44.6		ug/L		89	51 - 125	16	20
1,2-Dibromoethane	<1.0		50.0	51.7		ug/L		103	70 - 125	8	20
1,2-Dichlorobenzene	<1.0		50.0	53.3		ug/L		107	70 - 125	9	20
1,3-Dichlorobenzene	<1.0		50.0	54.5		ug/L		109	70 - 125	7	20
1,4-Dichlorobenzene	<1.0		50.0	52.8		ug/L		106	70 - 125	7	20
Dichlorodifluoromethane	<2.0	F2	50.0	44.3	F2	ug/L		89	51 - 140	26	20
1,1-Dichloroethane	<1.0		50.0	52.9		ug/L		106	70 - 125	9	20
1,2-Dichloroethane	<1.0		50.0	51.3		ug/L		103	70 - 125	6	20
1,1-Dichloroethene	<1.0		50.0	53.3		ug/L		107	70 - 125	11	20
1,2-Dichloropropane	<1.0		50.0	52.3		ug/L		105	70 - 125	7	20
Ethylbenzene	0.33	J	50.0	54.5		ug/L		108	70 - 125	7	20
2-Hexanone	<5.0		50.0	38.7		ug/L		77	49 - 139	14	20
Isopropylbenzene	<1.0		50.0	53.8		ug/L		108	70 - 125	8	20
Methyl acetate	<5.0		250	228		ug/L		91	60 - 148	5	20
Methylcyclohexane	<1.0		50.0	53.7		ug/L		107	70 - 127	10	20
Methylene Chloride	<5.0		50.0	54.4		ug/L		109	68 - 125	7	20
Methyl Ethyl Ketone	<5.0	F2	50.0	35.1	F2	ug/L		70	52 - 142	33	20
methyl isobutyl ketone	<5.0	F2	50.0	37.3	F2	ug/L		75	47 - 140	21	20
Methyl tert-butyl ether	<1.0		50.0	51.7		ug/L		103	67 - 125	8	20
Styrene	<1.0		50.0	51.8		ug/L		104	70 - 125	7	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	47.3		ug/L		95	68 - 125	10	20
Tetrachloroethene	<1.0		50.0	58.2		ug/L		116	70 - 125	6	20
Toluene	<0.50		50.0	53.5		ug/L		107	70 - 125	7	20
trans-1,2-Dichloroethene	<1.0		50.0	53.8		ug/L		108	70 - 125	7	20
trans-1,3-Dichloropropene	<1.0		50.0	47.3		ug/L		95	70 - 125	10	20
1,2,4-Trichlorobenzene	<1.0		50.0	56.1		ug/L		112	64 - 126	10	20
1,1,1-Trichloroethane	<1.0		50.0	51.6		ug/L		103	70 - 125	7	20
1,1,2-Trichloroethane	<1.0		50.0	49.7		ug/L		99	70 - 125	6	20
Trichloroethene	<0.50		50.0	54.8		ug/L		110	70 - 125	6	20
Trichlorofluoromethane	<1.0	F2	50.0	44.6	F2	ug/L		89	60 - 126	25	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	55.5		ug/L		111	57 - 141	9	20
Vinyl chloride	<0.50	F2	50.0	47.8	F2	ug/L		96	70 - 126	22	20
Xylenes, Total	1.2		100	105		ug/L		103	70 - 125	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*
Dibromofluoromethane	*101*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*
Toluene-d8 (Surr)	*101*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-334095/1-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 334095

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		05/05/16 08:14	05/13/16 18:48	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		05/05/16 08:14	05/13/16 18:48	1
Acetophenone	<4.0		4.0	0.53	ug/L		05/05/16 08:14	05/13/16 18:48	1
Anthracene	<0.80		0.80	0.27	ug/L		05/05/16 08:14	05/13/16 18:48	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		05/05/16 08:14	05/13/16 18:48	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		05/05/16 08:14	05/13/16 18:48	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		05/05/16 08:14	05/13/16 18:48	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		05/05/16 08:14	05/13/16 18:48	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		05/05/16 08:14	05/13/16 18:48	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		05/05/16 08:14	05/13/16 18:48	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		05/05/16 08:14	05/13/16 18:48	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		05/05/16 08:14	05/13/16 18:48	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		05/05/16 08:14	05/13/16 18:48	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		05/05/16 08:14	05/13/16 18:48	1
Carbazole	<4.0		4.0	0.28	ug/L		05/05/16 08:14	05/13/16 18:48	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		05/05/16 08:14	05/13/16 18:48	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		05/05/16 08:14	05/13/16 18:48	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		05/05/16 08:14	05/13/16 18:48	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		05/05/16 08:14	05/13/16 18:48	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		05/05/16 08:14	05/13/16 18:48	1
Chrysene	<0.40		0.40	0.055	ug/L		05/05/16 08:14	05/13/16 18:48	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		05/05/16 08:14	05/13/16 18:48	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		05/05/16 08:14	05/13/16 18:48	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		05/05/16 08:14	05/13/16 18:48	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		05/05/16 08:14	05/13/16 18:48	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		05/05/16 08:14	05/13/16 18:48	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		05/05/16 08:14	05/13/16 18:48	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,6-Dinitrotoluene	<0.40		0.40	0.059	ug/L		05/05/16 08:14	05/13/16 18:48	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		05/05/16 08:14	05/13/16 18:48	1
Fluoranthene	<0.80		0.80	0.36	ug/L		05/05/16 08:14	05/13/16 18:48	1
Fluorene	<0.80		0.80	0.20	ug/L		05/05/16 08:14	05/13/16 18:48	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		05/05/16 08:14	05/13/16 18:48	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		05/05/16 08:14	05/13/16 18:48	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		05/05/16 08:14	05/13/16 18:48	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		05/05/16 08:14	05/13/16 18:48	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		05/05/16 08:14	05/13/16 18:48	1
Isophorone	<1.6		1.6	0.30	ug/L		05/05/16 08:14	05/13/16 18:48	1
2-Methylnaphthalene	<0.40		0.40	0.052	ug/L		05/05/16 08:14	05/13/16 18:48	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		05/05/16 08:14	05/13/16 18:48	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		05/05/16 08:14	05/13/16 18:48	1
Naphthalene	<0.80		0.80	0.25	ug/L		05/05/16 08:14	05/13/16 18:48	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		05/05/16 08:14	05/13/16 18:48	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		05/05/16 08:14	05/13/16 18:48	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-334095/1-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 334095

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	<8.0		8.0	1.3	ug/L		05/05/16 08:14	05/13/16 18:48	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		05/05/16 08:14	05/13/16 18:48	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		05/05/16 08:14	05/13/16 18:48	1
4-Nitrophenol	<16		16	5.9	ug/L		05/05/16 08:14	05/13/16 18:48	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		05/05/16 08:14	05/13/16 18:48	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		05/05/16 08:14	05/13/16 18:48	1
Pentachlorophenol	<16		16	3.2	ug/L		05/05/16 08:14	05/13/16 18:48	1
Phenanthrene	<0.80		0.80	0.24	ug/L		05/05/16 08:14	05/13/16 18:48	1
Phenol	<4.0		4.0	0.54	ug/L		05/05/16 08:14	05/13/16 18:48	1
Pyrene	<0.80		0.80	0.34	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		05/05/16 08:14	05/13/16 18:48	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		05/05/16 08:14	05/13/16 18:48	1
Benzaldehyde	<16	^	16	12	ug/L		05/05/16 08:14	05/13/16 18:48	1
Caprolactam	<8.0		8.0	1.2	ug/L		05/05/16 08:14	05/13/16 18:48	1
Atrazine	<4.0		4.0	0.50	ug/L		05/05/16 08:14	05/13/16 18:48	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		05/05/16 08:14	05/13/16 18:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*75*		*30 - 123*	*05/05/16 08:14*	*05/13/16 18:48*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*05/05/16 08:14*	*05/13/16 18:48*	*1*
Nitrobenzene-d5 (Surr)	*75*		*33 - 139*	*05/05/16 08:14*	*05/13/16 18:48*	*1*
Phenol-d5 (Surr)	*51*		*20 - 100*	*05/05/16 08:14*	*05/13/16 18:48*	*1*
Terphenyl-d14 (Surr)	*108*		*42 - 150*	*05/05/16 08:14*	*05/13/16 18:48*	*1*
2,4,6-Tribromophenol (Surr)	*83*		*30 - 150*	*05/05/16 08:14*	*05/13/16 18:48*	*1*

Lab Sample ID: LCS 500-334095/2-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 334095

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	22.2		ug/L		69	41 - 112
Acenaphthylene	32.0	21.4		ug/L		67	48 - 110
Acetophenone	32.0	25.8		ug/L		81	54 - 116
Anthracene	32.0	27.7		ug/L		87	65 - 118
Benzo[a]anthracene	32.0	30.1		ug/L		94	69 - 121
Benzo[a]pyrene	32.0	32.8		ug/L		102	69 - 130
Benzo[b]fluoranthene	32.0	34.0		ug/L		106	66 - 133
Benzo[g,h,i]perylene	32.0	28.7		ug/L		90	47 - 145
Benzo[k]fluoranthene	32.0	30.7		ug/L		96	64 - 134
Bis(2-chloroethoxy)methane	32.0	26.7		ug/L		83	55 - 115
Bis(2-chloroethyl)ether	32.0	24.8		ug/L		77	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	31.3		ug/L		98	60 - 132
4-Bromophenyl phenyl ether	32.0	23.5		ug/L		73	60 - 124
Butyl benzyl phthalate	32.0	31.3		ug/L		98	63 - 127
Carbazole	32.0	33.3		ug/L		104	71 - 132
4-Chloroaniline	32.0	17.0		ug/L		53	15 - 125
4-Chloro-3-methylphenol	32.0	28.3		ug/L		89	63 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-334095/2-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 334095

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloronaphthalene	32.0	18.9		ug/L		59	38 - 110
2-Chlorophenol	32.0	23.6		ug/L		74	49 - 110
4-Chlorophenyl phenyl ether	32.0	20.8		ug/L		65	55 - 115
Chrysene	32.0	29.4		ug/L		92	70 - 126
Dibenz(a,h)anthracene	32.0	31.7		ug/L		99	59 - 145
Dibenzofuran	32.0	21.6		ug/L		68	54 - 111
3,3'-Dichlorobenzidine	32.0	33.3		ug/L		104	57 - 145
2,4-Dichlorophenol	32.0	25.8		ug/L		80	53 - 123
Diethyl phthalate	32.0	29.1		ug/L		91	64 - 126
2,4-Dimethylphenol	32.0	26.3		ug/L		82	42 - 115
Dimethyl phthalate	32.0	28.3		ug/L		89	66 - 120
Di-n-butyl phthalate	32.0	30.4		ug/L		95	67 - 125
4,6-Dinitro-2-methylphenol	64.0	59.0		ug/L		92	34 - 152
2,4-Dinitrophenol	64.0	57.8		ug/L		90	20 - 140
2,4-Dinitrotoluene	32.0	30.1		ug/L		94	67 - 131
2,6-Dinitrotoluene	32.0	27.6		ug/L		86	66 - 125
Di-n-octyl phthalate	32.0	32.3		ug/L		101	63 - 133
Fluoranthene	32.0	30.4		ug/L		95	68 - 127
Fluorene	32.0	23.0		ug/L		72	54 - 113
Hexachlorobenzene	32.0	26.4		ug/L		82	63 - 127
Hexachlorobutadiene	32.0	15.9		ug/L		50	20 - 110
Hexachlorocyclopentadiene	32.0	12.2	J	ug/L		38	10 - 110
Hexachloroethane	32.0	15.1		ug/L		47	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	29.2		ug/L		91	52 - 150
Isophorone	32.0	25.0		ug/L		78	55 - 120
2-Methylnaphthalene	32.0	18.4		ug/L		58	32 - 110
2-Methylphenol	32.0	25.0		ug/L		78	49 - 113
3 & 4 Methylphenol	32.0	25.6		ug/L		80	49 - 114
Naphthalene	32.0	18.7		ug/L		59	32 - 110
2-Nitroaniline	32.0	28.4		ug/L		89	61 - 126
3-Nitroaniline	32.0	27.4		ug/L		86	42 - 134
4-Nitroaniline	32.0	27.3		ug/L		85	40 - 142
Nitrobenzene	32.0	24.3		ug/L		76	49 - 116
2-Nitrophenol	32.0	25.7		ug/L		80	51 - 120
4-Nitrophenol	64.0	39.2		ug/L		61	21 - 110
N-Nitrosodi-n-propylamine	32.0	27.0		ug/L		84	52 - 122
N-Nitrosodiphenylamine	32.0	29.0		ug/L		91	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	21.9		ug/L		68	34 - 110
Pentachlorophenol	64.0	59.1		ug/L		92	29 - 138
Phenanthrene	32.0	27.0		ug/L		84	63 - 121
Phenol	32.0	16.6		ug/L		52	33 - 100
Pyrene	32.0	29.6		ug/L		92	65 - 122
2,4,5-Trichlorophenol	32.0	28.4		ug/L		89	63 - 121
2,4,6-Trichlorophenol	32.0	27.4		ug/L		86	61 - 120
Caprolactam	32.0	18.9		ug/L		59	25 - 100
Atrazine	32.0	24.6		ug/L		77	57 - 128
1,1'-Biphenyl	32.0	19.7		ug/L		62	42 - 110

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-334095/2-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 334095

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*77*		*30 - 123*
2-Fluorophenol (Surr)	*67*		*30 - 110*
Nitrobenzene-d5 (Surr)	*81*		*33 - 139*
Phenol-d5 (Surr)	*57*		*20 - 100*
Terphenyl-d14 (Surr)	*103*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*

Lab Sample ID: LCS 500-334095/2-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 334095

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzaldehyde	32.0	128	^ *	ug/L		400	10 - 200

Lab Sample ID: LCSD 500-334095/3-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 334095

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	23.9		ug/L		75	41 - 112	8	20
Acenaphthylene	32.0	23.0		ug/L		72	48 - 110	7	20
Acetophenone	32.0	27.6		ug/L		86	54 - 116	7	20
Anthracene	32.0	29.4		ug/L		92	65 - 118	6	20
Benzo[a]anthracene	32.0	31.5		ug/L		99	69 - 121	5	20
Benzo[a]pyrene	32.0	35.2		ug/L		110	69 - 130	7	20
Benzo[b]fluoranthene	32.0	34.7		ug/L		108	66 - 133	2	20
Benzo[g,h,i]perylene	32.0	30.3		ug/L		95	47 - 145	5	20
Benzo[k]fluoranthene	32.0	35.1		ug/L		110	64 - 134	13	20
Bis(2-chloroethoxy)methane	32.0	27.7		ug/L		87	55 - 115	4	20
Bis(2-chloroethyl)ether	32.0	27.1		ug/L		85	46 - 110	9	20
Bis(2-ethylhexyl) phthalate	32.0	33.4		ug/L		104	60 - 132	6	20
4-Bromophenyl phenyl ether	32.0	26.1		ug/L		82	60 - 124	10	20
Butyl benzyl phthalate	32.0	33.2		ug/L		104	63 - 127	6	20
Carbazole	32.0	33.4		ug/L		105	71 - 132	1	20
4-Chloroaniline	32.0	12.3	*	ug/L		38	15 - 125	32	20
4-Chloro-3-methylphenol	32.0	29.7		ug/L		93	63 - 120	5	20
2-Chloronaphthalene	32.0	20.6		ug/L		64	38 - 110	9	20
2-Chlorophenol	32.0	25.2		ug/L		79	49 - 110	7	20
4-Chlorophenyl phenyl ether	32.0	23.3		ug/L		73	55 - 115	11	20
Chrysene	32.0	31.0		ug/L		97	70 - 126	5	20
Dibenz(a,h)anthracene	32.0	34.5		ug/L		108	59 - 145	9	20
Dibenzofuran	32.0	23.4		ug/L		73	54 - 111	8	20
3,3'-Dichlorobenzidine	32.0	34.0		ug/L		106	57 - 145	2	20
2,4-Dichlorophenol	32.0	26.8		ug/L		84	53 - 123	4	20
Diethyl phthalate	32.0	30.8		ug/L		96	64 - 126	6	20
2,4-Dimethylphenol	32.0	19.2	*	ug/L		60	42 - 115	31	20
Dimethyl phthalate	32.0	30.4		ug/L		95	66 - 120	7	20
Di-n-butyl phthalate	32.0	32.1		ug/L		100	67 - 125	6	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-334095/3-A
Matrix: Water
Analysis Batch: 335398

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 334095

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,6-Dinitro-2-methylphenol			64.0	64.1		ug/L		100	34 - 152	8	20
2,4-Dinitrophenol			64.0	63.9		ug/L		100	20 - 140	10	20
2,4-Dinitrotoluene			32.0	31.9		ug/L		100	67 - 131	6	20
2,6-Dinitrotoluene			32.0	29.8		ug/L		93	66 - 125	8	20
Di-n-octyl phthalate			32.0	34.1		ug/L		106	63 - 133	5	20
Fluoranthene			32.0	32.0		ug/L		100	68 - 127	5	20
Fluorene			32.0	25.0		ug/L		78	54 - 113	8	20
Hexachlorobenzene			32.0	28.6		ug/L		89	63 - 127	8	20
Hexachlorobutadiene			32.0	17.1		ug/L		54	20 - 110	8	20
Hexachlorocyclopentadiene			32.0	14.8	J	ug/L		46	10 - 110	19	20
Hexachloroethane			32.0	16.6		ug/L		52	20 - 110	10	20
Indeno[1,2,3-cd]pyrene			32.0	31.2		ug/L		98	52 - 150	7	20
Isophorone			32.0	26.5		ug/L		83	55 - 120	6	20
2-Methylnaphthalene			32.0	19.6		ug/L		61	32 - 110	6	20
2-Methylphenol			32.0	25.8		ug/L		81	49 - 113	3	20
3 & 4 Methylphenol			32.0	26.6		ug/L		83	49 - 114	4	20
Naphthalene			32.0	19.4		ug/L		61	32 - 110	4	20
2-Nitroaniline			32.0	30.7		ug/L		96	61 - 126	8	20
3-Nitroaniline			32.0	26.3		ug/L		82	42 - 134	4	20
4-Nitroaniline			32.0	29.4		ug/L		92	40 - 142	7	20
Nitrobenzene			32.0	25.6		ug/L		80	49 - 116	5	20
2-Nitrophenol			32.0	27.3		ug/L		85	51 - 120	6	20
4-Nitrophenol			64.0	39.3		ug/L		61	21 - 110	0	20
N-Nitrosodi-n-propylamine			32.0	28.7		ug/L		90	52 - 122	6	20
N-Nitrosodiphenylamine			32.0	28.7		ug/L		90	63 - 117	1	20
2,2'-oxybis[1-chloropropane]			32.0	23.5		ug/L		74	34 - 110	7	20
Pentachlorophenol			64.0	62.6		ug/L		98	29 - 138	6	20
Phenanthrene			32.0	28.9		ug/L		90	63 - 121	7	20
Phenol			32.0	18.0		ug/L		56	33 - 100	8	20
Pyrene			32.0	30.9		ug/L		97	65 - 122	4	20
2,4,5-Trichlorophenol			32.0	30.5		ug/L		95	63 - 121	7	20
2,4,6-Trichlorophenol			32.0	29.0		ug/L		91	61 - 120	6	20
Caprolactam			32.0	20.2		ug/L		63	25 - 100	7	20
Atrazine			32.0	26.9		ug/L		84	57 - 128	9	20
1,1'-Biphenyl			32.0	21.4		ug/L		67	42 - 110	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*82*		*30 - 123*
2-Fluorophenol (Surr)	*71*		*30 - 110*
Nitrobenzene-d5 (Surr)	*83*		*33 - 139*
Phenol-d5 (Surr)	*59*		*20 - 100*
Terphenyl-d14 (Surr)	*104*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-334095/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335398 — **Prep Batch: 334095**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzaldehyde	32.0	124	* ^	ug/L		389	10 - 200	3	20

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-333645/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333747 — **Prep Batch: 333645**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		05/02/16 16:20	05/03/16 14:37	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		05/02/16 16:20	05/03/16 14:37	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		05/02/16 16:20	05/03/16 14:37	1
beta-BHC	<0.040		0.040	0.010	ug/L		05/02/16 16:20	05/03/16 14:37	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		05/02/16 16:20	05/03/16 14:37	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		05/02/16 16:20	05/03/16 14:37	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		05/02/16 16:20	05/03/16 14:37	1
delta-BHC	<0.040		0.040	0.010	ug/L		05/02/16 16:20	05/03/16 14:37	1
Dieldrin	<0.040		0.040	0.013	ug/L		05/02/16 16:20	05/03/16 14:37	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		05/02/16 16:20	05/03/16 14:37	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		05/02/16 16:20	05/03/16 14:37	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		05/02/16 16:20	05/03/16 14:37	1
Endrin	<0.040		0.040	0.014	ug/L		05/02/16 16:20	05/03/16 14:37	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		05/02/16 16:20	05/03/16 14:37	1
Endrin ketone	<0.040		0.040	0.017	ug/L		05/02/16 16:20	05/03/16 14:37	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		05/02/16 16:20	05/03/16 14:37	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		05/02/16 16:20	05/03/16 14:37	1
Heptachlor	<0.040		0.040	0.014	ug/L		05/02/16 16:20	05/03/16 14:37	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		05/02/16 16:20	05/03/16 14:37	1
Methoxychlor	<0.080		0.080	0.023	ug/L		05/02/16 16:20	05/03/16 14:37	1
Toxaphene	<0.40		0.40	0.20	ug/L		05/02/16 16:20	05/03/16 14:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*109*		*30 - 143*	*05/02/16 16:20*	*05/03/16 14:37*	*1*
Tetrachloro-m-xylene	*78*		*30 - 120*	*05/02/16 16:20*	*05/03/16 14:37*	*1*

Lab Sample ID: LCS 500-333645/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333747 — **Prep Batch: 333645**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.332		ug/L		104	40 - 130
alpha-BHC	0.320	0.327		ug/L		102	70 - 130
alpha-Chlordane	0.320	0.310		ug/L		97	70 - 130
beta-BHC	0.320	0.339		ug/L		106	70 - 130
4,4'-DDD	0.320	0.351		ug/L		110	70 - 130
4,4'-DDE	0.320	0.331		ug/L		103	56 - 130
4,4'-DDT	0.320	0.305		ug/L		95	50 - 137
delta-BHC	0.320	0.381		ug/L		119	70 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-333645/2-A
Matrix: Water
Analysis Batch: 333747

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333645

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dieldrin	0.320	0.304		ug/L		95	70 - 130
Endosulfan I	0.320	0.267		ug/L		84	40 - 130
Endosulfan II	0.320	0.282		ug/L		88	49 - 130
Endosulfan sulfate	0.320	0.347		ug/L		108	70 - 130
Endrin	0.320	0.321		ug/L		100	69 - 130
Endrin aldehyde	0.320	0.292		ug/L		91	63 - 130
Endrin ketone	0.320	0.377		ug/L		118	54 - 141
gamma-BHC (Lindane)	0.320	0.343		ug/L		107	70 - 130
gamma-Chlordane	0.320	0.305		ug/L		95	63 - 130
Heptachlor	0.320	0.309		ug/L		97	40 - 130
Heptachlor epoxide	0.320	0.296		ug/L		92	70 - 130
Methoxychlor	0.320	0.305		ug/L		95	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*100*		*30 - 143*
Tetrachloro-m-xylene	*80*		*30 - 120*

Lab Sample ID: LCSD 500-333645/3-A
Matrix: Water
Analysis Batch: 333747

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 333645

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.306		ug/L		95	40 - 130	8	20
alpha-BHC	0.320	0.300		ug/L		94	70 - 130	9	20
alpha-Chlordane	0.320	0.282		ug/L		88	70 - 130	9	20
beta-BHC	0.320	0.303		ug/L		95	70 - 130	11	20
4,4'-DDD	0.320	0.312		ug/L		97	70 - 130	12	20
4,4'-DDE	0.320	0.284		ug/L		89	56 - 130	15	20
4,4'-DDT	0.320	0.279		ug/L		87	50 - 137	9	20
delta-BHC	0.320	0.340		ug/L		106	70 - 130	11	20
Dieldrin	0.320	0.278		ug/L		87	70 - 130	9	20
Endosulfan I	0.320	0.261		ug/L		82	40 - 130	2	20
Endosulfan II	0.320	0.256		ug/L		80	49 - 130	10	20
Endosulfan sulfate	0.320	0.301		ug/L		94	70 - 130	14	20
Endrin	0.320	0.291		ug/L		91	69 - 130	10	20
Endrin aldehyde	0.320	0.282		ug/L		88	63 - 130	3	20
Endrin ketone	0.320	0.319		ug/L		100	54 - 141	17	20
gamma-BHC (Lindane)	0.320	0.314		ug/L		98	70 - 130	9	20
gamma-Chlordane	0.320	0.277		ug/L		87	63 - 130	10	20
Heptachlor	0.320	0.287		ug/L		90	40 - 130	8	20
Heptachlor epoxide	0.320	0.269		ug/L		84	70 - 130	9	20
Methoxychlor	0.320	0.286		ug/L		89	47 - 153	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*96*		*30 - 143*
Tetrachloro-m-xylene	*75*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-333645/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333763 — **Prep Batch: 333645**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		05/02/16 16:20	05/03/16 16:19	1
PCB-1221	<0.40		0.40	0.20	ug/L		05/02/16 16:20	05/03/16 16:19	1
PCB-1232	<0.40		0.40	0.20	ug/L		05/02/16 16:20	05/03/16 16:19	1
PCB-1242	<0.40		0.40	0.20	ug/L		05/02/16 16:20	05/03/16 16:19	1
PCB-1248	<0.40		0.40	0.20	ug/L		05/02/16 16:20	05/03/16 16:19	1
PCB-1254	<0.40		0.40	0.20	ug/L		05/02/16 16:20	05/03/16 16:19	1
PCB-1260	<0.40		0.40	0.070	ug/L		05/02/16 16:20	05/03/16 16:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*78*		*30 - 127*	*05/02/16 16:20*	*05/03/16 16:19*	*1*
DCB Decachlorobiphenyl	*89*		*30 - 150*	*05/02/16 16:20*	*05/03/16 16:19*	*1*

Lab Sample ID: LCS 500-333645/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333763 — **Prep Batch: 333645**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.35		ug/L		84	58 - 121
PCB-1260	4.00	3.48		ug/L		87	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*73*		*30 - 127*
DCB Decachlorobiphenyl	*87*		*30 - 150*

Lab Sample ID: LCSD 500-333645/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333763 — **Prep Batch: 333645**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.33		ug/L		83	58 - 121	0	20
PCB-1260	4.00	3.54		ug/L		88	62 - 137	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*79*		*30 - 127*
DCB Decachlorobiphenyl	*96*		*30 - 150*

Lab Sample ID: MB 500-334022/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335130 — **Prep Batch: 334022**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		05/04/16 16:40	05/12/16 10:16	1
PCB-1221	<0.40		0.40	0.20	ug/L		05/04/16 16:40	05/12/16 10:16	1
PCB-1232	<0.40		0.40	0.20	ug/L		05/04/16 16:40	05/12/16 10:16	1
PCB-1242	<0.40		0.40	0.20	ug/L		05/04/16 16:40	05/12/16 10:16	1
PCB-1248	<0.40		0.40	0.20	ug/L		05/04/16 16:40	05/12/16 10:16	1
PCB-1254	<0.40		0.40	0.20	ug/L		05/04/16 16:40	05/12/16 10:16	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-334022/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335130 — **Prep Batch: 334022**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	<0.40		0.40	0.070	ug/L		05/04/16 16:40	05/12/16 10:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*05/04/16 16:40*	*05/12/16 10:16*	*1*
DCB Decachlorobiphenyl	*83*		*30 - 150*	*05/04/16 16:40*	*05/12/16 10:16*	*1*

Lab Sample ID: LCS 500-334022/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335130 — **Prep Batch: 334022**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	2.95		ug/L		74	58 - 121
PCB-1260	4.00	2.96		ug/L		74	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*71*		*30 - 127*
DCB Decachlorobiphenyl	*71*		*30 - 150*

Lab Sample ID: LCSD 500-334022/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335130 — **Prep Batch: 334022**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.54		ug/L		88	58 - 121	18	20
PCB-1260	4.00	3.59		ug/L		90	62 - 137	19	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*81*		*30 - 127*
DCB Decachlorobiphenyl	*83*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-333552/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333883 — **Prep Batch: 333552**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 18:29	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 18:29	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:29	1
Barium	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 18:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 18:29	1
Calcium	<0.20		0.20	0.059	mg/L		05/02/16 09:28	05/03/16 18:29	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 18:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 18:29	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:29	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-333552/1-A
Matrix: Water
Analysis Batch: 333883

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 333552

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.20		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 18:29	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 18:29	1
Magnesium	<0.10		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 18:29	1
Manganese	<0.010		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 18:29	1
Nickel	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:29	1
Potassium	<0.50		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 18:29	1
Selenium	0.00568	J	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 18:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 18:29	1
Sodium	<1.0		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 18:29	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 18:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 18:29	1
Zinc	<0.020		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 18:29	1

Lab Sample ID: LCS 500-333552/2-A
Matrix: Water
Analysis Batch: 333883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 333552

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.91		mg/L		96	80 - 120
Antimony	0.500	0.459		mg/L		92	80 - 120
Arsenic	0.100	0.0872		mg/L		87	80 - 120
Barium	2.00	1.92		mg/L		96	80 - 120
Beryllium	0.0500	0.0481		mg/L		96	80 - 120
Cadmium	0.0500	0.0465		mg/L		93	80 - 120
Calcium	10.0	9.33		mg/L		93	80 - 120
Chromium	0.200	0.195		mg/L		98	80 - 120
Cobalt	0.500	0.482		mg/L		96	80 - 120
Copper	0.250	0.238		mg/L		95	80 - 120
Iron	1.00	1.05		mg/L		105	80 - 120
Lead	0.100	0.0933		mg/L		93	80 - 120
Magnesium	10.0	9.48		mg/L		95	80 - 120
Manganese	0.500	0.479		mg/L		96	80 - 120
Nickel	0.500	0.473		mg/L		95	80 - 120
Potassium	10.0	9.55		mg/L		96	80 - 120
Selenium	0.100	0.0898		mg/L		90	80 - 120
Silver	0.0500	0.0467		mg/L		93	80 - 120
Sodium	10.0	9.46		mg/L		95	80 - 120
Thallium	0.100	0.0893		mg/L		89	80 - 120
Vanadium	0.500	0.494		mg/L		99	80 - 120
Zinc	0.500	0.466		mg/L		93	80 - 120

Lab Sample ID: LCSD 500-333552/3-A
Matrix: Water
Analysis Batch: 333883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 333552

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	2.00	1.94		mg/L		97	80 - 120	2	20
Antimony	0.500	0.452		mg/L		90	80 - 120	2	20
Arsenic	0.100	0.0868		mg/L		87	80 - 120	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 500-333552/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333883 — **Prep Batch: 333552**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	2.00	1.92		mg/L		96	80 - 120	0	20
Beryllium	0.0500	0.0475		mg/L		95	80 - 120	1	20
Cadmium	0.0500	0.0457		mg/L		91	80 - 120	2	20
Calcium	10.0	9.30		mg/L		93	80 - 120	0	20
Chromium	0.200	0.188		mg/L		94	80 - 120	4	20
Cobalt	0.500	0.473		mg/L		95	80 - 120	2	20
Copper	0.250	0.229		mg/L		92	80 - 120	4	20
Iron	1.00	1.00		mg/L		100	80 - 120	4	20
Lead	0.100	0.0932		mg/L		93	80 - 120	0	20
Magnesium	10.0	9.44		mg/L		94	80 - 120	0	20
Manganese	0.500	0.476		mg/L		95	80 - 120	1	20
Nickel	0.500	0.466		mg/L		93	80 - 120	1	20
Potassium	10.0	9.52		mg/L		95	80 - 120	0	20
Selenium	0.100	0.0896		mg/L		90	80 - 120	0	20
Silver	0.0500	0.0448		mg/L		90	80 - 120	4	20
Sodium	10.0	9.45		mg/L		95	80 - 120	0	20
Thallium	0.100	0.0876		mg/L		88	80 - 120	2	20
Vanadium	0.500	0.474		mg/L		95	80 - 120	4	20
Zinc	0.500	0.458		mg/L		92	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-334006/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334156 — **Prep Batch: 334006**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 10:54	1

Lab Sample ID: LCS 500-334006/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334156 — **Prep Batch: 334006**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00191		mg/L		96	80 - 120

Lab Sample ID: 500-110948-1 MS — **Client Sample ID: MW-2-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334156 — **Prep Batch: 334006**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.000909		mg/L		91	75 - 125

Lab Sample ID: 500-110948-1 MSD — **Client Sample ID: MW-2-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334156 — **Prep Batch: 334006**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.000921		mg/L		92	75 - 125	1	20

Lab Sample ID: 500-110948-1 DU — **Client Sample ID: MW-2-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334156 — **Prep Batch: 334006**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	<0.00020			<0.00020		mg/L				NC	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-333690/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 04:59	1

Lab Sample ID: LCS 500-333690/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333690

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			4.02	4.10		mg/L		102	80 - 120		

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-333553/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333553

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0	2.0	mg/L			05/02/16 09:03	1

Lab Sample ID: LCS 500-333553/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 333553

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			20.0	19.6		mg/L		98	80 - 120		

Lab Sample ID: MB 500-334094/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334094

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0	2.0	mg/L			05/05/16 07:44	1

Lab Sample ID: LCS 500-334094/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334094

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			20.0	19.0		mg/L		95	80 - 120		

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: MB 500-334308/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:04	1

Lab Sample ID: LCS 500-334308/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.4		mg/L		97	80 - 120

Lab Sample ID: 500-110948-1 MS — **Client Sample ID: MW-2-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<5.0		20.0	20.5		mg/L		102	75 - 125

Lab Sample ID: 500-110948-1 MSD — **Client Sample ID: MW-2-GW-04282016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 334308

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<5.0		20.0	21.7		mg/L		108	75 - 125	6	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-335506/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335506

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.23	mg/L			05/13/16 18:29	1

Lab Sample ID: LCS 500-335506/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 335506

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	8.95		mg/L		89	80 - 120
TOC Result 1	10.0	8.92		mg/L		89	80 - 120
TOC Result 2	10.0	8.98		mg/L		90	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-333768/1
Matrix: Water
Analysis Batch: 333768

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.6	mg/L			05/03/16 11:20	1

Lab Sample ID: LCS 500-333768/2
Matrix: Water
Analysis Batch: 333768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	193		mg/L		97	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-335077/1-A
Matrix: Water
Analysis Batch: 335265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 335077

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0570	J	0.20	0.043	mg/L		05/11/16 18:12	05/12/16 18:32	1

Lab Sample ID: LCS 500-335077/2-A
Matrix: Water
Analysis Batch: 335265

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 335077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.38		mg/L		95	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-333433/3
Matrix: Water
Analysis Batch: 333433

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:15	1

Lab Sample ID: LCS 500-333433/4
Matrix: Water
Analysis Batch: 333433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.103		mg/L		103	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-335172/12
Matrix: Water
Analysis Batch: 335172

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:28	1

Lab Sample ID: LCS 500-335172/13
Matrix: Water
Analysis Batch: 335172

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	1.04		mg/L		104	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Lab Sample ID: 500-110948-1
Date Collected: 04/28/16 16:17
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	335053	05/12/16 05:28	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	5	335053	05/12/16 05:55	PJH	TAL CHI
Total/NA	Prep	3510C	DL		334095	05/05/16 08:14	SML	TAL CHI
Total/NA	Analysis	8270D	DL	10	335266	05/13/16 00:51	GES	TAL CHI
Total/NA	Prep	3510C			334095	05/05/16 08:14	SML	TAL CHI
Total/NA	Analysis	8270D		1	335266	05/13/16 09:00	GES	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 15:35	PJG	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 17:06	RLL	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 18:58	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 18:49	PJ1	TAL CHI
Dissolved	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334156	05/05/16 11:25	MJD	TAL CHI
Total/NA	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334156	05/05/16 11:00	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:38		
					(End)	05/03/16 05:41		
Total/NA	Analysis	9038		1	334308		CLB	TAL CHI
					(Start)	05/06/16 09:17		
					(End)	05/06/16 09:18		
Total/NA	Analysis	9060A		1	335506	05/13/16 22:17	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	335008	05/13/16 15:09	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:44		
					(End)	05/03/16 11:45		
Total/NA	Prep	SM 4500 NH3 B			335077	05/11/16 18:12	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	335265	05/12/16 19:17	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333433		JBJ	TAL CHI
					(Start)	04/30/16 12:19		
					(End)	04/30/16 12:20		
Total/NA	Analysis	SM 4500 NO3 F		1	335172	05/12/16 09:32	CCK	TAL CHI

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2
Date Collected: 04/29/16 07:07
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	335112	05/12/16 18:46	EMA	TAL CHI
Total/NA	Prep	3510C			334095	05/05/16 08:14	SML	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2
Date Collected: 04/29/16 07:07
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	335266	05/13/16 01:18	GES	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 15:54	PJG	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 17:21	RLL	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 19:07	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 19:02	PJ1	TAL CHI
Dissolved	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334156	05/05/16 11:29	MJD	TAL CHI
Total/NA	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334156	05/05/16 11:27	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:41		
					(End)	05/03/16 05:44		
Total/NA	Analysis	9038		20	334308		CLB	TAL CHI
					(Start)	05/06/16 09:20		
					(End)	05/06/16 09:21		
Total/NA	Analysis	9060A		1	335506	05/13/16 22:38	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	335008	05/13/16 15:09	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:45		
					(End)	05/03/16 11:47		
Total/NA	Prep	SM 4500 NH3 B			335077	05/11/16 18:12	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	335265	05/12/16 19:20	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333433		JBJ	TAL CHI
					(Start)	04/30/16 12:20		
					(End)	04/30/16 12:20		
Total/NA	Analysis	SM 4500 NO3 F		1	335172	05/12/16 09:34	CCK	TAL CHI

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3
Date Collected: 04/29/16 08:47
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	335112	05/12/16 19:12	EMA	TAL CHI
Total/NA	Analysis	8260B	DL	5	335112	05/12/16 19:39	EMA	TAL CHI
Total/NA	Prep	3510C			334095	05/05/16 08:14	SML	TAL CHI
Total/NA	Analysis	8270D		10	335266	05/13/16 09:27	GES	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 16:13	PJG	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3
Date Collected: 04/29/16 08:47
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8082A		1	333763	05/03/16 17:36	RLL	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 19:18	PJ1	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		100	334271	05/05/16 15:46	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 19:12	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		100	334271	05/05/16 15:42	PJ1	TAL CHI
Dissolved	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334156	05/05/16 11:33	MJD	TAL CHI
Total/NA	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334156	05/05/16 11:31	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:44		
					(End)	05/03/16 05:47		
Total/NA	Analysis	9038		2	333553		CLB	TAL CHI
					(Start)	05/02/16 09:05		
					(End)	05/02/16 09:06		
Total/NA	Analysis	9060A		20	335506	05/13/16 22:58	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	335008	05/13/16 15:09	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:47		
					(End)	05/03/16 11:48		
Total/NA	Prep	SM 4500 NH3 B			335077	05/11/16 18:12	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		200	335265	05/12/16 20:12	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333433		JBJ	TAL CHI
					(Start)	04/30/16 12:21		
					(End)	04/30/16 12:22		
Total/NA	Analysis	SM 4500 NO3 F		2	335172	05/12/16 09:36	CCK	TAL CHI

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4
Date Collected: 04/29/16 10:47
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	335112	05/12/16 20:06	EMA	TAL CHI
Total/NA	Analysis	8260B	DL	5	335112	05/12/16 20:32	EMA	TAL CHI
Total/NA	Prep	3510C			334095	05/05/16 08:14	SML	TAL CHI
Total/NA	Analysis	8270D		10	335266	05/13/16 09:54	GES	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 16:33	PJG	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8082A		1	333763	05/03/16 17:52	RLL	TAL CHI
Total/NA	Prep	3510C	RE		334022	05/04/16 16:40	JP1	TAL CHI
Total/NA	Analysis	8082A	RE	1	335130	05/12/16 11:03	PJG	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 19:28	PJ1	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		100	334271	05/05/16 15:55	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 19:23	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		100	334271	05/05/16 15:51	PJ1	TAL CHI
Dissolved	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334156	05/05/16 11:37	MJD	TAL CHI
Total/NA	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334156	05/05/16 11:35	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:47		
					(End)	05/03/16 05:50		
Total/NA	Analysis	9038		20	334094		CLB	TAL CHI
					(Start)	05/05/16 07:46		
					(End)	05/05/16 07:47		
Total/NA	Analysis	9060A		20	335506	05/13/16 23:18	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	335008	05/13/16 15:09	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:48		
					(End)	05/03/16 11:50		
Total/NA	Prep	SM 4500 NH3 B			335077	05/11/16 18:12	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		200	335265	05/12/16 20:14	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333433		JBJ	TAL CHI
					(Start)	04/30/16 12:22		
					(End)	04/30/16 12:22		
Total/NA	Analysis	SM 4500 NO3 F		2	335172	05/12/16 09:38	CCK	TAL CHI

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	335112	05/12/16 21:00	EMA	TAL CHI
Total/NA	Prep	3510C			334095	05/05/16 08:14	SML	TAL CHI
Total/NA	Analysis	8270D		1	335398	05/14/16 02:12	GES	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 16:52	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 18:08	RLL	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 19:46	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 19:34	PJ1	TAL CHI
Dissolved	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334156	05/05/16 11:45	MJD	TAL CHI
Total/NA	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334156	05/05/16 11:39	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:50		
					(End)	05/03/16 05:52		
Total/NA	Analysis	9038		1	334308		CLB	TAL CHI
					(Start)	05/06/16 09:21		
					(End)	05/06/16 09:22		
Total/NA	Analysis	9060A		1	335506	05/13/16 23:39	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	335008	05/13/16 15:09	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:50		
					(End)	05/03/16 11:52		
Total/NA	Prep	SM 4500 NH3 B			335077	05/11/16 18:12	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	335265	05/12/16 19:28	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333433		JBJ	TAL CHI
					(Start)	04/30/16 12:22		
					(End)	04/30/16 12:23		
Total/NA	Analysis	SM 4500 NO3 F		1	335172	05/12/16 09:40	CCK	TAL CHI

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02
Matrix: Water
Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	335112	05/12/16 21:26	EMA	TAL CHI
Total/NA	Prep	3510C			334095	05/05/16 08:14	SML	TAL CHI
Total/NA	Analysis	8270D		1	335266	05/13/16 03:06	GES	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 17:11	PJG	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 18:23	RLL	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 19:57	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 19:51	PJ1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334156	05/05/16 11:49	MJD	TAL CHI
Total/NA	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334156	05/05/16 11:47	MJD	TAL CHI
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:52		
					(End)	05/03/16 05:55		
Total/NA	Analysis	9038		1	334308		CLB	TAL CHI
					(Start)	05/06/16 09:22		
					(End)	05/06/16 09:23		
Total/NA	Analysis	9060A		1	335506	05/13/16 23:59	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	335008	05/13/16 15:09	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:52		
					(End)	05/03/16 11:53		
Total/NA	Prep	SM 4500 NH3 B			335077	05/11/16 18:12	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	335265	05/12/16 19:31	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333433		JBJ	TAL CHI
					(Start)	04/30/16 12:23		
					(End)	04/30/16 12:23		
Total/NA	Analysis	SM 4500 NO3 F		1	335172	05/12/16 09:42	CCK	TAL CHI

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00
Date Received: 04/30/16 07:34

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	335112	05/12/16 21:52	EMA	TAL CHI
Total/NA	Analysis	8260B	DL	5	335112	05/12/16 22:18	EMA	TAL CHI
Total/NA	Prep	3510C			334095	05/05/16 08:14	SML	TAL CHI
Total/NA	Analysis	8270D		10	335266	05/13/16 10:21	GES	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8081B		1	333747	05/03/16 17:30	PJG	TAL CHI
Total/NA	Prep	3510C			333645	05/02/16 16:20	JP1	TAL CHI
Total/NA	Analysis	8082A		1	333763	05/03/16 18:39	RLL	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		1	333883	05/03/16 20:07	PJ1	TAL CHI
Dissolved	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Dissolved	Analysis	6010C		100	334271	05/05/16 16:03	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		1	333883	05/03/16 20:02	PJ1	TAL CHI
Total/NA	Prep	3010A			333552	05/02/16 09:28	JEF	TAL CHI
Total/NA	Analysis	6010C		100	334271	05/05/16 15:59	PJ1	TAL CHI
Dissolved	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	334156	05/05/16 11:52	MJD	TAL CHI
Total/NA	Prep	7470A			334006	05/04/16 15:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	334156	05/05/16 11:50	MJD	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00

Matrix: Water

Date Received: 04/30/16 07:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9034		1	333690		CLB	TAL CHI
					(Start)	05/03/16 05:55		
					(End)	05/03/16 05:58		
Total/NA	Analysis	9038		4	334308		CLB	TAL CHI
					(Start)	05/06/16 09:06		
					(End)	05/06/16 09:07		
Total/NA	Analysis	9060A		20	335506	05/14/16 00:19	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	335008	05/13/16 15:09	CCK	TAL CHI
Total/NA	Analysis	SM 2540D		1	333768		SMO	TAL CHI
					(Start)	05/03/16 11:53		
					(End)	05/03/16 11:55		
Total/NA	Prep	SM 4500 NH3 B			335077	05/11/16 18:12	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		200	335265	05/12/16 20:17	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	333433		JBJ	TAL CHI
					(Start)	04/30/16 12:23		
					(End)	04/30/16 12:24		
Total/NA	Analysis	SM 4500 NO3 F		2	335172	05/12/16 09:44	CCK	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 500-110948

Send Results to:

Contact & Company Name: Arcadis

Telephone: 312 575 3772

Address: 120 S. LaSalle St. Suite 1350 Chicago, IL

Fax:

City State Zip

E-mail Address: ellyn.gates@arcadis.com

Project Name/Location (City, State): LCCS (Chicago, IL)

Project #: CI001805.0002.00005

Sampler's Printed Name: Nicholas Ickes

Sampler's Signature:

	Preservative	E	E	C	C	A	A	
	Filtered (✓)				✓			
	# of Containers	6		1	1	1		9
	Container Information							

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

PARAMETER ANALYSIS & METHOD

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270D (MOD) List 4.2	8082A	8081B	7470A Mercury 6010C TAL Metals -Hg	7470A Mercury 6010C TAL Metals -Hg (Dissolved)	SM4500-NH3-G Ammonia	SM4500-NO3-F Nitrogen, Nitrate, Nitrite	See Special Instructions	REMARKS
1	MW-2-GW-04292016	4-28-16	1617		✓	W	X	X	X	X	X	X	X		
2	MW-10-GW-04292016	4-29-16	0707		✓	W	X	X	X	X	X	X	X		
3	MW-6-GW-0429 2016		0847		✓	W	X	X	X	X	X	X	X		
4	MW-7-GW-04292016		1047		✓	W	X	X	X	X	X	X	X		
5	MW-9-GW-04292016		1227		✓	W	X	X	X	X	X	X	X		
6	MW-8-GW-04292016		1402		✓	W	X	X	X	X	X	X	X		
7	DUP-2 (04292016)	↓	—		✓	W	X	X	X	X	X	X	X		

500-110948 COC

Special Instructions/Comments: 9034_Calc-Sulfide; 8260B-Target Compound List 4.2; 9060A-(MOD) Local Method; SM4500_NO2_B-Nitrogen, Nitrite; 9038-Sulfate; 2540D-Total Suspended Solids

☐ Special QA/QC Instructions(✓):

* Level IV Data Package

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: TestAmerica Chicago	Cooler Custody Seal (✓) ☒ Intact ☐ Not Intact	Printed Name: Nicholas Ickes	Printed Name: David Beckner	Printed Name: David Beckner	Printed Name: Ariel Sanchez
☒ Cooler packed with ice (✓)		Signature:	Signature: David Beckner	Signature: David Beckner	Signature: Ariel Sanchez
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: TA	Firm/Courier: TA	Firm: TA-Chicago
Shipping Tracking #:	Condition/Cooler Temp: 3.3, 3.6, 3.1	Date/Time: 4-29-16 1617	Date/Time: 4-29-16 1617	Date/Time: 4/29/16 17:05	Date/Time: 04/29/16 17:05

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-110948-1

Login Number: 110948
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1,3.3,3.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	Headspace larger than 1/4" in one or more vials, one vial with accpt. headspace
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-110948-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
5/16/2016 11:04:39 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Subcontract Data 4
Chain of Custody 23
Receipt Checklists 24

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-2

Job ID: 500-110948-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-110948-2

Comments
No additional comments.

Receipt
The samples were received on 4/30/2016 7:34 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.1º C, 3.3º C and 3.6º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 10, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-110948-2**

Pace Workorder: 18953

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, May 03, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 05/10/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 117

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 18953 500-110948-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
189530001	MW-2-GW-04282016	Water	4/28/2016 16:17	5/3/2016 11:45
189530002	MW-10-GW-04292016	Water	4/29/2016 07:07	5/3/2016 11:45
189530003	MW-6-GW-04292016	Water	4/29/2016 08:47	5/3/2016 11:45
189530004	MW-7-GW-04292016	Water	4/29/2016 10:47	5/3/2016 11:45
189530005	MW-9-GW-04292016	Water	4/29/2016 12:27	5/3/2016 11:45
189530006	MW-8-GW-042922016	Water	4/29/2016 14:02	5/3/2016 11:45
189530007	DUP-2 (04292016)	Water	4/29/2016 00:00	5/3/2016 11:45

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PROJECT SUMMARY

Workorder: 18953 500-110948-2

Workorder Comments

The analysis for light hydrocarbons/dissolved gases, method AM20GAx, was reported at dilution for samples 18953 (0003-0004, 0007) due to foaming during the headspace preparation/equilibration of the sample.

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ANALYTICAL RESULTS

Workorder: 18953 500-110948-2

Lab ID: **189630001** Date Received: 5/3/2016 11:45 Matrix: Water

Sample ID: **MW-2-GW-04282016** Date Collected: 4/28/2016 16:17

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**19000**	ug/l	0.50	0.033	1	5/6/2016 11:37	GT	n
Carbon Dioxide	**280**	mg/l	5.0	0.26	1	5/6/2016 11:37	GT	n
Oxygen	**2.3**	mg/l	0.50	0.097	1	5/6/2016 11:37	GT	n
Nitrogen	**12**	mg/l	2.0	0.20	1	5/6/2016 11:37	GT	n

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ANALYTICAL RESULTS

Workorder: 18953 500-110948-2

Lab ID: 189530002 Date Received: 5/3/2016 11:45 Matrix: Water
Sample ID: MW-10-GW-04292016 Date Collected: 4/29/2016 07:07

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	720	ug/l	0.50	0.033	1	5/6/2016 11:50	GT	n
Carbon Dioxide	61	mg/l	5.0	0.26	1	5/6/2016 11:50	GT	n
Oxygen	4.7	mg/l	0.50	0.097	1	5/6/2016 11:50	GT	n
Nitrogen	29	mg/l	2.0	0.20	1	5/6/2016 11:50	GT	n

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ANALYTICAL RESULTS

Workorder: 18953 500-110948-2

Lab ID: **189530003** Date Received: 5/3/2016 11:45 Matrix: Water

Sample ID: **MW-6-GW-04292016** Date Collected: 4/29/2016 08:47

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	24000	ug/l	2.0	0.13	4	5/6/2016 12:53	GT	d,n
Carbon Dioxide	25	mg/l	20	1.0	4	5/6/2016 12:53	GT	d,n
Oxygen	5.4	mg/l	2.0	0.39	4	5/6/2016 12:53	GT	d,n
Nitrogen	18	mg/l	8.0	0.81	4	5/6/2016 12:53	GT	d,n

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ANALYTICAL RESULTS

Workorder: 18953 500-110948-2

Lab ID: **189530004** Date Received: 5/3/2016 11:45 Matrix: Water
Sample ID: **MW-7-GW-04292016** Date Collected: 4/29/2016 10:47

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	31000	ug/l	2.0	0.13	4	5/6/2016 13:06	GT	d,n
Carbon Dioxide	47	mg/l	20	1.0	4	5/6/2016 13:06	GT	d,n
Oxygen	5.9	mg/l	2.0	0.39	4	5/6/2016 13:06	GT	d,n
Nitrogen	23	mg/l	8.0	0.81	4	5/6/2016 13:06	GT	d,n

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ANALYTICAL RESULTS

Workorder: 18953 500-110948-2

Lab ID: 189530005 Date Received: 5/3/2016 11:45 Matrix: Water
Sample ID: MW-9-GW-04292016 Date Collected: 4/29/2016 12:27

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**16000**	ug/l	0.50	0.033	1	5/6/2016 12:16	GT	n
Carbon Dioxide	**410**	mg/l	5.0	0.26	1	5/6/2016 12:16	GT	n
Oxygen	**3.4**	mg/l	0.50	0.097	1	5/6/2016 12:16	GT	n
Nitrogen	**14**	mg/l	2.0	0.20	1	5/6/2016 12:16	GT	n

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ANALYTICAL RESULTS

Workorder: 18953 500-110948-2

Lab ID: 189530006 Date Received: 5/3/2016 11:45 Matrix: Water
Sample ID: MW-8-GW-042922016 Date Collected: 4/29/2016 14:02

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	14000	ug/l	0.50	0.033	1	5/6/2016 12:28	GT	n
Carbon Dioxide	200	mg/l	5.0	0.26	1	5/6/2016 12:28	GT	n
Oxygen	5.0	mg/l	0.50	0.097	1	5/6/2016 12:28	GT	n
Nitrogen	15	mg/l	2.0	0.20	1	5/6/2016 12:28	GT	n

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ANALYTICAL RESULTS

Workorder: 18953 500-110948-2

Lab ID: **189530007** Date Received: 5/3/2016 11:45 Matrix: Water
Sample ID: **DUP-2 (04292016)** Date Collected: 4/29/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - MICR								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**27000**	ug/l	2.0	0.13	4	5/6/2016 12:41	GT	d,n
Carbon Dioxide	**24**	mg/l	20	1.0	4	5/6/2016 12:41	GT	d,n
Oxygen	**5.5**	mg/l	2.0	0.39	4	5/6/2016 12:41	GT	d,n
Nitrogen	**21**	mg/l	8.0	0.81	4	5/6/2016 12:41	GT	d,n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 18953 500-110948-2

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAx, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
d	The analyte concentration was determined from a dilution.

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QUALITY CONTROL DATA

Workorder: 18953 500-110948-2

QC Batch: DISG/5344 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 189530001, 189530002, 189530003, 189530004, 189530005, 189530006, 189530007

METHOD BLANK: 41731

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 41732

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 41733 41735

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	810	820	108	110	80-120	1.8	20	n

LABORATORY CONTROL SAMPLE & LCSD: 41734 41736

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	112	112	80-120	0	20	n
Oxygen	mg/l	11	12	12	101	104	80-120	2.9	20	n
Nitrogen	mg/l	140	130	130	91	94	80-120	3.2	20	n

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QUALITY CONTROL DATA

Workorder: 18953 500-110948-2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 41760 41761 Original: 189360008

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Methane	ug/l	0.045	40	43	49	107	122	70-130	13	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 18953 500-110948-2

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 18953 500-110948-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
189530001	MW-2-GW-04282016			AM20GAX	DISG/5344
189530002	MW-10-GW-04292016			AM20GAX	DISG/5344
189530003	MW-6-GW-04292016			AM20GAX	DISG/5344
189530004	MW-7-GW-04292016			AM20GAX	DISG/5344
189530005	MW-9-GW-04292016			AM20GAX	DISG/5344
189530006	MW-8-GW-042922016			AM20GAX	DISG/5344
189530007	DUP-2 (04292016)			AM20GAX	DISG/5344

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Chain of Custody Documents

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

18953

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com	
Company: Pace Analytical Services, Inc.			
Address: 220 William Pitt Way,	Due Date Requested: 5/12/2016		
City: Pittsburgh	TAT Requested (days):		
State, Zip: PA, 15238			
Phone: 412-826-5245(Tel)	PO #:		
Email:	WO #:		
Project Name: Lake Calumet Cluster Site	Project #: 50011099		
Site:	SSOW#:		

COC No: 500-72826.1
Page: Page 1 of 1
Job #: 500-110948-2

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-2-GW-04282016 (500-110948-1)	4/28/16	16:17 Central		Water			X	2	
MW-10-GW-04292016 (500-110948-2)	4/29/16	07:07 Central		Water			X	2	
MW-6-GW-04292016 (500-110948-3)	4/29/16	08:47 Central		Water			X	2	
MW-7-GW-04292016 (500-110948-4)	4/29/16	10:47 Central		Water			X	2	
MW-9-GW-04292016 (500-110948-5)	4/29/16	12:27 Central		Water			X	2	
MW-8-GW-04292016 (500-110948-6)	4/29/16	14:02 Central		Water			X	2	
DUP-2 (04292016) (500-110948-7)	4/29/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

4°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 05/02/16 1430	Company TAL	Received by:	Date/Time: 5.3.16 1145	Company PACS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Cooler Receipt Form

Client Name: TA Chicago Project: 500-110948-2 Lab Work Order: 18953

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 6514 8423 7162

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 4°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LG Date: 5.3.16

Project Manager Review: RW Date: 5-4-16

F-PAB-Q-009-rev.00, 20 Nov2014

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 500-110948

Send Results to:

Contact & Company Name: Arcadis

Telephone: 312 575 3772

Address: 120 S. LaSalle St. Suite 1350 Chicago, IL

City State Zip

Fax:

E-mail Address: ellyn.gates@arcadis.com

Project Name/Location (City, State): LCCS (Chicago, IL)

Project #: CI001805.0002.00005

Sampler's Printed Name: Nicholas Ickes

Sampler's Signature:

	Preservative	E	E	C	C	A	A	
	Filtered (✓)				✓			
	# of Containers	6		1	1	1		9
	Container Information							

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

PARAMETER ANALYSIS & METHOD

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8260D (MOD) List 4.2	8082A	8081B	7470A Mercury 6010C TAL Metals -Hg	7470A Mercury 6010C TAL Metals -Hg (Dissolved)	SM4500-NH3-G Ammonia	SM4500-NO3-F Nitrogen, Nitrate, Nitrite	See Special Instructions	REMARKS
1	MW-2-GW-04292016	4-28-16	1617		✓	W	X	X	X	X	X	X	X		
2	MW-10-GW-04292016	4-29-16	0707		✓	W	X	X	X	X	X	X	X		
3	MW-6-GW-0429 2016	↓	0847		✓	W	X	X	X	X	X	X	X		
4	MW-7-GW-04292016	↓	1047		✓	W	X	X	X	X	X	X	X		
5	MW-9-GW-04292016	↓	1227		✓	W	X	X	X	X	X	X	X		
6	MW-8-GW-04292016	↓	1402		✓	W	X	X	X	X	X	X	X		
7	DUP-2 (04292016)	↓	—		✓	W	X	X	X	X	X	X	X		

500-110948 COC

Special Instructions/Comments: 9034_Calc-Sulfide; 8260B-Target Compound List 4.2; 9060A-(MOD) Local Method; SM4500_NO2_B-Nitrogen, Nitrite; 9038-Sulfate; 2540D-Total Suspended Solids

☐ Special QA/QC Instructions(✓):

* Level IV Data Package

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Test America Chicago	Cooler Custody Seal (✓)	Printed Name: Nicholas Ickes	Printed Name: David Beckner	Printed Name: David Beckner	Printed Name: Ariel Sanchez
☒ Cooler packed with ice (✓)	☒ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: TA	Firm/Courier: TA	Firm: TA-Chicago
Shipping Tracking #:	Condition/Cooler Temp: 3.3, 3.6, 3.1	Date/Time: 4-29-16 1617	Date/Time: 4-29-16 1617	Date/Time: 4/29/16 17:05	Date/Time: 04/29/16 17:05

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-110948-2

Login Number: 110948
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1,3.3,3.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	Headspace larger than 1/4" in one or more vials, one vial with accpt. headspace
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lake Calumet Cluster Site

Data Usability Summary Report

Chicago, IL

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls, Metals, and Miscellaneous General Chemistry Analyses

SDG #s: 500-110798, 500-110872, and 500-110948

Analyses Performed By:
TestAmerica Laboratories
Chicago, IL

Report #: 25711R
Review Level: Tier III
Project: CI001805.0003.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 500-110798, 500-110872, and 500-110948 for samples collected in association with the Lake Calumet Cluster Site in Chicago, Illinois. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	Pest PCBs	Metals	Misc
500-110798	MW-3-GW-04272016	500-110798-1	Water	4/27/2016		X	X	X	X	X
	MW-4-GW-04272016	500-110798-2	Water	4/27/2016		X	X	X	X	X
	MW-5-GW-04272016	500-110798-3	Water	4/27/2016		X	X	X	X	X
500-110872	MW-1-GW-04282016	500-110872-1	Water	4/28/2016		X	X	X	X	X
	MW-13-GW-04282016	500-110872-2	Water	4/28/2016		X	X	X	X	X
	MW-12-GW-04282016	500-110872-3	Water	4/28/2016		X	X	X	X	X
	MW-11-GW-04282016	500-110872-4	Water	4/28/2016		X	X	X	X	X
	DUP-1(04282016)	500-110872-5	Water	4/28/2016	MW-13-GW	X	X	X	X	X
500-110948	MW-2-GW-04282016	500-110948-1	Water	4/28/2016		X	X	X	X	X
	MW-10-GW-04292016	500-110948-2	Water	4/29/2016		X	X	X	X	X
	MW-6-GW-04292016	500-110948-3	Water	4/29/2016		X	X	X	X	X
	MW-7-GW-04292016	500-110948-4	Water	4/29/2016		X	X	X	X	X
	MW-9-GW-04292016	500-110948-5	Water	4/29/2016		X	X	X	X	X
	MW-8-GW-04292016	500-110948-6	Water	4/29/2016		X	X	X	X	X
	DUP-2 (04292016)	500-110948-7	Water	4/29/2016	MW-6-GW	X	X	X	X	X

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8081B, 8082A, 8260B, and 8270D. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is

that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES INCLUDING TOTAL VOLATILE PETROLEUM HYDROCARBONS (TPHG)

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure sample storage contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a compound detected in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99, and a RRF value greater than control limit (0.05).

4.2 Continuing Calibration (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Location	Initial / Continuing	Compound	Criteria
SDG 500-110798 MW-3-GW-04272016 MW-4-GW-04272016 MW-5-GW-04272016	CCV %D	2-Butanone (MEK)	-21.8 %
		4-Methyl-2-Pentanone (MIBK)	-24.2 %
		Carbon Tetrachloride	+28.3 %
		Methyl acetate	-21.4 %
		Methyl N-Butyl Ketone (2-Hexanone)	-21.9 %
		Trichlorofluoromethane (CFC-11)	+28.8 %
SDG 500-110872 MW-1-GW-04282016 MW-13-GW-04282016 MW-12-GW-04282016 MW-11-GW-04282016 DUP-1(04282016)	CCV %D	Bromomethane	-38.8 %
SDG 500-110948 MW-2-GW-04282016	CCV %D	1,2-Dibromo-3-chloropropane (DBCP)	-29.5 %
		2-Butanone (MEK)	-22.7 %
		4-Methyl-2-Pentanone (MIBK)	-26.8 %
		Bromoform	-21.4 %
		Dichlorodifluoromethane (CFC-12)	-22.1 %
		Chlorodibromomethane	-20.3 %
		Chloromethane	-21.8 %
		Methyl N-Butyl Ketone (2-Hexanone)	-24.1 %
SDG 500-110948 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 MW-9-GW-04292016 MW-8-GW-04292016 DUP-2 (04292016)	CCV %D	1,2-Dibromo-3-chloropropane (DBCP)	-23.3 %
		2-Butanone (MEK)	-21.1 %
		4-Methyl-2-Pentanone (MIBK)	-20.2 %
		Bromoform	-22.1 %
		Methyl N-Butyl Ketone (2-Hexanone)	-22.0 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF < 0.05	Non-detect	R
		Detect	J
	RRF < 0.01[1]	Non-detect	R
		Detect	J
	RRF > 0.05 or RRF > 0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient < 0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D > +20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D < -20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

[1] RRF of 0.01 only applies to typically poor responding compounds (e.g. ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Sample Location	Surrogate	Recovery
SDG 500-110872 MW-1-GW-04282016	Dibromofluoromethane	< LL but > 10%
	1,2-Dichloroethane-d_4 Toluene-d_8 4-Bromofluorobenzene	Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL (Upper Control Limit)	Non-detect	No Action
	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Control Limit	Sample Result	Qualification
D - Surrogates diluted below the calibration curve	Non-detect	UJ[1]
	Detect	J[1]

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC analysis exhibit area counts that are within a factor of two (i.e. 50% - 200%) of the area counts of the associated continuing calibration standard.

All internal standard area counts were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Sample locations MW-3-GW-04272016, MW-2-GW-04282016, and MW-8-GW-04292016 were used in the MS/MSD analyses. Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Location	Compound	MS Recovery	MSD Recovery
SDG 500-110798 MW-3-GW-04272016	Trichlorofluoromethane (CFC-11)	> UL	Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Control Limit	Sample Result	Qualification
Parent sample concentration > 4x the MS/MSD spike concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSDs exhibiting RPDs greater than the control limit are presented in the following table.

Sample Location	Compounds
SDG 500-110948 MW-8-GW-04292016	Bromomethane Dichlorodifluoromethane (CFC-12) Chloroethane Chloromethane Methyl-tert-butylether (MTBE) Trichlorofluoromethane (CFC-11) Vinyl chloride

The criteria used to evaluate the RPD between the MS and MSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS analysis must exhibit recoveries within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	Ethylbenzene	2500	1900	27.3 %
	Styrene (Monomer)	10 U	120	NC
	Toluene	8100	4600	55.1 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	Total Xylenes	17000	14000	19.4 %
	cis-1,2-Dichloroethene	54	26	70.0 %
	Acetone	85	50 U	AC
	Benzene	630	450	33.3 %
	Vinyl chloride	15	7.1	AC
	1,1-Dichloroethane	52	23	77.3 %
	2-Butanone (MEK)	60	50 U	AC
	1,2-Dichlorobenzene	17	14	19.4 %
	Isopropylbenzene	97	110	12.6 %
SDG 500-110948 MW-6-GW-04292016 / DUP-2 (04292016)	Ethylbenzene	100	97	3.0 %
	1,4-Dichlorobenzene	13	13	0.0 %
	1,2-Dichloroethane	1.4	1.4	0.0 %
	4-Methyl-2-Pentanone	27	27	0.0 %
	Methylcyclohexane	1.1	1.1	0.0 %
	Toluene	160	150	6.5 %
	Total Xylenes	380	440	14.6 %
	cis-1,2-Dichloroethene	4.7	4.5	4.3 %
	Acetone	33	30	9.5 %
	Benzene	7.0	7.0	0.0 %
	Vinyl chloride	4.1	3.7	10.3 %
	1,1-Dichloroethane	0.51 J	1.0 U	AC
	2-Butanone (MEK)	14	13	7.4 %
	1,2-Dichlorobenzene	2.4	2.5	4.1 %
	Isopropylbenzene	6.7	6.6	1.5 %

The styrene, 1,1-dichloroethane, cis-1,2-dichloroethene, and toluene results for field duplicate samples MW-13-GW-04282016 and DUP-1(04282016) exhibited RPDs greater than the control limit. The styrene, 1,1-dichloroethane, cis-1,2-dichloroethene, and toluene results for MW-13-GW-04282016 and DUP-1(04282016) were therefore qualified as estimated.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria. Sample results associated with compounds that exhibited concentrations greater than the linear range of the instrument calibration or were reported from a dilution analysis are summarized in the following table.

Sample ID	Compound	Original Result	Diluted Result	Reported Result
MW-4-GW-04272016	Benzene	--	250	250 D

Sample ID	Compound	Original Result	Diluted Result	Reported Result
MW-3-GW-04272016	Ethylbenzene	--	42	42 D
	Toluene	--	280	280 D
	Total Xylenes	--	290	290 D
	Benzene	--	490	490 D
MW-13-GW-04282016	1,1-Dichloroethane	--	52	52 D
	1,2-Dichlorobenzene	--	17	17 D
	2-Butanone (MEK)	--	60	60 D
	Acetone	--	85	85 D
	Benzene	--	630	630 D
	cis-1,2-Dichloroethene	--	54	54 D
	Ethylbenzene	--	2500	2500 D
	Isopropylbenzene	--	97	97 D
	Toluene	--	8100	8100 D
	Total Xylenes	--	17000	17000 D
	Vinyl chloride	--	15	15 D
MW-12-GW-04282016	1,1-Dichloroethane	--	3300	3300 D
	1,1-Dichloroethene	--	10	10 D
	2-Butanone (MEK)	--	2700	2700 D
	4-Methyl-2-Pentanone	--	24000	24000 D
	Acetone	--	4800	4800 D
	Benzene	--	160	160 D
	Chloroethane	--	26	26 D
	cis-1,2-Dichloroethene	--	1100	1100 D
	Dichloromethane	--	6300	6300 D
	Ethylbenzene	--	3400	3400 D
	Isopropylbenzene	--	43	43 D
	Tetrachloroethene	--	680	680 D
	Toluene	--	11000	11000 D
	Total Xylenes	--	19000	19000 D
	trans-1,2-Dichloroethene	--	23	23 D
	Trichloroethene	--	720	720 D
	Vinyl chloride	--	420	420 D
MW-11-GW-04282016	Total Xylenes	--	620	620 D
DUP-1(04282016)	1,1-Dichloroethane	--	23	23 D
	1,2-Dichlorobenzene	--	14	14 D
	Benzene	--	450	450 D
	cis-1,2-Dichloroethene	--	26	26 D

Sample ID	Compound	Original Result	Diluted Result	Reported Result
DUP-1(04282016)	Ethylbenzene	--	1900	1900 D
	Isopropylbenzene	--	110	110 D
	Styrene (Monomer)	--	120	120 D
	Toluene	--	4600	4600 D
	Total Xylenes	--	14000	14000 D
	Vinyl chloride	--	7.1	7.1 D
MW-2-GW-04282016	Chlorobenzene	--	660	660 D
MW-6-GW-04292016	Total Xylenes	--	380	380 D
MW-7-GW-04292016	Toluene	--	410	410 D
	Total Xylenes	--	760	760 D
DUP-2 (04292016)	Total Xylenes	--	440	440 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result < the calibration range	DJ
Diluted sample result > the calibration range	EDJ
Original sample result > the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment/Field blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision RPD		X	X		
Field/Laboratory Duplicate Sample RPD		X	X		
Surrogate Spike %R		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted for sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference
%RSD Relative standard deviation
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution are acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Location	Initial/Continuing	Compound	Criteria
SDG 500-110798 MW-3-GW-04272016 MW-4-GW-04272016 MW-5-GW-04272016	ICV %RSD	Benzaldehyde	28.9 %
	CCV %D	2,2-Oxybis(1-Chloropropane)	+24.0 %
		2-Methyl-4,6-dinitrophenol	+21.1 %
		2-Nitroaniline	+26.0 %
		4-Chloroaniline	+25.2 %
		Carbazole	+26.8 %
		Hexachlorocyclopentadiene	-54.1 %
		Indeno(1,2,3-cd)pyrene	+41.6 %
SDG 500-110872 MW-11-GW-04282016 DUP-1(04282016)	ICV %RSD	Benzaldehyde	41.4 %
	ICV %D	4-Chloroaniline	-62.9 %
	CCV %D	2,2-Oxybis(1-Chloropropane)	-22.1 %
		3-Nitroaniline	+38.1 %
		4-Nitroaniline	+23.8 %
		Benzaldehyde	+38.6 %
		Carbazole	+32.2 %
		Hexachlorocyclopentadiene	-58.3 %
SDG 500-110872 MW-1-GW-04282016 MW-13-GW-04282016 MW-12-GW-04282016	ICV %RSD	Benzaldehyde	52.1 %
		Hexachlorocyclopentadiene	34.7 %
	ICV %D	4-Chloroaniline	-47.7 %
		3-Nitroaniline	-32.7 %
	CCV %D	2,4-Dinitrophenol	+20.5 %
		4-Nitroaniline	+41.0 %
		Benzaldehyde	+38.0 %
		Hexachlorocyclopentadiene	+41.3 %
		Pentachlorophenol	+29.7 %
SDG 500-110948 MW-9-GW-04292016	ICV %RSD	Benzaldehyde	48.4%
	CCV %D	4-Chloroaniline	+22.2 %

Sample Location	Initial/Continuing	Compound	Criteria
SDG 500-110948 MW-2-GW-04282016 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 MW-8-GW-04292016 DUP-2 (04292016)	CCV %D	2,2-Oxybis(1-Chloropropane)	+24.9 %
		Benzaldehyde	-95.8 %
		Dibenzo(a,h)anthracene	+22.0 %
		Indeno(1,2,3-cd)pyrene	+24.1 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF < 0.05	Non-detect	R
		Detect	J
	RRF < 0.01[1]	Non-detect	R
		Detect	J
	RRF > 0.05 or RRF > 0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 20% or a correlation coefficient < 0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D > 20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D > 20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D > 90% (increase or decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to typically poor responding compounds (e.g. anilines, nitrophenols, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits, and that all SVOC surrogate recoveries be greater than ten percent.

Sample locations associated with surrogates that exhibited recoveries outside of the control limits are presented in the following table.

Sample Location	Surrogate	Recovery
SDG 500-110872 MW-12-GW-04282016	All surrogates	D (diluted out)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of surrogate deviations, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
D - Surrogates diluted below the calibration curve	Non-detect	UJ[1]
	Detect	J[1]

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

The internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC analysis exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Location	Internal Standard	Response
SDG 500-110798 MW-4-GW-04272016	1,4-Dichlorobenzene-d_4 Naphthalene-d_8 Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12}	Acceptable
	Perylene-d_{12}	< LL but > 25%

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J

Control limit	Sample Result	Qualification
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample location from within these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit recoveries and relative percent differences (RPDs) between the LCS and LCSD results within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analyses exhibiting recoveries outside of the control limits are presented in the following table.

Sample Location	Compound	LCS Recovery	LCSD Recovery
SDG 500-110798 MW-3-GW-04272016 MW-4-GW-04272016 MW-5-GW-04272016	Hexachloroethane Hexachloro-1,3-butadiene	< LL but > 10 %	< LL but > 10 %
	Hexachlorocyclopentadiene	< 10 %	< 10 %
SDG 500-110948 MW-2-GW-04282016 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 MW-9-GW-04292016 MW-8-GW-04292016 DUP-2 (04292016)	Benzaldehyde	> UL	> UL

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of any LCS deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Sample locations associated with LCS/LCSDs exhibiting RPDs greater than the control limit are presented in the following table.

Sample Location	Compound
SDG 500-110948 MW-2-GW-04282016 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 MW-9-GW-04292016 MW-8-GW-04292016 DUP-2 (04292016)	2,4-Dimethylphenol 4-Chloroaniline

The criteria used to evaluate the RPD between the LCS and LCSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	2,4-Dimethylphenol	37 J	40 J	7.8 %
	4-Methylphenol	210	280	28.6 %
	Phenol	56	84	40.0 %
	Acenaphthylene	4.5	5.1 J	12.5 %
	Isophorone	5.4 J	16 U	AC

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	Acenaphthene	1.4 J	8.1 U	AC
	Diethyl phthalate	33	31	6.3 %
	Di-n-butyl phthalate	5.5 J	40 U	AC
	N-nitrosodiphenylamine	14	15	6.9 %
	Fluorene	1.8 J	8.1 U	AC
	Pentachlorophenol	65 J	160 U	AC
	Naphthalene	250	260	3.9 %
	2-Methylnaphthalene	22	20	9.5 %
	1,1-Biphenyl	3.1 J	3.2 J	3.2 %
	2-Methylphenol	8.1 U	14 J	AC
SDG 500-110948 MW-6-GW-04292016 / DUP-2 (04292016)	2,4-Dimethylphenol	110	110	0.0 %
	4-Methylphenol	96	90	6.5 %
	Phenol	40 J	38 J	5.1 %
	bis(2-Ethylhexyl)phthalate	85 J	88	3.5 %
	Naphthalene	16	16	0.0 %
	2-Methylnaphthalene	4.3 U	6.6	AC
	2-Methylphenol	20	19	5.1 %

AC Acceptable
J Estimated (result is < RL)
U Not detected

The phenol results for field duplicate samples MW-13-GW-04282016 and DUP-1(04282016) exhibited a RPD greater than the control limit. The phenol results for MW-13-GW-04282016 and DUP-1(04282016) have been qualified as estimated.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria. Sample results associated with compounds that exhibited concentrations greater than the linear range of the instrument calibration or were reported from a dilution analysis are summarized in the following table.

Sample ID	Compound	Original Result	Diluted Result	Reported Result
MW-3-GW-04272016	1,1-Biphenyl	--	38	38 D
	2,4-Dimethylphenol	--	280	280 D
	2-Methylnaphthalene	--	360	360 D
	2-Methylphenol	--	180	180 D
	4-Methylphenol	--	280	280 D
	Acenaphthene	--	29	29 D
	Acenaphthylene	--	3.7 J	3.7 JD
	Anthracene	--	12	12 D

Sample ID	Compound	Original Result	Diluted Result	Reported Result
MW-3-GW-04272016	Carbazole	--	140	140 D
	Dibenzofuran	--	56	56 D
	Fluoranthene	--	7.1	7.1 D
	Fluorene	--	83	83 D
	Naphthalene	--	3600	3600 D
	Phenanthrene	--	69	69 D
	Phenol	--	85	85 D
	Pyrene	--	4.7	4.7 D
MW-1-GW-04282016	Naphthalene	150 E	--	150 EJ
MW-13-GW-04282016	1,1-Biphenyl	--	3.1 J	3.1 JD
	2,4-Dimethylphenol	--	37 J	37 JD
	2-Methylnaphthalene	--	22	22 D
	4-Methylphenol	--	210	210 D
	Acenaphthene	--	1.4 J	1.4 JD
	Acenaphthylene	--	4.5	4.5 D
	Diethyl phthalate	--	33	33 D
	Di-n-butyl phthalate	--	5.5 J	5.5 JD
	Fluorene	--	1.8 J	1.8 JD
	Isophorone	--	5.4 J	5.4 JD
	Naphthalene	--	250	250 D
	N-nitrosodiphenylamine	--	14	14 D
	Pentachlorophenol	--	65 J	65 JD
	Phenol	--	56	56 D
MW-12-GW-04282016	2-Methylnaphthalene	--	46	46 D
	2-Methylphenol	--	7600	7600 D
	4-Methylphenol	--	510000	510000 D
	Isophorone	--	19000	19000 D
	Naphthalene	--	160	160 D
	Pentachlorophenol	--	1200 J	1200 JD
	Phenol	--	4000	4000 D
MW-11-GW-04282016	1,1-Biphenyl	--	19 J	19 JD
	2,4-Dimethylphenol	--	16 J	16 JD
	2-Methylnaphthalene	--	2.9 J	2.9 JD
	4-Methylphenol	--	180	180 D
	bis(2-Chloroethoxy)methane	--	3.8 J	3.8 JD
	Naphthalene	--	8.0	8.0 D
	Phenol	--	31 J	31 JD

Sample ID	Compound	Original Result	Diluted Result	Reported Result
DUP-1(04282016)	1,1-Biphenyl	--	3.2 J	3.2 JD
	2,4-Dimethylphenol	--	40 J	40 JD
	2-Methylnaphthalene	--	20	20 D
	2-Methylphenol	--	14 J	14 JD
	4-Methylphenol	--	280	280 D
	Acenaphthylene	--	5.1 J	5.1 JD
	Diethyl phthalate	--	31	31 D
	Naphthalene	--	260	260 D
	N-nitrosodiphenylamine	--	15	15 D
	Phenol	--	84	84 D
MW-2-GW-04282016	2-Methylnaphthalene	--	120	120 D
	Naphthalene	--	90	90 D
MW-6-GW-04292016	2,4-Dimethylphenol	--	110	110 D
	2-Methylphenol	--	20	20 D
	4-Methylphenol	--	96	96 D
	bis(2-Ethylhexyl)phthalate	--	85 J	85 JD
	Naphthalene	--	16	16 D
	Phenol	--	40 J	40 JD
MW-7-GW-04292016	2,4-Dimethylphenol	--	470	470 D
	2-Methylnaphthalene	--	9.4	9.4 D
	2-Methylphenol	--	78	78 D
	4-Methylphenol	--	280	280 D
	Anthracene	--	2.8 J	2.8 JD
	bis(2-Ethylhexyl)phthalate	--	290	290 D
	Carbazole	--	4.8 J	4.8 JD
	Fluoranthene	--	8.8	8.8 D
	Fluorene	--	3.2 J	3.2 JD
	Naphthalene	--	48	48 D
	Phenanthrene	--	14	14 D
	Pyrene	--	8.0 J	8.0 JD
DUP-2 (04292016)	2,4-Dimethylphenol	--	110	110 D
	2-Methylnaphthalene	--	6.6	6.6 D
	2-Methylphenol	--	19	19 D
	4-Methylphenol	--	90	90 D
	bis(2-Ethylhexyl)phthalate	--	88	88 D
	Naphthalene	--	16	16 D
	Phenol	--	38 J	38 JD

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result < the calibration range	DJ
Diluted sample result > the calibration range	EDJ
Original sample result > the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding Times		X		X	
Reporting Limits (units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Equipment/Field Blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X	X		
Laboratory Control Sample Duplicate (LCSD) %R		X	X		
LCS/LCSD Precision (RPD)		X	X		
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System Performance and Column Resolution		X		X	
Initial Calibration %RSDs		X	X		
Continuing Calibration RRFs		X		X	
Continuing Calibration %Ds		X	X		
Instrument Tune and Performance Check		X		X	
Ion Abundance Criteria for Each Instrument Used		X		X	
Internal Standards		X	X		
Compound Identification and Quantitation					
A. Reconstructed Ion Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of Sample Compounds Within the Established RT Windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting Limits Adjusted for Sample Dilutions		X	X		

%R Percent Recovery
RPD Relative Percent Difference
%RSD Relative Standard Deviation
%D Percent Difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

All target analytes associated with the initial calibration standards must exhibit a relative standard deviation (RSD) less than the method-specified control limit of 20% or a correlation coefficient greater than 0.99.

4.2 Continuing Calibration Verification (CCV)

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the method-specified control limit of 15%.

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Location	Surrogate	Recovery
SDG 500-110948 MW-7-GW-04292016	Tetrachloro-m-xylene (TCMX)	Acceptable (93%)
	Decachlorobiphenyl (DCB)	< 10%
SDG 500-110872 DUP-1(04282016)	Tetrachloro-m-xylene (TCMX)	> UL
	Decachlorobiphenyl (DCB)	< LL but > 10%

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted (D) below the calibration curve	Non-detect	J[1]
	Detect	

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample location from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	All analytes	U	U	AC
SDG 500-110948 MW-6-GW-04292016 / DUP-2 (04292016)	All analytes	U	U	AC

AC Acceptable
U Not detected

The field duplicate samples exhibited acceptable results.

9. Analyte Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) between the detected analyte results calculated on each column must be less than 40%.

All sample results exhibited acceptable %Ds between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

Pesticides: SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD RPD	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Column %D $\leq$ 40% (If dual column is performed for reporting-not confirmation)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Analyte identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample analytes within the established RT windows		X		X	
C. Identification/Confirmation		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted for sample dilutions		X		X	

%R Percent recovery
%RSD Relative standard deviation
RPD Relative percent difference
%D Percent difference

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were extracted and analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore detected sample results are not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

All target analytes associated with the initial calibration standards must exhibit a relative standard deviation (RSD) less than the method-specified control limit of 20% or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Location	Surrogate	Recovery
SDG 500-110948 MW-7-GW-04292016	Tetrachloro-m-xylene (TCMX) Decachlorobiphenyl (DCB)	< LL but > 10%
MW-7-GW-04292016 (re-extraction)	Tetrachloro-m-xylene (TCMX) Decachlorobiphenyl (DCB)	< 10%

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below. The initial analytical results for MW-7-GW-04292016 were retained in preference to the re-extraction results.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve	Non-detect	J[1]
	Detect	

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample location within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS analyses exhibited recoveries within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. The QAPP-specified control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices.

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL for water matrices is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	All analytes	U	U	AC
SDG 500-110948 MW-6-GW-04292016 / DUP-2 (04292016)	Aroclor 1232	6.5	5.7	13.1 %

AC Acceptable
U Not detected

The field duplicate samples exhibited acceptable results.

9. Analyte Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the RPD between the detected analyte results calculated from each column must be less than 40%. For analytes that are identified, the lower of the concentration values obtained from each column is reported.

All sample results exhibited acceptable RPDs between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment/Field blanks					X
Laboratory Control Sample (LCS) Accuracy %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD RPD	X				X
Field/Laboratory Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Column (%D) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/Confirmation		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted for sample dilutions		X		X	

%R Percent recovery
RPD Relative percent difference
%RSD Relative standard deviation
%D Percent difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C, 7470A, 9034, 9038, and 9060, USEPA Method 353.2, and Standard Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within the control limits.

  * Duplicate analysis is not within the control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected as unusable. The analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3
SW-846 7470A	Water	28 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank (common laboratory contaminant analytes are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Location	Analyte	Sample Result	Qualification
SDG 500-110948 MW-10-GW-04292016 MW-6-GW-04292016 MW-7-GW-04292016 DUP-2 (04292016)	Total Selenium	Detected sample results < RL and < BAL	"UB" at the RL
SDG 500-110948 MW-6-GW-04292016 MW-7-GW-04292016 MW-8-GW-04292016 DUP-2 (04292016)	Dissolved Selenium		

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of

acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (10%).

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within the control limits.

All analytes associated with calibration standard recoveries were within the control limits, with the exception of the analytes presented in the following table.

Sample Locations	Initial / Continuing	Analytes	Standard Recovery
SDG 500-110798 MW-3-GW-04272016 MW-4-GW-04272016	CCV	Total Arsenic Dissolved Arsenic	> 110%
SDG 500-110872 MW-1-GW-04282016 MW-13-GW-04282016 MW-11-GW-04282016 DUP-1(04282016)	CCV	Total Aluminum Dissolved Aluminum Total Selenium Dissolved Selenium	> 110%
SDG 500-110872 MW-12-GW-04282016	CCV	Total Aluminum Dissolved Aluminum	> 110%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Analytes	Control Limit	Sample Result	Qualification
All analytes except mercury	75% to 89%	Non-detect	UJ
		Detect	J
	> 110%	Non-detect	No Action
		Detect	J
	< 75%	Non-detect	R
		Detect	J

3.3 Reporting limit (RL) Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the RL. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the RL standard analysis are presented below in the RL standards evaluation table.

All RL standard recoveries were within the control limits.

3.4 ICP Interference Check Standard (ICS)

The ICS verifies the laboratories inter-element and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Laboratory Duplicate Sample Analysis

MS/MSD and laboratory duplicate sample data are used to assess the precision and accuracy of the analytical method.

4.1 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

All analytes associated with the MS/MSD analyses exhibited acceptable recoveries and RPDs between the MS and MSD results.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

All analytes associated with the laboratory duplicate sample analyses exhibited RPDs within the control limit.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit recoveries between the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be no greater than the established acceptance limit of 20%.

All analytes associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

6. Serial Dilution (SD) Analysis

All metal analytes must exhibit a percent deviation within the established acceptance limit of less than or equal to 10%. The SD control limit does not apply for SDs where the analyte's concentration detected in the parent sample is less than fifty times the instrument detection limit (IDL). In the instance where this is

true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier will be removed. Sample results associated with SD exceedances where the parent sample is not site-specific are not qualified.

Sample location MW-2-GW-04282016 was used in the serial dilution analysis in SDG 500-110948. All analytes associated with the serial dilution analyses exhibited acceptable %Ds except as presented in the following table. The laboratory flagged the total manganese serial dilution as exceeding the 10% control limit; however, the total manganese result is less than fifty times the IDL. Therefore no qualification is required for manganese.

Sample Location	Analyte	Serial Dilution (%D)
SDG 500-110948 MW-2-GW-04282016	Total Calcium	12%
	Total Iron	13%

The criteria used to evaluate the serial dilution are presented in the following table. In the case of a serial dilution deviation, the sample results are qualified as documented in the table below. The qualifications are applied to all sample results associated with this analytical batch.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

7. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for water matrices of two times the RL is applied to the difference between the results.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	Total Aluminum	0.20 U	0.066 J	AC
	Total Arsenic	0.0087 J	0.0075 J	AC
	Dissolved Arsenic	0.0049 J	0.0085 J	AC
	Total Barium	0.24	0.25	4.1 %
	Dissolved Barium	0.24	0.25	4.1 %
	Total Calcium	110	120	8.7 %
	Dissolved Calcium	110	110	0 %
	Total Chromium	0.0044 J	0.0045 J	AC
	Dissolved Chromium	0.0035 J	0.0045 J	AC
	Total Cobalt	0.0027 J	0.0026 J	AC
	Dissolved Cobalt	0.0017 J	0.0025 J	AC

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	Total Copper	0.0022 J	0.0025 J	AC
	Total Iron	7.4	7.3	1.4 %
	Dissolved Iron	6.7	7.5	11.3 %
	Total Lead	0.0050 U	0.0029 J	AC
	Total Magnesium	42	43	2.4 %
	Dissolved Magnesium	43	46	6.7 %
	Total Manganese	0.42	0.35	18.2 %
	Dissolved Manganese	0.35	0.37	5.6 %
	Total Nickel	0.011	0.011	0.0 %
	Dissolved Nickel	0.011	0.011	0.0 %
	Total Potassium	64	68	6.1 %
	Dissolved Potassium	66	71	7.3 %
	Total Selenium	0.010 U	0.0059 J	AC
	Dissolved Selenium	0.010 U	0.0077 J	AC
	Total Sodium	230	240	4.3 %
	Dissolved Sodium	230	240	4.3 %
	Total Vanadium	0.0035 J	0.0039 J	AC
	Dissolved Vanadium	0.0033 J	0.0036 J	AC
SDG 500-110948 MW-6-GW-04292016 / DUP-2 (04292016)	Total Aluminum	0.47	0.51	8.2 %
	Dissolved Aluminum	0.38	0.27	33.8 %
	Total Arsenic	0.024	0.023	4.3 %
	Dissolved Arsenic	0.024	0.021	13.3 %
	Total Barium	0.29	0.31	6.7 %
	Dissolved Barium	0.31	0.29	6.7 %
	Total Cadmium	0.0022	0.0022	0.0 %
	Dissolved Cadmium	0.0016 J	0.0014 J	AC
	Total Calcium	30	28	6.9 %
	Dissolved Calcium	27	26	3.8 %
	Total Chromium	0.13	0.14	7.4 %
	Dissolved Chromium	0.14	0.13	7.4 %
	Total Cobalt	0.032	0.036	11.8 %
	Dissolved Cobalt	0.036	0.034	5.7 %
	Total Copper	0.012	0.013	8.0 %
	Dissolved Copper	0.0090 J	0.0048 J	AC
	Total Iron	2.0	2.2	9.5 %
	Dissolved Iron	2.1	2.0	4.9 %
	Total Lead	0.11	0.13	16.7 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-110948 MW-6-GW-04292016 / DUP-2 (04292016)	Dissolved Lead	0.076	0.032	81.5 %
	Total Magnesium	28	29	3.5 %
	Dissolved Magnesium	29	28	3.5 %
	Total Manganese	0.0099 J	0.0093 J	AC
	Dissolved Manganese	0.0087 J	0.0084 J	AC
	Total Nickel	0.13	0.14	7.4 %
	Dissolved Nickel	0.14	0.14	0.0 %
	Total Potassium	570	610	6.8 %
	Dissolved Potassium	610	590	3.3 %
	Total Sodium	3100	3300	6.3 %
	Dissolved Sodium	3300	3200	3.1 %
	Total Vanadium	0.057	0.057	0.0 %
	Dissolved Vanadium	0.054	0.050	7.7 %
	Total Zinc	0.17	0.18	5.7 %
	Dissolved Zinc	0.12	0.060	66.7 %
	Total Mercury	0.00020	0.00020	0.0 %

AC Acceptable
J Estimated (result is < RL)
U Not detected

The dissolved lead and dissolved zinc results exhibited RPDs greater than the control limit for the field duplicate samples MW-6-GW-04292016 and DUP-2 (04292016). The dissolved lead and dissolved zinc results were qualified as estimated for all sample locations in SDG 500-110948..

8. Assessment of Dissolved versus Total Results

The results for dissolved metal analytes should be less than 120% of the associated total metal result for those analytes that are at least five times the reporting limit (RL).

The calculated difference between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: SW-846 6010C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) Accuracy (%R)		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Post-Digestion Spike (PDS) Accuracy (%R)	X				X
Post-Digestion Spike Duplicate (PDSD) %R	X				X
PDS/PDSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X	X		
ICP Serial Dilution		X	X		
Dilution Factor		X		X	
Dissolved versus Total Results		X		X	
Moisture Content					X
Tier II Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X	X		
RL Check Standard		X		X	
ICP Interference Check		X		X	
Quantitation transcriptions/calculations		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%R – Percent recovery
RPD – Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Nitrate-N by EPA 353.2	Water	28 days from collection to analysis	Cool to < 6 °C
Nitrite-N by SM4500-NO2-B	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate-N, Nitrite-N by SM4500-NO3-F	Water	48 hours from collection to analysis	Cool to < 6 °C; pH of < 2
Sulfate by SW-846 9038	Water	28 days from collection to analysis	Cool to < 6 °C
Sulfide by SW-846 9034	Water	7 days from collection to analysis	Cool to < 6 °C
Total Organic Carbon (TOC) by SW-846 9060	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Total Suspended Solids by SM 2540-D	Water	7 days from collection to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected analyte in an associated blank (common laboratory contaminants are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analyte	Sample Result	Qualification
SDG 500-110798 MW-3-GW-04272016 MW-4-GW-04272016 MW-5-GW-04272016	Nitrite	Detected sample results < RL and < BAL	“UB” at the sample reporting limit (RL)

Sample Locations	Analyte	Sample Result	Qualification
SDG 500-110872 MW-1-GW-04282016 MW-13-GW-04282016 MW-11-GW-04282016 DUP-1(04282016)	Nitrite	Detected sample results < RL and < BAL	"UB" at the sample reporting limit (RL)

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (±10%).

All analytes associated with the initial and continuing calibrations were within the specified control limits. The correct frequency and type of standards were analyzed.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) / Laboratory Duplicate Analyses

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. When a MSD analysis is performed, the relative percent difference (RPD) between the MS/MSD results must be within the established acceptance limits of 20% for water matrices and 35% for soil matrices.

Note: The MS/MSD control limits do not apply for MS/MSD analyses performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

All analytes associated with the MS/MSD analyses exhibited acceptable recoveries and RPDs between the MS and MSD results.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the reporting limit (RL). A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the

RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

The laboratory duplicate sample results exhibited RPDs within the control limit.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked analytes used in the LCS/LCSD analysis must exhibit recoveries within the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be within the control limit of 20%.

All analytes associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

6. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit for water matrices of two times the RL is applied to the difference between the results.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-110872 MW-13-GW-04282016 / DUP-1(04282016)	Nitrate-N	0.10 U	0.10 U	AC
	Total Suspended Solids (TSS)	14	26	60.0 %
	Sulfide	1.7	1.7	0.0 %
	Total Organic Carbon (TOC)	67	56	17.9 %
SDG 500-110948 MW-6-GW-04292016 / DUP-2 (04292016)	Nitrate-N	0.10 U	0.10 U	AC
	Total Suspended Solids (TSS)	17	19	11.1 %
	Sulfide	7.9	4.5	54.8 %
	Total Organic Carbon (TOC)	360	350	2.8 %

AC Acceptable
U Not detected

The TSS results for the field duplicate samples MW-13-GW-04282016 and DUP-1(04282016) exhibited a RPD greater than the control limit. The TSS results for MW-13-GW-04282016 and DUP-1(04282016) were qualified as estimated.

The sulfide results for the field duplicate samples MW-6-GW-04292016 and DUP-2 (04292016) exhibited a RPD greater than the control limit. The sulfide results for MW-6-GW-04292016 and DUP-2 (04292016) were qualified as estimated.

7. System Performance and Overall Assessment

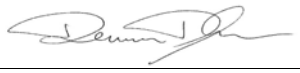
Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: SW-846 9034, 9038, and 9060, USEPA Method 353.2, and Standard Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD RPD		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Quantitation transcriptions/calculations		X		X	
Reporting limits adjusted for sample dilutions		X		X	

%RSD – relative standard deviation
%R – percent recovery
RPD – relative percent difference
%D – difference

Validation Performed By: Dennis Dyke

Signature: 

Date: June 15, 2016

Peer Review: Joseph C. Houser

Date: June 20, 2016

CHAIN OF CUSTODY /
CORRECTED SAMPLE ANALYSIS DATA SHEETS

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #: 500-110798

Send Results to:

Contact & Company Name: Arcadis

Telephone: 312 575 3772

Address: 120 S. LaSalle St. Suite 1350

Fax:

City / State / Zip: Chicago IL 60603

E-mail Address: ellyn.gates@arcadis.com

Project Name/Location (City, State): LCCS Chicago, IL

Project #: CI001805.0002.00005

Sampler's Printed Name: Nicholas Jeks

Sampler's Signature:

Preservative	E	E	C	C	A	A	
Filtered (✓)	N	N	N	✓	N	N	N
# of Containers	6		1	1	1		7
Container Information							

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270D (MOD) List 4.2	8082A 8091B	7470A Mercury 6010C TAL Metals - HS	7470A Mercury 6010C TAL Metals - HS	SM4500NH3-G Ammonia	SM4500_NO2_B Nitrogen, Nitrate Nitrite	See Special Instructions	
MW-3-GW-04272016	4-27-16	0952		✓	W	X	X	X	X	X	X	X	
MW-4-GW-04272016	4-27-16	1217		✓	W	X	X	X	X	X	X	X	
MW-5-GW-04272016	4-27-16	1430		✓	W	X	X	X	X	X	X	X	

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil
W - Water, SL - Sludge, SW - Sample Wipe
T - Tissue, A - Air, Other: _____

REMARKS

500-110798 COC

Special Instructions/Comments: 9034_Calc-Sulfide; 8260B-Target Compound List 4.2; 9060A-(MOD) Local Method; SM4500_NO2_B-Nitrogen, Nitrite; 9038-Sulfate; 2540D-Total Suspended Solids.

☐ Special QA/QC Instructions (✓):

*Level IV Data Package

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: Nicholas Jeks	Printed Name: David Bedner	Printed Name: David Bedner	Printed Name: Sherri Scott
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: TA	Firm/Courier: TA	Firm: TA-CHI
Shipping Tracking #:	Condition/Cooler Temp: 28.3.1	Date/Time: 4-27-16 1533	Date/Time: 4-27-16 1533	Date/Time: 4-27-16 16:20	Date/Time: 4/28/15 0640

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results; YELLOW – Lab copy; PINK – Retained by Arcadis

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Lab Sample ID: 500-110798-1

Date Collected: 04/27/16 09:52
Matrix: Water
Date Received: 04/27/16 16:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<20		20	7.6	ug/L			05/10/16 18:31	20
1,1,2,2-Tetrachloroethane	<20		20	8.0	ug/L			05/10/16 18:31	20
1,1,2-Trichloro-1,2,2-trifluoroethane	<20		20	9.2	ug/L			05/10/16 18:31	20
1,1,2-Trichloroethane	<20		20	7.0	ug/L			05/10/16 18:31	20
1,1-Dichloroethane	<20		20	8.2	ug/L			05/10/16 18:31	20
1,1-Dichloroethene	<20		20	7.8	ug/L			05/10/16 18:31	20
1,2,4-Trichlorobenzene	<20		20	6.8	ug/L			05/10/16 18:31	20
1,2-Dibromo-3-Chloropropane	<100		100	40	ug/L			05/10/16 18:31	20
1,2-Dibromoethane	<20		20	7.7	ug/L			05/10/16 18:31	20
1,2-Dichlorobenzene	<20		20	6.7	ug/L			05/10/16 18:31	20
1,2-Dichloroethane	<20		20	7.8	ug/L			05/10/16 18:31	20
1,2-Dichloropropane	<20		20	8.6	ug/L			05/10/16 18:31	20
1,3-Dichlorobenzene	<20		20	8.0	ug/L			05/10/16 18:31	20
1,4-Dichlorobenzene	<20		20	7.3	ug/L			05/10/16 18:31	20
2-Hexanone	<100	UJ	100	31	ug/L			05/10/16 18:31	20
Acetone	<100		100	35	ug/L			05/10/16 18:31	20
Benzene	**250**	D	10	2.9	ug/L			05/10/16 18:31	20
Bromodichloromethane	<20		20	7.4	ug/L			05/10/16 18:31	20
Bromoform	<20		20	9.7	ug/L			05/10/16 18:31	20
Bromomethane	<40		40	16	ug/L			05/10/16 18:31	20
Carbon disulfide	<40		40	9.0	ug/L			05/10/16 18:31	20
Carbon tetrachloride	<20		20	7.7	ug/L			05/10/16 18:31	20
Chlorobenzene	<20		20	7.7	ug/L			05/10/16 18:31	20
Chloroethane	<20		20	10	ug/L			05/10/16 18:31	20
Chloroform	<20		20	7.4	ug/L			05/10/16 18:31	20
Chloromethane	<20		20	6.4	ug/L			05/10/16 18:31	20
cis-1,2-Dichloroethene	<20		20	8.2	ug/L			05/10/16 18:31	20
cis-1,3-Dichloropropene	<20		20	8.3	ug/L			05/10/16 18:31	20
Cyclohexane	<20		20	9.7	ug/L			05/10/16 18:31	20
Dibromochloromethane	<20		20	9.8	ug/L			05/10/16 18:31	20
Dichlorodifluoromethane	<40		40	13	ug/L			05/10/16 18:31	20
Ethylbenzene	**42**	D	10	3.7	ug/L			05/10/16 18:31	20
Isopropylbenzene	<20		20	7.7	ug/L			05/10/16 18:31	20
Methyl acetate	<100	UJ	100	40	ug/L			05/10/16 18:31	20
Methyl Ethyl Ketone	<100	UJ	100	42	ug/L			05/10/16 18:31	20
methyl isobutyl ketone	<100	UJ	100	43	ug/L			05/10/16 18:31	20
Methyl tert-butyl ether	<20		20	7.9	ug/L			05/10/16 18:31	20
Methylcyclohexane	<20		20	6.3	ug/L			05/10/16 18:31	20
Methylene Chloride	<100		100	33	ug/L			05/10/16 18:31	20
Styrene	<20		20	7.7	ug/L			05/10/16 18:31	20
Tetrachloroethene	<20		20	7.4	ug/L			05/10/16 18:31	20
Toluene	**280**	D	10	3.0	ug/L			05/10/16 18:31	20
trans-1,2-Dichloroethene	<20		20	7.0	ug/L			05/10/16 18:31	20
trans-1,3-Dichloropropene	<20		20	7.2	ug/L			05/10/16 18:31	20
Trichloroethene	<10		10	3.3	ug/L			05/10/16 18:31	20
Trichlorofluoromethane	<20	~~F1~~	20	8.5	ug/L			05/10/16 18:31	20
Vinyl chloride	<10		10	4.1	ug/L			05/10/16 18:31	20
Xylenes, Total	**290**	D	20	4.4	ug/L			05/10/16 18:31	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*05/10/16 18:31*	*20*
4-Bromofluorobenzene (Surr)	*84*		*71 - 120*		*05/10/16 18:31*	*20*
Dibromofluoromethane	*108*		*70 - 120*		*05/10/16 18:31*	*20*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/10/16 18:31*	*20*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	**38**	D	20	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,2'-oxybis[1-chloropropane]	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4,5-Trichlorophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4,6-Trichlorophenol	<20		20	2.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dichlorophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dimethylphenol	**280**	D	40	7.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dinitrophenol	<81		81	35	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,4-Dinitrotoluene	<4.0		4.0	0.99	ug/L		04/28/16 08:38	05/10/16 15:04	5
2,6-Dinitrotoluene	<2.0		2.0	0.30	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Chloronaphthalene	<8.1		8.1	0.95	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Chlorophenol	<20		20	2.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Methylphenol	**180**	D	8.1	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Nitroaniline	<20		20	5.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
2-Nitrophenol	<40		40	10	ug/L		04/28/16 08:38	05/10/16 15:04	5
3,3'-Dichlorobenzidine	<20		20	6.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
3-Nitroaniline	<40		40	7.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
4,6-Dinitro-2-methylphenol	<81		81	24	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Bromophenyl phenyl ether	<20		20	2.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chloro-3-methylphenol	<40		40	9.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chloroaniline	<40		40	8.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Chlorophenyl phenyl ether	<20		20	2.6	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Nitroaniline	<40		40	6.7	ug/L		04/28/16 08:38	05/10/16 15:04	5
4-Nitrophenol	<81		81	30	ug/L		04/28/16 08:38	05/10/16 15:04	5
Acenaphthene	**29**	D	4.0	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Acenaphthylene	**3.7**	J D	4.0	1.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
Acetophenone	<20		20	2.7	ug/L		04/28/16 08:38	05/10/16 15:04	5
Anthracene	**12**	D	4.0	1.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
Atrazine	<20		20	2.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzaldehyde	<81	UJ	81	61	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[a]anthracene	<0.81		0.81	0.23	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[a]pyrene	<0.81		0.81	0.40	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[b]fluoranthene	<0.81		0.81	0.33	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[g,h,i]perylene	<4.0		4.0	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Benzo[k]fluoranthene	<0.81		0.81	0.26	ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-chloroethoxy)methane	<8.1		8.1	1.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-chloroethyl)ether	<8.1		8.1	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Bis(2-ethylhexyl) phthalate	<40		40	6.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
Butyl benzyl phthalate	<8.1		8.1	1.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
Caprolactam	<40		40	6.0	ug/L		04/28/16 08:38	05/10/16 15:04	5
Carbazole	**140**	D	20	1.4	ug/L		04/28/16 08:38	05/10/16 15:04	5
Chrysene	<2.0		2.0	0.27	ug/L		04/28/16 08:38	05/10/16 15:04	5
Dibenz(a,h)anthracene	<1.2		1.2	0.20	ug/L		04/28/16 08:38	05/10/16 15:04	5
Dibenzofuran	**56**	D	8.1	1.1	ug/L		04/28/16 08:38	05/10/16 15:04	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl phthalate	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Dimethyl phthalate	<8.1		8.1	1.3	ug/L		04/28/16 08:38	05/10/16 15:04	5
Di-n-butyl phthalate	<20		20	2.9	ug/L		04/28/16 08:38	05/10/16 15:04	5
Di-n-octyl phthalate	<40		40	4.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Fluoranthene	**7.1**	D	4.0	1.8	ug/L		04/28/16 08:38	05/10/16 15:04	5
Fluorene	**83**	D	4.0	0.98	ug/L		04/28/16 08:38	05/10/16 15:04	5
Hexachlorobenzene	<2.0		2.0	0.32	ug/L		04/28/16 08:38	05/10/16 15:04	5
Hexachlorobutadiene	<20	* UJ	20	2.1	ug/L		04/28/16 08:38	05/10/16 15:04	5
~~Hexachlorocyclopentadiene~~	~~<81~~	~~* R~~	~~81~~	~~26~~	~~ug/L~~		04/28/16 08:38	05/10/16 15:04	5
Hexachloroethane	<20	* UJ	20	2.4	ug/L		04/28/16 08:38	05/10/16 15:04	5
Indeno[1,2,3-cd]pyrene	<0.81		0.81	0.30	ug/L		04/28/16 08:38	05/10/16 15:04	5
Isophorone	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Nitrobenzene	<4.0		4.0	1.8	ug/L		04/28/16 08:38	05/10/16 15:04	5
N-Nitrosodi-n-propylamine	<2.0		2.0	0.62	ug/L		04/28/16 08:38	05/10/16 15:04	5
N-Nitrosodiphenylamine	<4.0		4.0	1.5	ug/L		04/28/16 08:38	05/10/16 15:04	5
Pentachlorophenol	<81		81	16	ug/L		04/28/16 08:38	05/10/16 15:04	5
Phenanthrene	**69**	D	4.0	1.2	ug/L		04/28/16 08:38	05/10/16 15:04	5
Phenol	**85**	D	20	2.7	ug/L		04/28/16 08:38	05/10/16 15:04	5
Pyrene	**4.7**	D	4.0	1.7	ug/L		04/28/16 08:38	05/10/16 15:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*94*		*30 - 123*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
2-Fluorophenol (Surr)	*75*		*30 - 110*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
Phenol-d5 (Surr)	*66*		*20 - 100*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
Terphenyl-d14 (Surr)	*113*		*42 - 150*	*04/28/16 08:38*	*05/10/16 15:04*	*5*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*04/28/16 08:38*	*05/10/16 15:04*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**360**	D	4.0	0.53	ug/L		04/28/16 08:38	05/10/16 17:59	10
3 & 4 Methylphenol	**280**	D	16	3.6	ug/L		04/28/16 08:38	05/10/16 17:59	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*30 - 123*	*04/28/16 08:38*	*05/10/16 17:59*	*10*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*04/28/16 08:38*	*05/10/16 17:59*	*10*
Nitrobenzene-d5 (Surr)	*76*		*33 - 139*	*04/28/16 08:38*	*05/10/16 17:59*	*10*
Phenol-d5 (Surr)	*62*		*20 - 100*	*04/28/16 08:38*	*05/10/16 17:59*	*10*
Terphenyl-d14 (Surr)	*108*		*42 - 150*	*04/28/16 08:38*	*05/10/16 17:59*	*10*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*	*04/28/16 08:38*	*05/10/16 17:59*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**3600**	D	81	25	ug/L		04/28/16 08:38	05/10/16 18:24	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*04/28/16 08:38*	*05/10/16 18:24*	*100*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*04/28/16 08:38*	*05/10/16 18:24*	*100*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*04/28/16 08:38*	*05/10/16 18:24*	*100*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*04/28/16 08:38*	*05/10/16 18:24*	*100*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*04/28/16 08:38*	*05/10/16 18:24*	*100*

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2 (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*04/28/16 08:38*	*05/10/16 18:24*	*100*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/28/16 10:21	05/02/16 19:42	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/28/16 10:21	05/02/16 19:42	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/28/16 10:21	05/02/16 19:42	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 19:42	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 19:42	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/28/16 10:21	05/02/16 19:42	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/28/16 10:21	05/02/16 19:42	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 19:42	1
Dieldrin	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endrin	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		04/28/16 10:21	05/02/16 19:42	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/28/16 10:21	05/02/16 19:42	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/28/16 10:21	05/02/16 19:42	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		04/28/16 10:21	05/02/16 19:42	1
Heptachlor	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 19:42	1
Methoxychlor	<0.080		0.080	0.023	ug/L		04/28/16 10:21	05/02/16 19:42	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/02/16 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	*50*		*30 - 143*	*04/28/16 10:21*	*05/02/16 19:42*	*1*
Tetrachloro-m-xylene	*122*	*X*	*30 - 120*	*04/28/16 10:21*	*05/02/16 19:42*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 15:32	1
PCB-1260	<0.40		0.40	0.070	ug/L		04/28/16 10:21	05/03/16 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*60*		*30 - 127*	*04/28/16 10:21*	*05/03/16 15:32*	*1*
DCB Decachlorobiphenyl	*69*		*30 - 150*	*04/28/16 10:21*	*05/03/16 15:32*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:29	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:29	1
Arsenic	**0.0074**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:29	1
Barium	**0.62**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:29	1

Client Sample ID: MW-3-GW-04272016

Date Collected: 04/27/16 09:52
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:29	1
Cadmium	**0.00097**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:29	1
Calcium	**58**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:29	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:29	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:29	1
Iron	**7.4**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:29	1
Lead	**0.0024**	**J**	0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:29	1
Magnesium	**80**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:29	1
Manganese	**0.33**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:29	1
Nickel	**0.0068**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:29	1
Potassium	**53**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:29	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:29	1
Sodium	**280**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:29	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:29	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:34	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:34	1
Arsenic	**0.0046**	**J** ✗	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:34	1
Barium	**0.61**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:34	1
Calcium	**57**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:34	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:34	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:34	1
Iron	**7.3**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:34	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:34	1
Magnesium	**79**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:34	1
Manganese	**0.31**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:34	1
Nickel	**0.0063**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:34	1
Potassium	**52**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:34	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:34	1
Sodium	**270**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:34	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:34	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-3-GW-04272016

Lab Sample ID: 500-110798-1

Date Collected: 04/27/16 09:52
Matrix: Water
Date Received: 04/27/16 16:20

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:10	1
Sulfate	**50**		10	4.0	mg/L			05/05/16 08:01	2
Total Organic Carbon - Duplicates	**21**		1.0	0.23	mg/L			05/08/16 16:02	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**6.5**		5.0	1.6	mg/L			04/29/16 10:26	1
Ammonia	**32**	~~B~~	4.0	0.86	mg/L		05/09/16 19:05	05/09/16 21:52	20
Nitrogen, Nitrite	< 0.020 ~~**0.0091**~~	~~**J B**~~ UB	0.020	0.0032	mg/L			04/28/16 11:47	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:39	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Lab Sample ID: 500-110798-2

Date Collected: 04/27/16 12:17
Matrix: Water
Date Received: 04/27/16 16:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/10/16 17:37	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/10/16 17:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/10/16 17:37	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/10/16 17:37	1
1,1-Dichloroethane	**11**		1.0	0.41	ug/L			05/10/16 17:37	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/10/16 17:37	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/10/16 17:37	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/10/16 17:37	1
1,2-Dichloroethane	**56**		1.0	0.39	ug/L			05/10/16 17:37	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/10/16 17:37	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/10/16 17:37	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/10/16 17:37	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/10/16 17:37	1
Acetone	**19**		5.0	1.7	ug/L			05/10/16 17:37	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/10/16 17:37	1
Bromoform	<1.0		1.0	0.48	ug/L			05/10/16 17:37	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/10/16 17:37	1
Carbon disulfide	**9.3**		2.0	0.45	ug/L			05/10/16 17:37	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/10/16 17:37	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/10/16 17:37	1
Chloroform	<1.0		1.0	0.37	ug/L			05/10/16 17:37	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/10/16 17:37	1
cis-1,2-Dichloroethene	**3.4**		1.0	0.41	ug/L			05/10/16 17:37	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/10/16 17:37	1
Cyclohexane	**0.97**	J	1.0	0.49	ug/L			05/10/16 17:37	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/10/16 17:37	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/10/16 17:37	1
Ethylbenzene	**2.6**		0.50	0.18	ug/L			05/10/16 17:37	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Methyl acetate	**110**	J	5.0	2.0	ug/L			05/10/16 17:37	1
Methyl Ethyl Ketone	<5.0	UJ	5.0	2.1	ug/L			05/10/16 17:37	1
methyl isobutyl ketone	<5.0	UJ	5.0	2.2	ug/L			05/10/16 17:37	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/10/16 17:37	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/10/16 17:37	1
Styrene	<1.0		1.0	0.39	ug/L			05/10/16 17:37	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/10/16 17:37	1
Toluene	**13**		0.50	0.15	ug/L			05/10/16 17:37	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/10/16 17:37	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/10/16 17:37	1
Trichloroethene	**0.72**		0.50	0.16	ug/L			05/10/16 17:37	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/10/16 17:37	1
Vinyl chloride	**5.2**		0.50	0.20	ug/L			05/10/16 17:37	1
Xylenes, Total	**3.5**		1.0	0.22	ug/L			05/10/16 17:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*		*05/10/16 17:37*	*1*
4-Bromofluorobenzene (Surr)	*87*		*71 - 120*		*05/10/16 17:37*	*1*
Dibromofluoromethane	*105*		*70 - 120*		*05/10/16 17:37*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/10/16 17:37*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**490**	D	5.0	1.5	ug/L			05/10/16 18:04	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*71 - 127*		*05/10/16 18:04*	*10*
4-Bromofluorobenzene (Surr)	*85*		*71 - 120*		*05/10/16 18:04*	*10*
Dibromofluoromethane	*107*		*70 - 120*		*05/10/16 18:04*	*10*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/10/16 18:04*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<4.2		4.2	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4,5-Trichlorophenol	<8.4		8.4	2.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4,6-Trichlorophenol	<4.2		4.2	0.60	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dichlorophenol	<8.4		8.4	2.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dimethylphenol	**13**		8.4	1.5	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dinitrophenol	<17		17	7.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,4-Dinitrotoluene	<0.84		0.84	0.21	ug/L		04/28/16 08:38	05/10/16 15:29	1
2,6-Dinitrotoluene	<0.42		0.42	0.062	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Chloronaphthalene	<1.7		1.7	0.20	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Chlorophenol	<4.2		4.2	0.47	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Methylnaphthalene	<0.42		0.42	0.055	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Methylphenol	**5.0**		1.7	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Nitroaniline	<4.2		4.2	1.1	ug/L		04/28/16 08:38	05/10/16 15:29	1
2-Nitrophenol	<8.4		8.4	2.1	ug/L		04/28/16 08:38	05/10/16 15:29	1
3 & 4 Methylphenol	**9.5**		1.7	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
3,3'-Dichlorobenzidine	<4.2		4.2	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
3-Nitroaniline	<8.4		8.4	1.5	ug/L		04/28/16 08:38	05/10/16 15:29	1
4,6-Dinitro-2-methylphenol	<17		17	5.0	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Bromophenyl phenyl ether	<4.2		4.2	0.45	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chloro-3-methylphenol	<8.4		8.4	1.9	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chloroaniline	<8.4		8.4	1.7	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Chlorophenyl phenyl ether	<4.2		4.2	0.53	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Nitroaniline	<8.4		8.4	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
4-Nitrophenol	<17		17	6.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
Acenaphthene	<0.84		0.84	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Acenaphthylene	<0.84		0.84	0.22	ug/L		04/28/16 08:38	05/10/16 15:29	1
Acetophenone	<4.2		4.2	0.56	ug/L		04/28/16 08:38	05/10/16 15:29	1
Anthracene	<0.84		0.84	0.28	ug/L		04/28/16 08:38	05/10/16 15:29	1
Atrazine	<4.2		4.2	0.52	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzaldehyde	<17	UJ	17	13	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[a]anthracene	<0.17		0.17	0.048	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[a]pyrene	<0.17	UJ	0.17	0.083	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[b]fluoranthene	<0.17	UJ	0.17	0.068	ug/L		04/28/16 08:38	05/10/16 15:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	<0.84	* UJ	0.84	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Benzo[k]fluoranthene	<0.17	* UJ	0.17	0.054	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-chloroethyl)ether	<1.7		1.7	0.25	ug/L		04/28/16 08:38	05/10/16 15:29	1
Bis(2-ethylhexyl) phthalate	<8.4		8.4	1.4	ug/L		04/28/16 08:38	05/10/16 15:29	1
Butyl benzyl phthalate	<1.7		1.7	0.40	ug/L		04/28/16 08:38	05/10/16 15:29	1
Caprolactam	<8.4		8.4	1.2	ug/L		04/28/16 08:38	05/10/16 15:29	1
Carbazole	<4.2		4.2	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
Chrysene	<0.42		0.42	0.057	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dibenz(a,h)anthracene	<0.25	UJ	0.25	0.043	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		04/28/16 08:38	05/10/16 15:29	1
Diethyl phthalate	<1.7		1.7	0.30	ug/L		04/28/16 08:38	05/10/16 15:29	1
Dimethyl phthalate	<1.7		1.7	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Di-n-butyl phthalate	<4.2		4.2	0.61	ug/L		04/28/16 08:38	05/10/16 15:29	1
Di-n-octyl phthalate	<8.4		8.4	0.88	ug/L		04/28/16 08:38	05/10/16 15:29	1
Fluoranthene	<0.84		0.84	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
Fluorene	<0.84		0.84	0.20	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorobenzene	<0.42		0.42	0.067	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorobutadiene	<4.2	* UJ	4.2	0.43	ug/L		04/28/16 08:38	05/10/16 15:29	1
Hexachlorocyclopentadiene	~~<17~~	~~* R~~	~~17~~	~~5.4~~	~~ug/L~~		04/28/16 08:38	05/10/16 15:29	1
Hexachloroethane	<4.2	* UJ	4.2	0.50	ug/L		04/28/16 08:38	05/10/16 15:29	1
Indeno[1,2,3-cd]pyrene	<0.17	* UJ	0.17	0.063	ug/L		04/28/16 08:38	05/10/16 15:29	1
Isophorone	<1.7		1.7	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Naphthalene	**2.4**		0.84	0.26	ug/L		04/28/16 08:38	05/10/16 15:29	1
Nitrobenzene	<0.84		0.84	0.38	ug/L		04/28/16 08:38	05/10/16 15:29	1
N-Nitrosodi-n-propylamine	<0.42		0.42	0.13	ug/L		04/28/16 08:38	05/10/16 15:29	1
N-Nitrosodiphenylamine	<0.84		0.84	0.31	ug/L		04/28/16 08:38	05/10/16 15:29	1
Pentachlorophenol	<17		17	3.3	ug/L		04/28/16 08:38	05/10/16 15:29	1
Phenanthrene	<0.84		0.84	0.25	ug/L		04/28/16 08:38	05/10/16 15:29	1
Phenol	**4.3**		4.2	0.56	ug/L		04/28/16 08:38	05/10/16 15:29	1
Pyrene	<0.84		0.84	0.36	ug/L		04/28/16 08:38	05/10/16 15:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*30 - 123*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
Nitrobenzene-d5 (Surr)	*75*		*33 - 139*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
Phenol-d5 (Surr)	*62*		*20 - 100*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
Terphenyl-d14 (Surr)	*120*		*42 - 150*	*04/28/16 08:38*	*05/10/16 15:29*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*	*04/28/16 08:38*	*05/10/16 15:29*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0054	ug/L		04/28/16 10:21	05/02/16 20:01	1
alpha-BHC	<0.041		0.041	0.0026	ug/L		04/28/16 10:21	05/02/16 20:01	1
alpha-Chlordane	<0.041		0.041	0.0045	ug/L		04/28/16 10:21	05/02/16 20:01	1
beta-BHC	<0.041		0.041	0.010	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		04/28/16 10:21	05/02/16 20:01	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		04/28/16 10:21	05/02/16 20:01	1
delta-BHC	<0.041		0.041	0.010	ug/L		04/28/16 10:21	05/02/16 20:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.041		0.041	0.013	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endrin	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		04/28/16 10:21	05/02/16 20:01	1
Endrin ketone	<0.041		0.041	0.017	ug/L		04/28/16 10:21	05/02/16 20:01	1
gamma-BHC (Lindane)	<0.041		0.041	0.0057	ug/L		04/28/16 10:21	05/02/16 20:01	1
gamma-Chlordane	<0.041		0.041	0.0073	ug/L		04/28/16 10:21	05/02/16 20:01	1
Heptachlor	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		04/28/16 10:21	05/02/16 20:01	1
Methoxychlor	<0.081		0.081	0.023	ug/L		04/28/16 10:21	05/02/16 20:01	1
Toxaphene	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/02/16 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*46*		*30 - 143*	*04/28/16 10:21*	*05/02/16 20:01*	*1*
Tetrachloro-m-xylene	*146*	*X*	*30 - 120*	*04/28/16 10:21*	*05/02/16 20:01*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.068	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1016	<0.41		0.41	0.068	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1221	~~1.3~~		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1221	**0.93**		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1232	~~2.3~~		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1232	**1.8**		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1242	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1242	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1248	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1248	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1254	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1254	<0.41		0.41	0.20	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1260	<0.41		0.41	0.071	ug/L		04/28/16 10:21	05/03/16 15:48	1
PCB-1260	<0.41		0.41	0.071	ug/L		04/28/16 10:21	05/03/16 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*04/28/16 10:21*	*05/03/16 15:48*	*1*
Tetrachloro-m-xylene	*62*		*30 - 127*	*04/28/16 10:21*	*05/03/16 15:48*	*1*
DCB Decachlorobiphenyl	*37*		*30 - 150*	*04/28/16 10:21*	*05/03/16 15:48*	*1*
DCB Decachlorobiphenyl	*39*		*30 - 150*	*04/28/16 10:21*	*05/03/16 15:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:40	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:40	1
Arsenic	**0.0066**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:40	1
Barium	**0.063**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:40	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:40	1
Calcium	**240**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:40	1

Client Sample ID: MW-4-GW-04272016

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:40	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:40	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:40	1
Iron	**1.1**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:40	1
Lead	**0.0026**	**J**	0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:40	1
Magnesium	**98**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:40	1
Manganese	**2.2**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:40	1
Nickel	<0.010		0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:40	1
Potassium	**13**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:40	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:40	1
Sodium	**470**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:40	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:40	1
Vanadium	**0.0026**	**J**	0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:40	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:40	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:45	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:45	1
Arsenic	**0.0050**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:45	1
Barium	**0.063**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:45	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:45	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:45	1
Calcium	**240**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:45	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:45	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:45	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:45	1
Iron	**0.69**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:45	1
Lead	**0.0031**	**J**	0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:45	1
Magnesium	**97**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:45	1
Manganese	**2.2**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:45	1
Nickel	**0.0037**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:45	1
Potassium	**13**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:45	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:45	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:45	1
Sodium	**460**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:45	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:45	1
Vanadium	**0.0022**	**J**	0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:45	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-4-GW-04272016

Lab Sample ID: 500-110798-2

Date Collected: 04/27/16 12:17
Date Received: 04/27/16 16:20

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.2**		1.0	0.22	mg/L			05/03/16 05:18	1
Sulfate	**640**		130	50	mg/L			05/05/16 08:02	25
Total Organic Carbon - Duplicates	**100**		4.0	0.92	mg/L			05/08/16 16:22	4
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**7.0**		5.0	1.6	mg/L			04/29/16 10:28	1
Ammonia	**0.31**	~~B~~	0.20	0.043	mg/L		05/09/16 19:05	05/09/16 21:55	1
Nitrogen, Nitrite	< 0.020 ~~**0.011**~~	~~**J B**~~ UB	0.020	0.0032	mg/L			04/28/16 11:47	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Lab Sample ID: 500-110798-3

Date Collected: 04/27/16 14:30
Matrix: Water
Date Received: 04/27/16 16:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/10/16 15:50	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/10/16 15:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/10/16 15:50	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/10/16 15:50	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/10/16 15:50	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/10/16 15:50	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/10/16 15:50	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/10/16 15:50	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/10/16 15:50	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/10/16 15:50	1
1,4-Dichlorobenzene	**4.0**		1.0	0.36	ug/L			05/10/16 15:50	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/10/16 15:50	1
Acetone	<5.0		5.0	1.7	ug/L			05/10/16 15:50	1
Benzene	<0.50		0.50	0.15	ug/L			05/10/16 15:50	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/10/16 15:50	1
Bromoform	<1.0		1.0	0.48	ug/L			05/10/16 15:50	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/10/16 15:50	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/10/16 15:50	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/10/16 15:50	1
Chlorobenzene	**4.6**		1.0	0.39	ug/L			05/10/16 15:50	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/10/16 15:50	1
Chloroform	<1.0		1.0	0.37	ug/L			05/10/16 15:50	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/10/16 15:50	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/10/16 15:50	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/10/16 15:50	1
Cyclohexane	**1.4**		1.0	0.49	ug/L			05/10/16 15:50	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/10/16 15:50	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/10/16 15:50	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/10/16 15:50	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			05/10/16 15:50	1
Methyl acetate	<5.0	UJ	5.0	2.0	ug/L			05/10/16 15:50	1
Methyl Ethyl Ketone	<5.0	UJ	5.0	2.1	ug/L			05/10/16 15:50	1
methyl isobutyl ketone	<5.0	UJ	5.0	2.2	ug/L			05/10/16 15:50	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/10/16 15:50	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/10/16 15:50	1
Styrene	<1.0		1.0	0.39	ug/L			05/10/16 15:50	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/10/16 15:50	1
Toluene	<0.50		0.50	0.15	ug/L			05/10/16 15:50	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/10/16 15:50	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/10/16 15:50	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/10/16 15:50	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/10/16 15:50	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/10/16 15:50	1
Xylenes, Total	**0.73**	J	1.0	0.22	ug/L			05/10/16 15:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Date Collected: 04/27/16 14:30
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 127*		*05/10/16 15:50*	*1*
4-Bromofluorobenzene (Surr)	*84*		*71 - 120*		*05/10/16 15:50*	*1*
Dibromofluoromethane	*110*		*70 - 120*		*05/10/16 15:50*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*05/10/16 15:50*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.31	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4,5-Trichlorophenol	<8.1		8.1	2.1	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4,6-Trichlorophenol	<4.0		4.0	0.58	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dichlorophenol	<8.1		8.1	2.1	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dimethylphenol	<8.1		8.1	1.5	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dinitrophenol	<16		16	7.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,4-Dinitrotoluene	<0.81		0.81	0.20	ug/L		04/28/16 08:38	05/10/16 15:54	1
2,6-Dinitrotoluene	<0.40		0.40	0.060	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Methylnaphthalene	**0.64**		0.40	0.053	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Methylphenol	<1.6		1.6	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
2-Nitrophenol	<8.1		8.1	2.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		04/28/16 08:38	05/10/16 15:54	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	1
3-Nitroaniline	<8.1		8.1	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	1
4,6-Dinitro-2-methylphenol	<16		16	4.8	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.44	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Chloro-3-methylphenol	<8.1		8.1	1.9	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Chloroaniline	<8.1		8.1	1.6	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Nitroaniline	<8.1		8.1	1.3	ug/L		04/28/16 08:38	05/10/16 15:54	1
4-Nitrophenol	<16		16	6.0	ug/L		04/28/16 08:38	05/10/16 15:54	1
Acenaphthene	**0.31**	**J**	0.81	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
Acenaphthylene	<0.81		0.81	0.22	ug/L		04/28/16 08:38	05/10/16 15:54	1
Acetophenone	<4.0		4.0	0.54	ug/L		04/28/16 08:38	05/10/16 15:54	1
Anthracene	<0.81		0.81	0.27	ug/L		04/28/16 08:38	05/10/16 15:54	1
Atrazine	<4.0		4.0	0.51	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzaldehyde	<16	^ UJ	16	12	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[a]anthracene	<0.16		0.16	0.046	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[a]pyrene	<0.16		0.16	0.080	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[g,h,i]perylene	<0.81		0.81	0.30	ug/L		04/28/16 08:38	05/10/16 15:54	1
Benzo[k]fluoranthene	<0.16		0.16	0.052	ug/L		04/28/16 08:38	05/10/16 15:54	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		04/28/16 08:38	05/10/16 15:54	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.24	ug/L		04/28/16 08:38	05/10/16 15:54	1
Bis(2-ethylhexyl) phthalate	<8.1		8.1	1.4	ug/L		04/28/16 08:38	05/10/16 15:54	1
Butyl benzyl phthalate	<1.6		1.6	0.39	ug/L		04/28/16 08:38	05/10/16 15:54	1
Caprolactam	<8.1		8.1	1.2	ug/L		04/28/16 08:38	05/10/16 15:54	1
Carbazole	<4.0		4.0	0.29	ug/L		04/28/16 08:38	05/10/16 15:54	1
Chrysene	<0.40		0.40	0.055	ug/L		04/28/16 08:38	05/10/16 15:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Date Collected: 04/27/16 14:30
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-3

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		04/28/16 08:38	05/10/16 15:54	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		04/28/16 08:38	05/10/16 15:54	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		04/28/16 08:38	05/10/16 15:54	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
Di-n-butyl phthalate	<4.0		4.0	0.59	ug/L		04/28/16 08:38	05/10/16 15:54	1
Di-n-octyl phthalate	<8.1		8.1	0.85	ug/L		04/28/16 08:38	05/10/16 15:54	1
Fluoranthene	<0.81		0.81	0.37	ug/L		04/28/16 08:38	05/10/16 15:54	1
Fluorene	**0.20**	**J**	0.81	0.20	ug/L		04/28/16 08:38	05/10/16 15:54	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		04/28/16 08:38	05/10/16 15:54	1
Hexachlorobutadiene	<4.0	* UJ	4.0	0.42	ug/L		04/28/16 08:38	05/10/16 15:54	1
Hexachlorocyclopentadiene	~~<16~~	~~* R~~	~~16~~	~~5.2~~	~~ug/L~~		04/28/16 08:38	05/10/16 15:54	1
Hexachloroethane	<4.0	* UJ	4.0	0.48	ug/L		04/28/16 08:38	05/10/16 15:54	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.061	ug/L		04/28/16 08:38	05/10/16 15:54	1
Isophorone	<1.6		1.6	0.30	ug/L		04/28/16 08:38	05/10/16 15:54	1
Naphthalene	**0.64**	**J**	0.81	0.25	ug/L		04/28/16 08:38	05/10/16 15:54	1
Nitrobenzene	<0.81		0.81	0.36	ug/L		04/28/16 08:38	05/10/16 15:54	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		04/28/16 08:38	05/10/16 15:54	1
N-Nitrosodiphenylamine	**1.2**		0.81	0.30	ug/L		04/28/16 08:38	05/10/16 15:54	1
Pentachlorophenol	<16		16	3.2	ug/L		04/28/16 08:38	05/10/16 15:54	1
Phenanthrene	<0.81		0.81	0.24	ug/L		04/28/16 08:38	05/10/16 15:54	1
Phenol	<4.0		4.0	0.54	ug/L		04/28/16 08:38	05/10/16 15:54	1
Pyrene	<0.81		0.81	0.35	ug/L		04/28/16 08:38	05/10/16 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*88*		*30 - 123*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
Nitrobenzene-d5 (Surr)	*80*		*33 - 139*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
Phenol-d5 (Surr)	*58*		*20 - 100*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
Terphenyl-d14 (Surr)	*112*		*42 - 150*	*04/28/16 08:38*	*05/10/16 15:54*	*1*
2,4,6-Tribromophenol (Surr)	*110*		*30 - 150*	*04/28/16 08:38*	*05/10/16 15:54*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/28/16 10:21	05/02/16 20:20	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/28/16 10:21	05/02/16 20:20	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/28/16 10:21	05/02/16 20:20	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 20:20	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 20:20	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/28/16 10:21	05/02/16 20:20	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/28/16 10:21	05/02/16 20:20	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/28/16 10:21	05/02/16 20:20	1
Dieldrin	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endrin	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endrin aldehyde	<0.040		0.040	0.0081	ug/L		04/28/16 10:21	05/02/16 20:20	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/28/16 10:21	05/02/16 20:20	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/28/16 10:21	05/02/16 20:20	1
gamma-Chlordane	<0.040		0.040	0.0071	ug/L		04/28/16 10:21	05/02/16 20:20	1

Client Sample ID: MW-5-GW-04272016

Date Collected: 04/27/16 14:30
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-3

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.040		0.040	0.013	ug/L		04/28/16 10:21	05/02/16 20:20	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/28/16 10:21	05/02/16 20:20	1
Methoxychlor	<0.079		0.079	0.023	ug/L		04/28/16 10:21	05/02/16 20:20	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/02/16 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*44*		*30 - 143*	*04/28/16 10:21*	*05/02/16 20:20*	*1*
Tetrachloro-m-xylene	*76*		*30 - 120*	*04/28/16 10:21*	*05/02/16 20:20*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.066	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/28/16 10:21	05/03/16 16:03	1
PCB-1260	<0.40		0.40	0.069	ug/L		04/28/16 10:21	05/03/16 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*04/28/16 10:21*	*05/03/16 16:03*	*1*
DCB Decachlorobiphenyl	*54*		*30 - 150*	*04/28/16 10:21*	*05/03/16 16:03*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 21:50	1
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 21:50	1
Arsenic	<0.010	~~N~~	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:50	1
Barium	**0.96**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 21:50	1
Cadmium	**0.00094**	**J**	0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 21:50	1
Calcium	**88**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 21:50	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 21:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 21:50	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 21:50	1
Iron	**28**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 21:50	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 21:50	1
Magnesium	**110**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 21:50	1
Manganese	**0.097**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 21:50	1
Nickel	**0.0043**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 21:50	1
Potassium	**47**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 21:50	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 21:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 21:50	1
Sodium	**170**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 21:50	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 21:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 21:50	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 21:50	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		04/28/16 08:11	04/28/16 20:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110798-1

Client Sample ID: MW-5-GW-04272016

Date Collected: 04/27/16 14:30
Date Received: 04/27/16 16:20

Lab Sample ID: 500-110798-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		04/28/16 08:11	04/28/16 20:01	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 20:01	1
Barium	**0.91**		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 20:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/28/16 08:11	04/28/16 20:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/28/16 08:11	04/28/16 20:01	1
Calcium	**82**		0.20	0.059	mg/L		04/28/16 08:11	04/28/16 20:01	1
Chromium	<0.010		0.010	0.0024	mg/L		04/28/16 08:11	04/28/16 20:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/28/16 08:11	04/28/16 20:01	1
Copper	<0.010		0.010	0.0022	mg/L		04/28/16 08:11	04/28/16 20:01	1
Iron	**26**		0.20	0.10	mg/L		04/28/16 08:11	04/28/16 20:01	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/28/16 08:11	04/28/16 20:01	1
Magnesium	**110**		0.10	0.034	mg/L		04/28/16 08:11	04/28/16 20:01	1
Manganese	**0.093**		0.010	0.0034	mg/L		04/28/16 08:11	04/28/16 20:01	1
Nickel	**0.0040**	**J**	0.010	0.0031	mg/L		04/28/16 08:11	04/28/16 20:01	1
Potassium	**45**		0.50	0.16	mg/L		04/28/16 08:11	04/28/16 20:01	1
Selenium	<0.010		0.010	0.0046	mg/L		04/28/16 08:11	04/28/16 20:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/28/16 08:11	04/28/16 20:01	1
Sodium	**170**		1.0	0.43	mg/L		04/28/16 08:11	04/28/16 20:01	1
Thallium	<0.010		0.010	0.0028	mg/L		04/28/16 08:11	04/28/16 20:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/28/16 08:11	04/28/16 20:01	1
Zinc	<0.020		0.020	0.0090	mg/L		04/28/16 08:11	04/28/16 20:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		04/29/16 16:00	05/02/16 11:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:21	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:07	1
Total Organic Carbon - Duplicates	**18**		1.0	0.23	mg/L			05/08/16 16:43	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**72**		5.0	1.6	mg/L			04/29/16 10:29	1
Ammonia	**57**	~~B~~	4.0	0.86	mg/L		05/09/16 19:05	05/09/16 21:57	20
Nitrogen, Nitrite	< 0.020 ~~0.010~~	~~J B~~ UB	0.020	0.0032	mg/L			04/28/16 11:48	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 18:44	1

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 500-110872

Send Results to:

Contact & Company Name: Arcadis

Telephone: 312 575 3772

Address: 120 S. LaSalle St. Suite 1350

Fax:

City: Chicago State: IL Zip: 60603

E-mail Address: ellyn.gates@arcadis.com

Project Name/Location (City, State): LCCS Chicago, IL

Project #: CI001805.0002.00005

Sampler's Printed Name: Nicholas Ickes

Sampler's Signature:

Preservative	E	E	C	C	A	A	
Filtered (✓)				✓			
# of Containers	6		1	1	1		9
Container Information							

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

PARAMETER ANALYSIS & METHOD

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270D (MOD) List 4.2	8082A 8081B	7470A Mercury 6010C TAL Metals -Hg	7470A Mercury 6010C TAL Metals -Hg (Dissolved)	SM4500NH3-G Ammonia	SM4500-NO2-F Nitrogen, Nitrite, Nitrite	See Special Instructions	REMARKS
1	MW-1-GW-04282016	4-28-16	0822		✓	W	X	X	X	X	X	X	X	
2	MW-13-GW-04282016	4-28-16	1022		✓	W	X	X	X	X	X	X	X	
3	MW-12-GW-04282016	4-28-16	1240		✓	W	X	X	X	X	X	X	X	
4	MW-11-GW-04282016	4-28-16	1422		✓	W	X	X	X	X	X	X	X	
5	DUP-1 (04282016)	4-28-16	—		✓	W	X	X	X	X	X	X	X	

500-110872 COC

Special Instructions/Comments: 9034_Calc-Sulfide; 8260B-Target Compound List 4.2; 9060A-(MOD) Local Method; SM4500_NO2_B-Nitrogen, Nitrite; 9038-Sulfate; 2540D-Total Suspended Solids

☐ Special QA/QC Instructions(✓):

* Level IV Data Package

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: Nicholas Ickes	Printed Name: David Beckner	Printed Name: David Beckner	Printed Name: Ariel Sanchez
☐ Cooler packed with Ice (✓)	☒ Intact ☐ Not Intact	Signature:	Signature: David Beckner	Signature: David Beckner	Signature: Ariel Sanchez
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: TA	Firm/Courier: TA	Firm: TA-CHI
Shipping Tracking #:	Condition/Cooler Temp: 0.8, 1.8	Date/Time: 4-28-16 1520	Date/Time: 4-28-16 1520	Date/Time: 4-28-16 16:05	Date/Time: 04/28/16 16:05

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Date Collected: 04/28/16 08:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**94**	J	5.0	1.7	ug/L			05/11/16 10:58	1
Benzene	**25**	J	0.50	0.15	ug/L			05/11/16 10:58	1
Bromodichloromethane	<1.0	UJ	1.0	0.37	ug/L			05/11/16 10:58	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/11/16 10:58	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			05/11/16 10:58	1
Carbon disulfide	<2.0	UJ	2.0	0.45	ug/L			05/11/16 10:58	1
Carbon tetrachloride	<1.0	UJ	1.0	0.38	ug/L			05/11/16 10:58	1
Chlorobenzene	**4.1**	J	1.0	0.39	ug/L			05/11/16 10:58	1
Chloroethane	<1.0	UJ	1.0	0.51	ug/L			05/11/16 10:58	1
Chloroform	<1.0	UJ	1.0	0.37	ug/L			05/11/16 10:58	1
Chloromethane	<1.0	UJ	1.0	0.32	ug/L			05/11/16 10:58	1
cis-1,2-Dichloroethene	<1.0	UJ	1.0	0.41	ug/L			05/11/16 10:58	1
cis-1,3-Dichloropropene	<1.0	UJ	1.0	0.42	ug/L			05/11/16 10:58	1
Cyclohexane	**1.1**	J	1.0	0.49	ug/L			05/11/16 10:58	1
Dibromochloromethane	<1.0	UJ	1.0	0.49	ug/L			05/11/16 10:58	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/11/16 10:58	1
1,2-Dibromoethane	<1.0	UJ	1.0	0.39	ug/L			05/11/16 10:58	1
1,2-Dichlorobenzene	**1.1**	J	1.0	0.33	ug/L			05/11/16 10:58	1
1,3-Dichlorobenzene	<1.0	UJ	1.0	0.40	ug/L			05/11/16 10:58	1
1,4-Dichlorobenzene	**2.1**	J	1.0	0.36	ug/L			05/11/16 10:58	1
Dichlorodifluoromethane	<2.0	UJ	2.0	0.67	ug/L			05/11/16 10:58	1
1,1-Dichloroethane	<1.0	UJ	1.0	0.41	ug/L			05/11/16 10:58	1
1,2-Dichloroethane	<1.0	UJ	1.0	0.39	ug/L			05/11/16 10:58	1
1,1-Dichloroethene	<1.0	UJ	1.0	0.39	ug/L			05/11/16 10:58	1
1,2-Dichloropropane	<1.0	UJ	1.0	0.43	ug/L			05/11/16 10:58	1
Ethylbenzene	**10**	J	0.50	0.18	ug/L			05/11/16 10:58	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/11/16 10:58	1
Isopropylbenzene	**7.3**	J	1.0	0.39	ug/L			05/11/16 10:58	1
Methyl acetate	<5.0	UJ	5.0	2.0	ug/L			05/11/16 10:58	1
Methylcyclohexane	<1.0	UJ	1.0	0.32	ug/L			05/11/16 10:58	1
Methylene Chloride	<5.0	UJ	5.0	1.6	ug/L			05/11/16 10:58	1
Methyl Ethyl Ketone	**48**	J	5.0	2.1	ug/L			05/11/16 10:58	1
methyl isobutyl ketone	**57**	J	5.0	2.2	ug/L			05/11/16 10:58	1
Methyl tert-butyl ether	<1.0	UJ	1.0	0.39	ug/L			05/11/16 10:58	1
Styrene	<1.0	UJ	1.0	0.39	ug/L			05/11/16 10:58	1
1,1,2,2-Tetrachloroethane	<1.0	UJ	1.0	0.40	ug/L			05/11/16 10:58	1
Tetrachloroethene	<1.0	UJ	1.0	0.37	ug/L			05/11/16 10:58	1
Toluene	**4.6**	J	0.50	0.15	ug/L			05/11/16 10:58	1
trans-1,2-Dichloroethene	<1.0	UJ	1.0	0.35	ug/L			05/11/16 10:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/11/16 10:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/11/16 10:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/11/16 10:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/11/16 10:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/11/16 10:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/11/16 10:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/11/16 10:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/11/16 10:58	1
Xylenes, Total	**12**	J	1.0	0.22	ug/L			05/11/16 10:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Date Collected: 04/28/16 08:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*71 - 120*		*05/11/16 10:58*	*1*
Dibromofluoromethane	*39*	*X*	*70 - 120*		*05/11/16 10:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*05/11/16 10:58*	*1*
Toluene-d8 (Surr)	*79*		*75 - 120*		*05/11/16 10:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**7.4**		0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
Acenaphthylene	<0.82		0.82	0.22	ug/L		05/03/16 09:31	05/06/16 00:42	1
Acetophenone	**1.3**	**J**	4.1	0.54	ug/L		05/03/16 09:31	05/06/16 00:42	1
Anthracene	<0.82		0.82	0.27	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[a]anthracene	<0.16		0.16	0.046	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[a]pyrene	<0.16		0.16	0.081	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[b]fluoranthene	<0.16		0.16	0.066	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[g,h,i]perylene	<0.82		0.82	0.31	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzo[k]fluoranthene	<0.16		0.16	0.052	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.24	ug/L		05/03/16 09:31	05/06/16 00:42	1
Bis(2-ethylhexyl) phthalate	<8.2		8.2	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Bromophenyl phenyl ether	<4.1		4.1	0.44	ug/L		05/03/16 09:31	05/06/16 00:42	1
Butyl benzyl phthalate	<1.6		1.6	0.39	ug/L		05/03/16 09:31	05/06/16 00:42	1
Carbazole	**6.6**		4.1	0.29	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chloroaniline	**4.1**	**J**	8.2	1.7	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chloro-3-methylphenol	<8.2		8.2	1.9	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Chlorophenol	<4.1		4.1	0.46	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Chlorophenyl phenyl ether	<4.1		4.1	0.52	ug/L		05/03/16 09:31	05/06/16 00:42	1
Chrysene	<0.41		0.41	0.056	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dibenz(a,h)anthracene	<0.25		0.25	0.042	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dibenzofuran	**1.1**	**J**	1.6	0.22	ug/L		05/03/16 09:31	05/06/16 00:42	1
3,3'-Dichlorobenzidine	<4.1		4.1	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dichlorophenol	<8.2		8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
Diethyl phthalate	<1.6		1.6	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dimethylphenol	**4.4**	**J**	8.2	1.5	ug/L		05/03/16 09:31	05/06/16 00:42	1
Dimethyl phthalate	<1.6		1.6	0.26	ug/L		05/03/16 09:31	05/06/16 00:42	1
Di-n-butyl phthalate	<4.1		4.1	0.60	ug/L		05/03/16 09:31	05/06/16 00:42	1
4,6-Dinitro-2-methylphenol	<16		16	4.8	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dinitrophenol	<16		16	7.0	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4-Dinitrotoluene	<0.82		0.82	0.20	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,6-Dinitrotoluene	<0.41		0.41	0.060	ug/L		05/03/16 09:31	05/06/16 00:42	1
Di-n-octyl phthalate	<8.2		8.2	0.86	ug/L		05/03/16 09:31	05/06/16 00:42	1
Fluoranthene	<0.82		0.82	0.37	ug/L		05/03/16 09:31	05/06/16 00:42	1
Fluorene	**2.1**		0.82	0.20	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachlorobenzene	<0.41		0.41	0.065	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachlorobutadiene	<4.1		4.1	0.42	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachlorocyclopentadiene	<16	UJ	16	5.2	ug/L		05/03/16 09:31	05/06/16 00:42	1
Hexachloroethane	<4.1		4.1	0.49	ug/L		05/03/16 09:31	05/06/16 00:42	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.061	ug/L		05/03/16 09:31	05/06/16 00:42	1
Isophorone	<1.6		1.6	0.31	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Methylnaphthalene	**5.1**		0.41	0.053	ug/L		05/03/16 09:31	05/06/16 00:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Date Collected: 04/28/16 08:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	**J**	1.6	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
3 & 4 Methylphenol	**16**		1.6	0.37	ug/L		05/03/16 09:31	05/06/16 00:42	1
Naphthalene	**150**	**E** J	0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Nitroaniline	<4.1		4.1	1.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
3-Nitroaniline	<8.2	UJ	8.2	1.5	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Nitroaniline	<8.2		8.2	1.4	ug/L		05/03/16 09:31	05/06/16 00:42	1
Nitrobenzene	<0.82		0.82	0.37	ug/L		05/03/16 09:31	05/06/16 00:42	1
2-Nitrophenol	<8.2		8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
4-Nitrophenol	<16		16	6.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
N-Nitrosodi-n-propylamine	<0.41		0.41	0.13	ug/L		05/03/16 09:31	05/06/16 00:42	1
N-Nitrosodiphenylamine	<0.82		0.82	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.31	ug/L		05/03/16 09:31	05/06/16 00:42	1
Pentachlorophenol	<16		16	3.2	ug/L		05/03/16 09:31	05/06/16 00:42	1
Phenanthrene	**1.1**		0.82	0.25	ug/L		05/03/16 09:31	05/06/16 00:42	1
Phenol	**30**		4.1	0.55	ug/L		05/03/16 09:31	05/06/16 00:42	1
Pyrene	<0.82		0.82	0.35	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4,5-Trichlorophenol	<8.2		8.2	2.1	ug/L		05/03/16 09:31	05/06/16 00:42	1
2,4,6-Trichlorophenol	<4.1		4.1	0.59	ug/L		05/03/16 09:31	05/06/16 00:42	1
Benzaldehyde	<16	UJ	16	12	ug/L		05/03/16 09:31	05/06/16 00:42	1
Caprolactam	<8.2		8.2	1.2	ug/L		05/03/16 09:31	05/06/16 00:42	1
Atrazine	<4.1		4.1	0.51	ug/L		05/03/16 09:31	05/06/16 00:42	1
1,1'-Biphenyl	<4.1		4.1	0.30	ug/L		05/03/16 09:31	05/06/16 00:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*30 - 123*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
2-Fluorophenol (Surr)	*47*		*30 - 110*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
Phenol-d5 (Surr)	*42*		*20 - 100*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*05/03/16 09:31*	*05/06/16 00:42*	*1*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*05/03/16 09:31*	*05/06/16 00:42*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0054	ug/L		04/29/16 10:36	05/03/16 12:42	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		04/29/16 10:36	05/03/16 12:42	1
alpha-Chlordane	<0.041		0.041	0.0045	ug/L		04/29/16 10:36	05/03/16 12:42	1
beta-BHC	<0.041		0.041	0.010	ug/L		04/29/16 10:36	05/03/16 12:42	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 12:42	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		04/29/16 10:36	05/03/16 12:42	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		04/29/16 10:36	05/03/16 12:42	1
delta-BHC	<0.041		0.041	0.011	ug/L		04/29/16 10:36	05/03/16 12:42	1
Dieldrin	<0.041		0.041	0.013	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endrin	<0.041		0.041	0.015	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		04/29/16 10:36	05/03/16 12:42	1
Endrin ketone	<0.041		0.041	0.017	ug/L		04/29/16 10:36	05/03/16 12:42	1
gamma-BHC (Lindane)	<0.041		0.041	0.0057	ug/L		04/29/16 10:36	05/03/16 12:42	1
gamma-Chlordane	<0.041		0.041	0.0074	ug/L		04/29/16 10:36	05/03/16 12:42	1

Client Sample ID: MW-1-GW-04282016

Date Collected: 04/28/16 08:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 12:42	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 12:42	1
Methoxychlor	<0.082		0.082	0.023	ug/L		04/29/16 10:36	05/03/16 12:42	1
Toxaphene	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 12:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*63*		*30 - 143*	*04/29/16 10:36*	*05/03/16 12:42*	*1*
Tetrachloro-m-xylene	*96*		*30 - 120*	*04/29/16 10:36*	*05/03/16 12:42*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.068	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1221	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1232	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1242	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1248	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1254	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 19:10	1
PCB-1260	<0.41		0.41	0.071	ug/L		04/29/16 10:36	05/03/16 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*58*		*30 - 127*	*04/29/16 10:36*	*05/03/16 19:10*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 150*	*04/29/16 10:36*	*05/03/16 19:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.20**	~~A~~ J	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:01	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:01	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:01	1
Barium	**0.88**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:01	1
Calcium	**930**		1.0	0.30	mg/L		04/29/16 08:31	05/03/16 02:41	5
Chromium	<0.010		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:01	1
Copper	**0.0070**	J	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:01	1
Iron	<0.20		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:01	1
Lead	**0.0041**	J	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:24	1
Magnesium	**0.059**	J	0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:01	1
Manganese	**0.0052**	J	0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:01	1
Nickel	**0.017**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:01	1
Potassium	**52**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:01	1
Selenium	<0.010	~~A~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:01	1
Sodium	**250**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:01	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:01	1
Zinc	**0.032**		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.077**	J ~~A~~	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-1-GW-04282016

Lab Sample ID: 500-110872-1

Date Collected: 04/28/16 08:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:06	1
Arsenic	**0.0055**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:06	1
Barium	**0.78**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:06	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:06	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:06	1
Calcium	**790**		1.0	0.30	mg/L		04/29/16 08:31	05/03/16 02:51	5
Chromium	<0.010		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:06	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:06	1
Copper	**0.0047**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:06	1
Iron	**0.21**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:06	1
Lead	**0.0028**	**J**	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:30	1
Magnesium	<0.10		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:06	1
Manganese	<0.010		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:06	1
Nickel	**0.016**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:06	1
Potassium	**48**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:06	1
Selenium	**0.0051**	**J** ~~J~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:06	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:06	1
Sodium	**230**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:06	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:06	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:06	1
Zinc	**0.013**	**J**	0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:10	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J**	0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**2.5**		1.0	0.22	mg/L			05/03/16 05:24	1
Sulfate	**18**		5.0	2.0	mg/L			05/06/16 09:10	1
Total Organic Carbon - Duplicates	**26**		1.0	0.23	mg/L			05/08/16 17:44	1
Nitrogen, Nitrate	**0.050**	**J**	0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**8.5**		5.0	1.6	mg/L			05/03/16 11:28	1
Ammonia	**53**	~~B~~	5.0	1.1	mg/L		05/09/16 19:05	05/09/16 22:00	25
Nitrogen, Nitrite < 0.020	~~0.0066~~	~~J B~~ UB	0.020	0.0032	mg/L			04/29/16 14:51	1
Nitrogen, Nitrate Nitrite	**0.057**	**J**	0.10	0.045	mg/L			05/02/16 19:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2

Date Collected: 04/28/16 10:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**85**	D	50	17	ug/L			05/11/16 11:26	10
Benzene	**630**	D	5.0	1.5	ug/L			05/11/16 11:26	10
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 11:26	10
Bromoform	<10		10	4.8	ug/L			05/11/16 11:26	10
Bromomethane	<20	UJ	20	8.0	ug/L			05/11/16 11:26	10
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 11:26	10
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 11:26	10
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 11:26	10
Chloroethane	<10		10	5.1	ug/L			05/11/16 11:26	10
Chloroform	<10		10	3.7	ug/L			05/11/16 11:26	10
Chloromethane	<10		10	3.2	ug/L			05/11/16 11:26	10
cis-1,2-Dichloroethene	**54**	JD	10	4.1	ug/L			05/11/16 11:26	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			05/11/16 11:26	10
Cyclohexane	<10		10	4.9	ug/L			05/11/16 11:26	10
Dibromochloromethane	<10		10	4.9	ug/L			05/11/16 11:26	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			05/11/16 11:26	10
1,2-Dibromoethane	<10		10	3.9	ug/L			05/11/16 11:26	10
1,2-Dichlorobenzene	**17**		10	3.3	ug/L			05/11/16 11:26	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			05/11/16 11:26	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			05/11/16 11:26	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			05/11/16 11:26	10
1,1-Dichloroethane	**52**	JD	10	4.1	ug/L			05/11/16 11:26	10
1,2-Dichloroethane	<10		10	3.9	ug/L			05/11/16 11:26	10
1,1-Dichloroethene	<10		10	3.9	ug/L			05/11/16 11:26	10
1,2-Dichloropropane	<10		10	4.3	ug/L			05/11/16 11:26	10
2-Hexanone	<50		50	16	ug/L			05/11/16 11:26	10
Isopropylbenzene	**97**	D	10	3.9	ug/L			05/11/16 11:26	10
Methyl acetate	<50		50	20	ug/L			05/11/16 11:26	10
Methylcyclohexane	<10		10	3.2	ug/L			05/11/16 11:26	10
Methylene Chloride	<50		50	16	ug/L			05/11/16 11:26	10
Methyl Ethyl Ketone	**60**	D	50	21	ug/L			05/11/16 11:26	10
methyl isobutyl ketone	<50		50	22	ug/L			05/11/16 11:26	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			05/11/16 11:26	10
Styrene	<10	UJ	10	3.9	ug/L			05/11/16 11:26	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			05/11/16 11:26	10
Tetrachloroethene	<10		10	3.7	ug/L			05/11/16 11:26	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			05/11/16 11:26	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			05/11/16 11:26	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			05/11/16 11:26	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			05/11/16 11:26	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			05/11/16 11:26	10
Trichloroethene	<5.0		5.0	1.6	ug/L			05/11/16 11:26	10
Trichlorofluoromethane	<10		10	4.3	ug/L			05/11/16 11:26	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			05/11/16 11:26	10
Vinyl chloride	**15**	D	5.0	2.0	ug/L			05/11/16 11:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*05/11/16 11:26*	*10*
Dibromofluoromethane	*86*		*70 - 120*		*05/11/16 11:26*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Date Collected: 04/28/16 10:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*05/11/16 11:26*	*10*
Toluene-d8 (Surr)	*89*		*75 - 120*		*05/11/16 11:26*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**2500**	D	50	18	ug/L			05/11/16 11:54	100
Toluene	**8100**	JD	50	15	ug/L			05/11/16 11:54	100
Xylenes, Total	**17000**	D	100	22	ug/L			05/11/16 11:54	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*		*05/11/16 11:54*	*100*
Dibromofluoromethane	*91*		*70 - 120*		*05/11/16 11:54*	*100*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*05/11/16 11:54*	*100*
Toluene-d8 (Surr)	*93*		*75 - 120*		*05/11/16 11:54*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.4**	J D	4.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Acenaphthylene	**4.5**	D	4.1	1.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
Acetophenone	<20		20	2.7	ug/L		05/03/16 09:31	05/06/16 01:08	5
Anthracene	<4.1		4.1	1.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[a]anthracene	<0.81		0.81	0.23	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[a]pyrene	<0.81		0.81	0.40	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[b]fluoranthene	<0.81		0.81	0.33	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[g,h,i]perylene	<4.1		4.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzo[k]fluoranthene	<0.81		0.81	0.26	ug/L		05/03/16 09:31	05/06/16 01:08	5
Bis(2-chloroethoxy)methane	<8.1		8.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Bis(2-chloroethyl)ether	<8.1		8.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Bis(2-ethylhexyl) phthalate	<41		41	7.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Bromophenyl phenyl ether	<20		20	2.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Butyl benzyl phthalate	<8.1		8.1	2.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
Carbazole	<20		20	1.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Chloroaniline	<41	UJ	41	8.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Chloro-3-methylphenol	<41		41	9.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Chloronaphthalene	<8.1		8.1	0.96	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Chlorophenol	<20		20	2.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Chlorophenyl phenyl ether	<20		20	2.6	ug/L		05/03/16 09:31	05/06/16 01:08	5
Chrysene	<2.0		2.0	0.28	ug/L		05/03/16 09:31	05/06/16 01:08	5
Dibenz(a,h)anthracene	<1.2		1.2	0.21	ug/L		05/03/16 09:31	05/06/16 01:08	5
Dibenzofuran	<8.1		8.1	1.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
3,3'-Dichlorobenzidine	<20		20	7.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dichlorophenol	<41		41	11	ug/L		05/03/16 09:31	05/06/16 01:08	5
Diethyl phthalate	**33**	D	8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dimethylphenol	**37**	J D	41	7.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Dimethyl phthalate	<8.1		8.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Di-n-butyl phthalate	**5.5**	J D	20	3.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
4,6-Dinitro-2-methylphenol	<81		81	24	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dinitrophenol	<81		81	35	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4-Dinitrotoluene	<4.1		4.1	1.0	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,6-Dinitrotoluene	<2.0		2.0	0.30	ug/L		05/03/16 09:31	05/06/16 01:08	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Date Collected: 04/28/16 10:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<41		41	4.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
Fluoranthene	<4.1		4.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
Fluorene	**1.8**	J D	4.1	0.99	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachlorobenzene	<2.0		2.0	0.32	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachlorobutadiene	<20		20	2.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachlorocyclopentadiene	<81	UJ	81	26	ug/L		05/03/16 09:31	05/06/16 01:08	5
Hexachloroethane	<20		20	2.4	ug/L		05/03/16 09:31	05/06/16 01:08	5
Indeno[1,2,3-cd]pyrene	<0.81		0.81	0.30	ug/L		05/03/16 09:31	05/06/16 01:08	5
Isophorone	**5.4**	J D	8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Methylnaphthalene	**22**	D	2.0	0.27	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Methylphenol	<8.1		8.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
3 & 4 Methylphenol	**210**	D	8.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
Naphthalene	**250**	D	4.1	1.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Nitroaniline	<20		20	5.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
3-Nitroaniline	<41	UJ	41	7.3	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Nitroaniline	<41		41	6.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
Nitrobenzene	<4.1		4.1	1.8	ug/L		05/03/16 09:31	05/06/16 01:08	5
2-Nitrophenol	<41		41	10	ug/L		05/03/16 09:31	05/06/16 01:08	5
4-Nitrophenol	<81		81	30	ug/L		05/03/16 09:31	05/06/16 01:08	5
N-Nitrosodi-n-propylamine	<2.0		2.0	0.63	ug/L		05/03/16 09:31	05/06/16 01:08	5
N-Nitrosodiphenylamine	**14**	D	4.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,2'-oxybis[1-chloropropane]	<8.1		8.1	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
Pentachlorophenol	**65**	J D	81	16	ug/L		05/03/16 09:31	05/06/16 01:08	5
Phenanthrene	<4.1		4.1	1.2	ug/L		05/03/16 09:31	05/06/16 01:08	5
Phenol	**56**	JD	20	2.7	ug/L		05/03/16 09:31	05/06/16 01:08	5
Pyrene	<4.1		4.1	1.7	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4,5-Trichlorophenol	<41		41	10	ug/L		05/03/16 09:31	05/06/16 01:08	5
2,4,6-Trichlorophenol	<20		20	2.9	ug/L		05/03/16 09:31	05/06/16 01:08	5
Benzaldehyde	<81	UJ	81	62	ug/L		05/03/16 09:31	05/06/16 01:08	5
Caprolactam	<41		41	6.1	ug/L		05/03/16 09:31	05/06/16 01:08	5
Atrazine	<20		20	2.5	ug/L		05/03/16 09:31	05/06/16 01:08	5
1,1'-Biphenyl	**3.1**	J D	20	1.5	ug/L		05/03/16 09:31	05/06/16 01:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*30 - 123*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
2-Fluorophenol (Surr)	*55*		*30 - 110*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
Phenol-d5 (Surr)	*50*		*20 - 100*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
Terphenyl-d14 (Surr)	*109*		*42 - 150*	*05/03/16 09:31*	*05/06/16 01:08*	*5*
2,4,6-Tribromophenol (Surr)	*128*		*30 - 150*	*05/03/16 09:31*	*05/06/16 01:08*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0054	ug/L		04/29/16 10:36	05/03/16 13:02	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		04/29/16 10:36	05/03/16 13:02	1
alpha-Chlordane	<0.041		0.041	0.0045	ug/L		04/29/16 10:36	05/03/16 13:02	1
beta-BHC	<0.041		0.041	0.010	ug/L		04/29/16 10:36	05/03/16 13:02	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 13:02	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		04/29/16 10:36	05/03/16 13:02	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		04/29/16 10:36	05/03/16 13:02	1

Client Sample ID: MW-13-GW-04282016

Date Collected: 04/28/16 10:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.041		0.041	0.011	ug/L		04/29/16 10:36	05/03/16 13:02	1
Dieldrin	<0.041		0.041	0.013	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endrin	<0.041		0.041	0.015	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		04/29/16 10:36	05/03/16 13:02	1
Endrin ketone	<0.041		0.041	0.017	ug/L		04/29/16 10:36	05/03/16 13:02	1
gamma-BHC (Lindane)	<0.041		0.041	0.0057	ug/L		04/29/16 10:36	05/03/16 13:02	1
gamma-Chlordane	<0.041		0.041	0.0074	ug/L		04/29/16 10:36	05/03/16 13:02	1
Heptachlor	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 13:02	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		04/29/16 10:36	05/03/16 13:02	1
Methoxychlor	<0.082		0.082	0.024	ug/L		04/29/16 10:36	05/03/16 13:02	1
Toxaphene	<0.41		0.41	0.20	ug/L		04/29/16 10:36	05/03/16 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*34*		*30 - 143*	*04/29/16 10:36*	*05/03/16 13:02*	*1*
Tetrachloro-m-xylene	*622*	*X*	*30 - 120*	*04/29/16 10:36*	*05/03/16 13:02*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<2.0		2.0	0.34	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1221	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1232	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1242	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1248	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1254	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 10:28	5
PCB-1260	<2.0		2.0	0.36	ug/L		04/29/16 10:36	05/04/16 10:28	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*71*		*30 - 127*	*04/29/16 10:36*	*05/04/16 10:28*	*5*
DCB Decachlorobiphenyl	*39*		*30 - 150*	*04/29/16 10:36*	*05/04/16 10:28*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	~~A~~	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:11	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:11	1
Arsenic	**0.0087**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:11	1
Barium	**0.24**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:11	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:11	1
Calcium	**110**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:11	1
Chromium	**0.0044**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:11	1
Cobalt	**0.0027**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:11	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:11	1
Iron	**7.4**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:11	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:35	1
Magnesium	**42**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:11	1
Manganese	**0.42**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:11	1
Nickel	**0.011**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-13-GW-04282016

Date Collected: 04/28/16 10:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	**64**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:11	1
Selenium	<0.010	~~J~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:11	1
Sodium	**230**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:11	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:11	1
Vanadium	**0.0035**	**J**	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:11	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	~~J~~	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:25	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:25	1
Arsenic	**0.0049**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:25	1
Barium	**0.24**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:25	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:25	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:25	1
Calcium	**110**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:25	1
Chromium	**0.0035**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:25	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:25	1
Copper	<0.010		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:25	1
Iron	**6.7**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:25	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:48	1
Magnesium	**43**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:25	1
Manganese	**0.35**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:25	1
Nickel	**0.011**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:25	1
Potassium	**66**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:25	1
Selenium	<0.010	~~J~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:25	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:25	1
Sodium	**230**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:25	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:25	1
Vanadium	**0.0033**	**J**	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:25	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.7**		1.0	0.22	mg/L			05/03/16 05:27	1
Sulfate	**390**		100	40	mg/L			05/06/16 09:11	20
Total Organic Carbon - Duplicates	**67**		4.0	0.92	mg/L			05/08/16 18:24	4
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**14**	J	5.0	1.6	mg/L			05/03/16 11:31	1
Ammonia	**61**	~~B~~	4.0	0.86	mg/L		05/09/16 19:05	05/09/16 22:09	20
Nitrogen, Nitrite	< 0.020 ~~0.010~~ ~~J B~~ UB		0.020	0.0032	mg/L			04/29/16 14:52	1

Client Sample ID: MW-13-GW-04282016

Lab Sample ID: 500-110872-2

Date Collected: 04/28/16 10:22

Matrix: Water

Date Received: 04/28/16 16:05

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Date Collected: 04/28/16 12:40
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**160**	D	5.0	1.5	ug/L			05/11/16 12:21	10
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 12:21	10
Bromoform	<10		10	4.8	ug/L			05/11/16 12:21	10
Bromomethane	<20	UJ	20	8.0	ug/L			05/11/16 12:21	10
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 12:21	10
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 12:21	10
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 12:21	10
Chloroethane	**26**	D	10	5.1	ug/L			05/11/16 12:21	10
Chloroform	<10		10	3.7	ug/L			05/11/16 12:21	10
Chloromethane	<10		10	3.2	ug/L			05/11/16 12:21	10
cis-1,2-Dichloroethene	**1100**	D	10	4.1	ug/L			05/11/16 12:21	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			05/11/16 12:21	10
Cyclohexane	<10		10	4.9	ug/L			05/11/16 12:21	10
Dibromochloromethane	<10		10	4.9	ug/L			05/11/16 12:21	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			05/11/16 12:21	10
1,2-Dibromoethane	<10		10	3.9	ug/L			05/11/16 12:21	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			05/11/16 12:21	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			05/11/16 12:21	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			05/11/16 12:21	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			05/11/16 12:21	10
1,2-Dichloroethane	<10		10	3.9	ug/L			05/11/16 12:21	10
1,1-Dichloroethene	**10**	D	10	3.9	ug/L			05/11/16 12:21	10
1,2-Dichloropropane	<10		10	4.3	ug/L			05/11/16 12:21	10
2-Hexanone	<50		50	16	ug/L			05/11/16 12:21	10
Isopropylbenzene	**43**	D	10	3.9	ug/L			05/11/16 12:21	10
Methyl acetate	<50		50	20	ug/L			05/11/16 12:21	10
Methylcyclohexane	<10		10	3.2	ug/L			05/11/16 12:21	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			05/11/16 12:21	10
Styrene	<10		10	3.9	ug/L			05/11/16 12:21	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			05/11/16 12:21	10
Tetrachloroethene	**680**	D	10	3.7	ug/L			05/11/16 12:21	10
trans-1,2-Dichloroethene	**23**	D	10	3.5	ug/L			05/11/16 12:21	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			05/11/16 12:21	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			05/11/16 12:21	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			05/11/16 12:21	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			05/11/16 12:21	10
Trichloroethene	**720**	D	5.0	1.6	ug/L			05/11/16 12:21	10
Trichlorofluoromethane	<10		10	4.3	ug/L			05/11/16 12:21	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			05/11/16 12:21	10
Vinyl chloride	**420**	D	5.0	2.0	ug/L			05/11/16 12:21	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*		*05/11/16 12:21*	*10*
Dibromofluoromethane	*86*		*70 - 120*		*05/11/16 12:21*	*10*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*		*05/11/16 12:21*	*10*
Toluene-d8 (Surr)	*92*		*75 - 120*		*05/11/16 12:21*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**4800**	D	500	170	ug/L			05/11/16 12:49	100

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Date Collected: 04/28/16 12:40
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	3300	D	100	41	ug/L			05/11/16 12:49	100
Ethylbenzene	3400	D	50	18	ug/L			05/11/16 12:49	100
Methylene Chloride	6300	D	500	160	ug/L			05/11/16 12:49	100
Methyl Ethyl Ketone	2700	D	500	210	ug/L			05/11/16 12:49	100
methyl isobutyl ketone	24000	D	5000	2200	ug/L			05/12/16 15:19	1000
Toluene	11000	D	50	15	ug/L			05/11/16 12:49	100
Xylenes, Total	19000	D	100	22	ug/L			05/11/16 12:49	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*71 - 120*		*05/11/16 12:49*	*100*
4-Bromofluorobenzene (Surr)	*90*		*71 - 120*		*05/12/16 15:19*	*1000*
Dibromofluoromethane	*89*		*70 - 120*		*05/11/16 12:49*	*100*
Dibromofluoromethane	*90*		*70 - 120*		*05/12/16 15:19*	*1000*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*05/11/16 12:49*	*100*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*		*05/12/16 15:19*	*1000*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/11/16 12:49*	*100*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/12/16 15:19*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<81	UJ	81	25	ug/L		05/03/16 09:31	05/06/16 01:35	100
Acenaphthylene	<81		81	22	ug/L		05/03/16 09:31	05/06/16 01:35	100
Acetophenone	<410		410	54	ug/L		05/03/16 09:31	05/06/16 01:35	100
Anthracene	<81		81	27	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[a]anthracene	<16		16	4.6	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[a]pyrene	<16		16	8.0	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[b]fluoranthene	<16		16	6.6	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[g,h,i]perylene	<81		81	31	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzo[k]fluoranthene	<16		16	5.2	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-chloroethoxy)methane	<160		160	23	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-chloroethyl)ether	<160		160	24	ug/L		05/03/16 09:31	05/06/16 01:35	100
Bis(2-ethylhexyl) phthalate	<810		810	140	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Bromophenyl phenyl ether	<410		410	44	ug/L		05/03/16 09:31	05/06/16 01:35	100
Butyl benzyl phthalate	<160		160	39	ug/L		05/03/16 09:31	05/06/16 01:35	100
Carbazole	<410		410	29	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Chloroaniline	<810		810	160	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Chloro-3-methylphenol	<810		810	190	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Chloronaphthalene	<160		160	19	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Chlorophenol	<410		410	45	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Chlorophenyl phenyl ether	<410		410	52	ug/L		05/03/16 09:31	05/06/16 01:35	100
Chrysene	<41		41	5.5	ug/L		05/03/16 09:31	05/06/16 01:35	100
Dibenz(a,h)anthracene	<24		24	4.1	ug/L		05/03/16 09:31	05/06/16 01:35	100
Dibenzofuran	<160		160	21	ug/L		05/03/16 09:31	05/06/16 01:35	100
3,3'-Dichlorobenzidine	<410		410	140	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4-Dichlorophenol	<810		810	210	ug/L		05/03/16 09:31	05/06/16 01:35	100
Diethyl phthalate	<160		160	29	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4-Dimethylphenol	<810		810	150	ug/L		05/03/16 09:31	05/06/16 01:35	100
Dimethyl phthalate	<160		160	26	ug/L		05/03/16 09:31	05/06/16 01:35	100
Di-n-butyl phthalate	<410		410	59	ug/L		05/03/16 09:31	05/06/16 01:35	100
4,6-Dinitro-2-methylphenol	<1600		1600	480	ug/L		05/03/16 09:31	05/06/16 01:35	100

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Date Collected: 04/28/16 12:40
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-3

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	<1600	UJ	1600	700	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4-Dinitrotoluene	<81		81	20	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,6-Dinitrotoluene	<41		41	6.0	ug/L		05/03/16 09:31	05/06/16 01:35	100
Di-n-octyl phthalate	<810		810	85	ug/L		05/03/16 09:31	05/06/16 01:35	100
Fluoranthene	<81		81	37	ug/L		05/03/16 09:31	05/06/16 01:35	100
Fluorene	<81		81	20	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachlorobenzene	<41		41	6.5	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachlorobutadiene	<410		410	42	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachlorocyclopentadiene	<1600		1600	520	ug/L		05/03/16 09:31	05/06/16 01:35	100
Hexachloroethane	<410		410	49	ug/L		05/03/16 09:31	05/06/16 01:35	100
Indeno[1,2,3-cd]pyrene	<16		16	6.1	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Methylnaphthalene	**46**	JD	41	5.3	ug/L		05/03/16 09:31	05/06/16 01:35	100
Naphthalene	**160**	JD	81	25	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Nitroaniline	<410	UJ	410	100	ug/L		05/03/16 09:31	05/06/16 01:35	100
3-Nitroaniline	<810		810	150	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Nitroaniline	<810		810	140	ug/L		05/03/16 09:31	05/06/16 01:35	100
Nitrobenzene	<81		81	37	ug/L		05/03/16 09:31	05/06/16 01:35	100
2-Nitrophenol	<810		810	200	ug/L		05/03/16 09:31	05/06/16 01:35	100
4-Nitrophenol	<1600		1600	600	ug/L		05/03/16 09:31	05/06/16 01:35	100
N-Nitrosodi-n-propylamine	<41		41	13	ug/L		05/03/16 09:31	05/06/16 01:35	100
N-Nitrosodiphenylamine	<81		81	30	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,2'-oxybis[1-chloropropane]	<160		160	31	ug/L		05/03/16 09:31	05/06/16 01:35	100
Pentachlorophenol	**1200**	J D	1600	320	ug/L		05/03/16 09:31	05/06/16 01:35	100
Phenanthrene	<81	UJ	81	25	ug/L		05/03/16 09:31	05/06/16 01:35	100
Phenol	**4000**	JD	410	55	ug/L		05/03/16 09:31	05/06/16 01:35	100
Pyrene	<81	UJ	81	35	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4,5-Trichlorophenol	<810		810	210	ug/L		05/03/16 09:31	05/06/16 01:35	100
2,4,6-Trichlorophenol	<410		410	58	ug/L		05/03/16 09:31	05/06/16 01:35	100
Benzaldehyde	<1600		1600	1200	ug/L		05/03/16 09:31	05/06/16 01:35	100
Caprolactam	<810		810	120	ug/L		05/03/16 09:31	05/06/16 01:35	100
Atrazine	<410		410	51	ug/L		05/03/16 09:31	05/06/16 01:35	100
1,1'-Biphenyl	<410		410	29	ug/L		05/03/16 09:31	05/06/16 01:35	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*05/03/16 09:31*	*05/06/16 01:35*	*100*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*05/03/16 09:31*	*05/06/16 01:35*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isophorone	**19000**	JD	810	150	ug/L		05/03/16 09:31	05/07/16 08:32	500
2-Methylphenol	**7600**	JD	810	120	ug/L		05/03/16 09:31	05/07/16 08:32	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*05/03/16 09:31*	*05/07/16 08:32*	*500*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*05/03/16 09:31*	*05/07/16 08:32*	*500*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*05/03/16 09:31*	*05/07/16 08:32*	*500*

Client Sample ID: MW-12-GW-04282016

Date Collected: 04/28/16 12:40
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-3

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5 (Surr)	0	D	20 - 100	05/03/16 09:31	05/07/16 08:32	500
Terphenyl-d14 (Surr)	0	D	42 - 150	05/03/16 09:31	05/07/16 08:32	500
2,4,6-Tribromophenol (Surr)	0	D	30 - 150	05/03/16 09:31	05/07/16 08:32	500

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	510000	JD	16000	3700	ug/L		05/03/16 09:31	05/07/16 08:58	10000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	0	D	30 - 123	05/03/16 09:31	05/07/16 08:58	10000
2-Fluorophenol (Surr)	0	D	30 - 110	05/03/16 09:31	05/07/16 08:58	10000
Nitrobenzene-d5 (Surr)	0	D	33 - 139	05/03/16 09:31	05/07/16 08:58	10000
Phenol-d5 (Surr)	0	D	20 - 100	05/03/16 09:31	05/07/16 08:58	10000
Terphenyl-d14 (Surr)	0	D	42 - 150	05/03/16 09:31	05/07/16 08:58	10000
2,4,6-Tribromophenol (Surr)	0	D	30 - 150	05/03/16 09:31	05/07/16 08:58	10000

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.20		0.20	0.026	ug/L		04/29/16 10:36	05/03/16 13:21	5
alpha-BHC	<0.20		0.20	0.013	ug/L		04/29/16 10:36	05/03/16 13:21	5
alpha-Chlordane	<0.20		0.20	0.022	ug/L		04/29/16 10:36	05/03/16 13:21	5
beta-BHC	<0.20		0.20	0.050	ug/L		04/29/16 10:36	05/03/16 13:21	5
4,4'-DDD	<0.20		0.20	0.066	ug/L		04/29/16 10:36	05/03/16 13:21	5
4,4'-DDE	<0.20		0.20	0.019	ug/L		04/29/16 10:36	05/03/16 13:21	5
4,4'-DDT	<0.20		0.20	0.016	ug/L		04/29/16 10:36	05/03/16 13:21	5
delta-BHC	<0.20		0.20	0.051	ug/L		04/29/16 10:36	05/03/16 13:21	5
Dieldrin	<0.20		0.20	0.064	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endosulfan I	<0.20		0.20	0.020	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endosulfan II	<0.20		0.20	0.014	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endosulfan sulfate	<0.20		0.20	0.058	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endrin	<0.20		0.20	0.070	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endrin aldehyde	<0.20		0.20	0.041	ug/L		04/29/16 10:36	05/03/16 13:21	5
Endrin ketone	<0.20		0.20	0.084	ug/L		04/29/16 10:36	05/03/16 13:21	5
gamma-BHC (Lindane)	<0.20		0.20	0.028	ug/L		04/29/16 10:36	05/03/16 13:21	5
gamma-Chlordane	<0.20		0.20	0.036	ug/L		04/29/16 10:36	05/03/16 13:21	5
Heptachlor	<0.20		0.20	0.067	ug/L		04/29/16 10:36	05/03/16 13:21	5
Heptachlor epoxide	<0.20		0.20	0.068	ug/L		04/29/16 10:36	05/03/16 13:21	5
Methoxychlor	<0.40		0.40	0.11	ug/L		04/29/16 10:36	05/03/16 13:21	5
Toxaphene	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/03/16 13:21	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	27	X	30 - 143	04/29/16 10:36	05/03/16 13:21	5
Tetrachloro-m-xylene	79		30 - 120	04/29/16 10:36	05/03/16 13:21	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<2.0		2.0	0.33	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1221	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1232	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1242	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5

Client Sample ID: MW-12-GW-04282016

Lab Sample ID: 500-110872-3

Date Collected: 04/28/16 12:40

Matrix: Water

Date Received: 04/28/16 16:05

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1248	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1254	<2.0		2.0	0.99	ug/L		04/29/16 10:36	05/04/16 10:44	5
PCB-1260	<2.0		2.0	0.35	ug/L		04/29/16 10:36	05/04/16 10:44	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*04/29/16 10:36*	*05/04/16 10:44*	*5*
DCB Decachlorobiphenyl	*29*	*X*	*30 - 150*	*04/29/16 10:36*	*05/04/16 10:44*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:30	1
Antimony	**0.019**	**J**	0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:30	1
Arsenic	**0.030**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:30	1
Barium	**0.091**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:30	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:30	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:30	1
Calcium	**350**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:30	1
Chromium	**0.067**		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:30	1
Cobalt	**0.12**		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:30	1
Copper	**0.0049**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:30	1
Iron	**42**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:30	1
Lead	**0.011**		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:53	1
Magnesium	**300**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:30	1
Manganese	**2.6**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:30	1
Nickel	**0.27**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:30	1
Potassium	**150**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:30	1
Selenium	**0.023**		0.010	0.0046	mg/L		04/29/16 08:31	05/03/16 17:53	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:30	1
Sodium	**1600**		5.0	2.2	mg/L		04/29/16 08:31	05/03/16 03:11	5
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:30	1
Vanadium	**0.017**		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:30	1
Zinc	**0.23**		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:30	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.062**	**J**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:36	1
Antimony	**0.012**	**J**	0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:36	1
Arsenic	**0.026**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:36	1
Barium	**0.088**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:36	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:36	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:36	1
Calcium	**330**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:36	1
Chromium	**0.063**		0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:36	1
Cobalt	**0.12**		0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:36	1
Copper	**0.0035**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:36	1
Iron	**41**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:36	1
Lead	**0.0040**	**J**	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 17:59	1
Magnesium	**290**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:36	1
Manganese	**2.4**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:36	1
Nickel	**0.25**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-12-GW-04282016

Date Collected: 04/28/16 12:40
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	150		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:36	1
Selenium	0.019		0.010	0.0046	mg/L		04/29/16 08:31	05/03/16 17:59	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:36	1
Sodium	1700		5.0	2.2	mg/L		04/29/16 08:31	05/03/16 03:31	5
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:36	1
Vanadium	0.017		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:36	1
Zinc	0.12		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	7.6		1.0	0.22	mg/L			05/03/16 05:30	1
Sulfate	1600		500	200	mg/L			05/06/16 09:12	100
Total Organic Carbon - Duplicates	2200		80	18	mg/L			05/08/16 18:45	80
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	140		9.1	2.9	mg/L			05/03/16 11:34	1
Ammonia	440	~~B~~	20	4.3	mg/L		05/09/16 19:05	05/09/16 22:12	100
Nitrogen, Nitrite	< 0.020 ~~0.030~~	~~B~~ UB	0.020	0.0032	mg/L			04/29/16 14:52	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-11-GW-04282016

Lab Sample ID: 500-110872-4

Date Collected: 04/28/16 14:22
Matrix: Water
Date Received: 04/28/16 16:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**15**		5.0	1.7	ug/L			05/11/16 13:17	1
Benzene	**88**		0.50	0.15	ug/L			05/11/16 13:17	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/11/16 13:17	1
Bromoform	<1.0		1.0	0.48	ug/L			05/11/16 13:17	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			05/11/16 13:17	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/11/16 13:17	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/11/16 13:17	1
Chlorobenzene	**6.9**		1.0	0.39	ug/L			05/11/16 13:17	1
Chloroethane	**5.3**		1.0	0.51	ug/L			05/11/16 13:17	1
Chloroform	<1.0		1.0	0.37	ug/L			05/11/16 13:17	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/11/16 13:17	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/11/16 13:17	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/11/16 13:17	1
Cyclohexane	**75**		1.0	0.49	ug/L			05/11/16 13:17	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/11/16 13:17	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			05/11/16 13:17	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/11/16 13:17	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/11/16 13:17	1
1,4-Dichlorobenzene	**2.0**		1.0	0.36	ug/L			05/11/16 13:17	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/11/16 13:17	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/11/16 13:17	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/11/16 13:17	1
Ethylbenzene	**100**		0.50	0.18	ug/L			05/11/16 13:17	1
2-Hexanone	<5.0		5.0	1.6	ug/L			05/11/16 13:17	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			05/11/16 13:17	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/11/16 13:17	1
Methylcyclohexane	**72**		1.0	0.32	ug/L			05/11/16 13:17	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/11/16 13:17	1
Methyl Ethyl Ketone	**5.1**		5.0	2.1	ug/L			05/11/16 13:17	1
methyl isobutyl ketone	**5.0**		5.0	2.2	ug/L			05/11/16 13:17	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/11/16 13:17	1
Styrene	**4.3**		1.0	0.39	ug/L			05/11/16 13:17	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/11/16 13:17	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/11/16 13:17	1
Toluene	**150**		0.50	0.15	ug/L			05/11/16 13:17	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/11/16 13:17	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/11/16 13:17	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/11/16 13:17	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/11/16 13:17	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/11/16 13:17	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/11/16 13:17	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/11/16 13:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/11/16 13:17	1
Vinyl chloride	**0.70**		0.50	0.20	ug/L			05/11/16 13:17	1

Client Sample ID: MW-11-GW-04282016

Date Collected: 04/28/16 14:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-4

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		71 - 120		05/11/16 13:17	1
Dibromofluoromethane	85		70 - 120		05/11/16 13:17	1
1,2-Dichloroethane-d4 (Surr)	100		71 - 127		05/11/16 13:17	1
Toluene-d8 (Surr)	89		75 - 120		05/11/16 13:17	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**620**	D	5.0	1.1	ug/L			05/11/16 13:45	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		71 - 120		05/11/16 13:45	5
Dibromofluoromethane	88		70 - 120		05/11/16 13:45	5
1,2-Dichloroethane-d4 (Surr)	103		71 - 127		05/11/16 13:45	5
Toluene-d8 (Surr)	91		75 - 120		05/11/16 13:45	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.0		8.0	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
Acenaphthylene	<8.0		8.0	2.2	ug/L		05/03/16 09:31	05/05/16 03:15	10
Acetophenone	<40		40	5.3	ug/L		05/03/16 09:31	05/05/16 03:15	10
Anthracene	<8.0		8.0	2.7	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[a]anthracene	<1.6		1.6	0.46	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[a]pyrene	<1.6		1.6	0.80	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[b]fluoranthene	<1.6		1.6	0.65	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[g,h,i]perylene	<8.0		8.0	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzo[k]fluoranthene	<1.6		1.6	0.51	ug/L		05/03/16 09:31	05/05/16 03:15	10
Bis(2-chloroethoxy)methane	**3.8**	J D	16	2.3	ug/L		05/03/16 09:31	05/05/16 03:15	10
Bis(2-chloroethyl)ether	<16		16	2.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Bis(2-ethylhexyl) phthalate	<80		80	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Bromophenyl phenyl ether	<40		40	4.3	ug/L		05/03/16 09:31	05/05/16 03:15	10
Butyl benzyl phthalate	<16		16	3.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
Carbazole	<40		40	2.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Chloroaniline	<80	UJ	80	16	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Chloro-3-methylphenol	<80		80	19	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Chloronaphthalene	<16		16	1.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Chlorophenol	<40		40	4.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Chlorophenyl phenyl ether	<40		40	5.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Chrysene	<4.0		4.0	0.55	ug/L		05/03/16 09:31	05/05/16 03:15	10
Dibenz(a,h)anthracene	<2.4		2.4	0.41	ug/L		05/03/16 09:31	05/05/16 03:15	10
Dibenzofuran	<16		16	2.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
3,3'-Dichlorobenzidine	<40		40	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dichlorophenol	<80		80	21	ug/L		05/03/16 09:31	05/05/16 03:15	10
Diethyl phthalate	<16		16	2.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dimethylphenol	**16**	J D	80	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
Dimethyl phthalate	<16		16	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
Di-n-butyl phthalate	<40		40	5.9	ug/L		05/03/16 09:31	05/05/16 03:15	10
4,6-Dinitro-2-methylphenol	<160		160	47	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dinitrophenol	<160		160	69	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4-Dinitrotoluene	<8.0		8.0	2.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,6-Dinitrotoluene	<4.0		4.0	0.59	ug/L		05/03/16 09:31	05/05/16 03:15	10
Di-n-octyl phthalate	<80		80	8.4	ug/L		05/03/16 09:31	05/05/16 03:15	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-11-GW-04282016

Date Collected: 04/28/16 14:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.0		8.0	3.7	ug/L		05/03/16 09:31	05/05/16 03:15	10
Fluorene	<8.0		8.0	2.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorobenzene	<4.0		4.0	0.64	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorobutadiene	<40		40	4.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachlorocyclopentadiene	<160	UJ	160	51	ug/L		05/03/16 09:31	05/05/16 03:15	10
Hexachloroethane	<40		40	4.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
Indeno[1,2,3-cd]pyrene	<1.6		1.6	0.60	ug/L		05/03/16 09:31	05/05/16 03:15	10
Isophorone	<16		16	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Methylnaphthalene	**2.9**	J D	4.0	0.52	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Methylphenol	<16		16	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
3 & 4 Methylphenol	**180**	D	16	3.6	ug/L		05/03/16 09:31	05/05/16 03:15	10
Naphthalene	**8.0**	D	8.0	2.5	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Nitroaniline	<40		40	10	ug/L		05/03/16 09:31	05/05/16 03:15	10
3-Nitroaniline	<80		80	14	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Nitroaniline	<80		80	13	ug/L		05/03/16 09:31	05/05/16 03:15	10
Nitrobenzene	<8.0		8.0	3.6	ug/L		05/03/16 09:31	05/05/16 03:15	10
2-Nitrophenol	<80		80	20	ug/L		05/03/16 09:31	05/05/16 03:15	10
4-Nitrophenol	<160		160	60	ug/L		05/03/16 09:31	05/05/16 03:15	10
N-Nitrosodi-n-propylamine	<4.0		4.0	1.2	ug/L		05/03/16 09:31	05/05/16 03:15	10
N-Nitrosodiphenylamine	<8.0		8.0	3.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,2'-oxybis[1-chloropropane]	<16	UJ	16	3.1	ug/L		05/03/16 09:31	05/05/16 03:15	10
Pentachlorophenol	<160		160	32	ug/L		05/03/16 09:31	05/05/16 03:15	10
Phenanthrene	<8.0		8.0	2.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Phenol	**31**	J D	40	5.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
Pyrene	<8.0		8.0	3.4	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4,5-Trichlorophenol	<80		80	21	ug/L		05/03/16 09:31	05/05/16 03:15	10
2,4,6-Trichlorophenol	<40		40	5.8	ug/L		05/03/16 09:31	05/05/16 03:15	10
Benzaldehyde	<160	UJ	160	120	ug/L		05/03/16 09:31	05/05/16 03:15	10
Caprolactam	<80		80	12	ug/L		05/03/16 09:31	05/05/16 03:15	10
Atrazine	<40		40	5.0	ug/L		05/03/16 09:31	05/05/16 03:15	10
1,1'-Biphenyl	**19**	J D	40	2.9	ug/L		05/03/16 09:31	05/05/16 03:15	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*84*		*30 - 123*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
2-Fluorophenol (Surr)	*56*		*30 - 110*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
Phenol-d5 (Surr)	*45*		*20 - 100*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
Terphenyl-d14 (Surr)	*88*		*42 - 150*	*05/03/16 09:31*	*05/05/16 03:15*	*10*
2,4,6-Tribromophenol (Surr)	*127*		*30 - 150*	*05/03/16 09:31*	*05/05/16 03:15*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		04/29/16 10:36	05/03/16 13:40	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		04/29/16 10:36	05/03/16 13:40	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		04/29/16 10:36	05/03/16 13:40	1
beta-BHC	<0.040		0.040	0.010	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		04/29/16 10:36	05/03/16 13:40	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		04/29/16 10:36	05/03/16 13:40	1
delta-BHC	<0.040		0.040	0.010	ug/L		04/29/16 10:36	05/03/16 13:40	1

Client Sample ID: MW-11-GW-04282016

Date Collected: 04/28/16 14:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endrin	<0.040		0.040	0.014	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		04/29/16 10:36	05/03/16 13:40	1
Endrin ketone	<0.040		0.040	0.017	ug/L		04/29/16 10:36	05/03/16 13:40	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		04/29/16 10:36	05/03/16 13:40	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		04/29/16 10:36	05/03/16 13:40	1
Heptachlor	<0.040		0.040	0.013	ug/L		04/29/16 10:36	05/03/16 13:40	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		04/29/16 10:36	05/03/16 13:40	1
Methoxychlor	<0.080		0.080	0.023	ug/L		04/29/16 10:36	05/03/16 13:40	1
Toxaphene	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*28*	*X*	*30 - 143*	*04/29/16 10:36*	*05/03/16 13:40*	*1*
Tetrachloro-m-xylene	*54*		*30 - 120*	*04/29/16 10:36*	*05/03/16 13:40*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1221	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1232	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1242	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1248	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1254	<0.40		0.40	0.20	ug/L		04/29/16 10:36	05/03/16 20:27	1
PCB-1260	<0.40		0.40	0.070	ug/L		04/29/16 10:36	05/03/16 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*110*		*30 - 127*	*04/29/16 10:36*	*05/03/16 20:27*	*1*
DCB Decachlorobiphenyl	*66*		*30 - 150*	*04/29/16 10:36*	*05/03/16 20:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.12**	**J**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:43	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:43	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:43	1
Barium	**1.1**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:43	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:43	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:43	1
Calcium	**130**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:43	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:43	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:43	1
Copper	**0.0053**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:43	1
Iron	**35**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:43	1
Lead	**0.0073**		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:06	1
Magnesium	**120**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:43	1
Manganese	**0.27**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:43	1
Nickel	**0.017**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:43	1
Potassium	**140**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: MW-11-GW-04282016

Date Collected: 04/28/16 14:22
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-4

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	**0.0054**	J ~~A~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:43	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:43	1
Sodium	**360**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:43	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:43	1
Vanadium	**0.0053**		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:43	1
Zinc	**0.014**	J	0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	~~A~~	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:48	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:48	1
Arsenic	<0.010		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:48	1
Barium	**1.2**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:48	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:48	1
Calcium	**140**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:48	1
Chromium	**0.0083**	J	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:48	1
Cobalt	**0.0021**	J	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:48	1
Copper	**0.0039**	J	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:48	1
Iron	**36**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:48	1
Lead	**0.0044**	J	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:11	1
Magnesium	**120**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:48	1
Manganese	**0.28**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:48	1
Nickel	**0.019**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:48	1
Potassium	**150**		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:48	1
Selenium	<0.010	~~A~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:48	1
Sodium	**380**		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:48	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:48	1
Vanadium	**0.0056**		0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:48	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:37	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:33	1
Sulfate	**6.5**		5.0	2.0	mg/L			05/06/16 09:15	1
Total Organic Carbon - Duplicates	**91**		4.0	0.92	mg/L			05/08/16 19:05	4
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	**85**		9.1	2.9	mg/L			05/03/16 11:36	1
Ammonia	**67**	~~B~~	5.0	1.1	mg/L		05/09/16 19:05	05/09/16 22:20	25
Nitrogen, Nitrite	< 0.020 ~~**0.020**~~	~~B~~ UB	0.020	0.0032	mg/L			04/29/16 14:53	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			05/11/16 14:12	10
Benzene	**450**	D	5.0	1.5	ug/L			05/11/16 14:12	10
Bromodichloromethane	<10		10	3.7	ug/L			05/11/16 14:12	10
Bromoform	<10		10	4.8	ug/L			05/11/16 14:12	10
Bromomethane	<20	UJ	20	8.0	ug/L			05/11/16 14:12	10
Carbon disulfide	<20		20	4.5	ug/L			05/11/16 14:12	10
Carbon tetrachloride	<10		10	3.8	ug/L			05/11/16 14:12	10
Chlorobenzene	<10		10	3.9	ug/L			05/11/16 14:12	10
Chloroethane	<10		10	5.1	ug/L			05/11/16 14:12	10
Chloroform	<10		10	3.7	ug/L			05/11/16 14:12	10
Chloromethane	<10		10	3.2	ug/L			05/11/16 14:12	10
cis-1,2-Dichloroethene	**26**	JD	10	4.1	ug/L			05/11/16 14:12	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			05/11/16 14:12	10
Cyclohexane	<10		10	4.9	ug/L			05/11/16 14:12	10
Dibromochloromethane	<10		10	4.9	ug/L			05/11/16 14:12	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			05/11/16 14:12	10
1,2-Dibromoethane	<10		10	3.9	ug/L			05/11/16 14:12	10
1,2-Dichlorobenzene	**14**	D	10	3.3	ug/L			05/11/16 14:12	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			05/11/16 14:12	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			05/11/16 14:12	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			05/11/16 14:12	10
1,1-Dichloroethane	**23**	JD	10	4.1	ug/L			05/11/16 14:12	10
1,2-Dichloroethane	<10		10	3.9	ug/L			05/11/16 14:12	10
1,1-Dichloroethene	<10		10	3.9	ug/L			05/11/16 14:12	10
1,2-Dichloropropane	<10		10	4.3	ug/L			05/11/16 14:12	10
Ethylbenzene	**1900**	D	5.0	1.8	ug/L			05/11/16 14:12	10
2-Hexanone	<50		50	16	ug/L			05/11/16 14:12	10
Isopropylbenzene	**110**	D	10	3.9	ug/L			05/11/16 14:12	10
Methyl acetate	<50		50	20	ug/L			05/11/16 14:12	10
Methylcyclohexane	<10		10	3.2	ug/L			05/11/16 14:12	10
Methylene Chloride	<50		50	16	ug/L			05/11/16 14:12	10
Methyl Ethyl Ketone	<50		50	21	ug/L			05/11/16 14:12	10
methyl isobutyl ketone	<50		50	22	ug/L			05/11/16 14:12	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			05/11/16 14:12	10
Styrene	**120**	JD	10	3.9	ug/L			05/11/16 14:12	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			05/11/16 14:12	10
Tetrachloroethene	<10		10	3.7	ug/L			05/11/16 14:12	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			05/11/16 14:12	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			05/11/16 14:12	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			05/11/16 14:12	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			05/11/16 14:12	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			05/11/16 14:12	10
Trichloroethene	<5.0		5.0	1.6	ug/L			05/11/16 14:12	10
Trichlorofluoromethane	<10		10	4.3	ug/L			05/11/16 14:12	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			05/11/16 14:12	10
Vinyl chloride	**7.1**	D	5.0	2.0	ug/L			05/11/16 14:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*05/11/16 14:12*	*10*

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Lab Sample ID: 500-110872-5

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*86*		*70 - 120*		*05/11/16 14:12*	*10*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*05/11/16 14:12*	*10*
Toluene-d8 (Surr)	*90*		*75 - 120*		*05/11/16 14:12*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**4600**	JD	50	15	ug/L			05/11/16 14:40	100
Xylenes, Total	**14000**	D	100	22	ug/L			05/11/16 14:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*71 - 120*		*05/11/16 14:40*	*100*
Dibromofluoromethane	*90*		*70 - 120*		*05/11/16 14:40*	*100*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*05/11/16 14:40*	*100*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/11/16 14:40*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.1		8.1	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
Acenaphthylene	**5.1**	J D	8.1	2.2	ug/L		05/03/16 09:31	05/05/16 03:42	10
Acetophenone	<40		40	5.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Anthracene	<8.1		8.1	2.7	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[a]anthracene	<1.6		1.6	0.46	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[a]pyrene	<1.6		1.6	0.80	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[b]fluoranthene	<1.6		1.6	0.65	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[g,h,i]perylene	<8.1		8.1	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzo[k]fluoranthene	<1.6		1.6	0.52	ug/L		05/03/16 09:31	05/05/16 03:42	10
Bis(2-chloroethoxy)methane	<16		16	2.3	ug/L		05/03/16 09:31	05/05/16 03:42	10
Bis(2-chloroethyl)ether	<16		16	2.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Bis(2-ethylhexyl) phthalate	<81		81	14	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Bromophenyl phenyl ether	<40		40	4.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Butyl benzyl phthalate	<16		16	3.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
Carbazole	<40		40	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Chloroaniline	<81	~~J~~ UJ	81	16	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Chloro-3-methylphenol	<81		81	19	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Chloronaphthalene	<16		16	1.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Chlorophenol	<40		40	4.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Chlorophenyl phenyl ether	<40		40	5.1	ug/L		05/03/16 09:31	05/05/16 03:42	10
Chrysene	<4.0		4.0	0.55	ug/L		05/03/16 09:31	05/05/16 03:42	10
Dibenz(a,h)anthracene	<2.4		2.4	0.41	ug/L		05/03/16 09:31	05/05/16 03:42	10
Dibenzofuran	<16		16	2.1	ug/L		05/03/16 09:31	05/05/16 03:42	10
3,3'-Dichlorobenzidine	<40		40	14	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dichlorophenol	<81		81	21	ug/L		05/03/16 09:31	05/05/16 03:42	10
Diethyl phthalate	**31**	D	16	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dimethylphenol	**40**	J D	81	15	ug/L		05/03/16 09:31	05/05/16 03:42	10
Dimethyl phthalate	<16		16	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
Di-n-butyl phthalate	<40		40	5.9	ug/L		05/03/16 09:31	05/05/16 03:42	10
4,6-Dinitro-2-methylphenol	<160		160	48	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dinitrophenol	<160	~~J~~	160	69	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4-Dinitrotoluene	<8.1		8.1	2.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,6-Dinitrotoluene	<4.0		4.0	0.59	ug/L		05/03/16 09:31	05/05/16 03:42	10

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Lab Sample ID: 500-110872-5

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<81		81	8.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
Fluoranthene	<8.1		8.1	3.7	ug/L		05/03/16 09:31	05/05/16 03:42	10
Fluorene	<8.1		8.1	2.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachlorobenzene	<4.0		4.0	0.64	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachlorobutadiene	<40		40	4.2	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachlorocyclopentadiene	<160	UJ	160	51	ug/L		05/03/16 09:31	05/05/16 03:42	10
Hexachloroethane	<40		40	4.8	ug/L		05/03/16 09:31	05/05/16 03:42	10
Indeno[1,2,3-cd]pyrene	<1.6		1.6	0.60	ug/L		05/03/16 09:31	05/05/16 03:42	10
Isophorone	<16		16	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Methylnaphthalene	**20**	D	4.0	0.52	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Methylphenol	**14**	J D	16	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
3 & 4 Methylphenol	**280**	D	16	3.6	ug/L		05/03/16 09:31	05/05/16 03:42	10
Naphthalene	**260**	D	8.1	2.5	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Nitroaniline	<40		40	10	ug/L		05/03/16 09:31	05/05/16 03:42	10
3-Nitroaniline	<81		81	14	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Nitroaniline	<81		81	13	ug/L		05/03/16 09:31	05/05/16 03:42	10
Nitrobenzene	<8.1		8.1	3.6	ug/L		05/03/16 09:31	05/05/16 03:42	10
2-Nitrophenol	<81		81	20	ug/L		05/03/16 09:31	05/05/16 03:42	10
4-Nitrophenol	<160		160	60	ug/L		05/03/16 09:31	05/05/16 03:42	10
N-Nitrosodi-n-propylamine	<4.0		4.0	1.2	ug/L		05/03/16 09:31	05/05/16 03:42	10
N-Nitrosodiphenylamine	**15**	D	8.1	3.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,2'-oxybis[1-chloropropane]	<16	UJ	16	3.1	ug/L		05/03/16 09:31	05/05/16 03:42	10
Pentachlorophenol	<160		160	32	ug/L		05/03/16 09:31	05/05/16 03:42	10
Phenanthrene	<8.1		8.1	2.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Phenol	**84**	JD	40	5.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
Pyrene	<8.1		8.1	3.4	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4,5-Trichlorophenol	<81		81	21	ug/L		05/03/16 09:31	05/05/16 03:42	10
2,4,6-Trichlorophenol	<40		40	5.8	ug/L		05/03/16 09:31	05/05/16 03:42	10
Benzaldehyde	<160	UJ	160	120	ug/L		05/03/16 09:31	05/05/16 03:42	10
Caprolactam	<81		81	12	ug/L		05/03/16 09:31	05/05/16 03:42	10
Atrazine	<40		40	5.0	ug/L		05/03/16 09:31	05/05/16 03:42	10
1,1'-Biphenyl	**3.2**	J D	40	2.9	ug/L		05/03/16 09:31	05/05/16 03:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*83*		*30 - 123*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
Phenol-d5 (Surr)	*52*		*20 - 100*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*05/03/16 09:31*	*05/05/16 03:42*	*10*
2,4,6-Tribromophenol (Surr)	*139*		*30 - 150*	*05/03/16 09:31*	*05/05/16 03:42*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.20	UJ	0.20	0.027	ug/L		04/29/16 10:36	05/03/16 13:59	5
alpha-BHC	<0.20		0.20	0.013	ug/L		04/29/16 10:36	05/03/16 13:59	5
alpha-Chlordane	<0.20		0.20	0.022	ug/L		04/29/16 10:36	05/03/16 13:59	5
beta-BHC	<0.20		0.20	0.051	ug/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDD	<0.20		0.20	0.067	ug/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDE	<0.20		0.20	0.019	ug/L		04/29/16 10:36	05/03/16 13:59	5
4,4'-DDT	<0.20		0.20	0.016	ug/L		04/29/16 10:36	05/03/16 13:59	5

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Lab Sample ID: 500-110872-5

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.20	UJ	0.20	0.052	ug/L		04/29/16 10:36	05/03/16 13:59	5
Dieldrin	<0.20		0.20	0.065	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endosulfan I	<0.20		0.20	0.021	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endosulfan II	<0.20		0.20	0.014	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endosulfan sulfate	<0.20		0.20	0.059	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endrin	<0.20		0.20	0.071	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endrin aldehyde	<0.20		0.20	0.041	ug/L		04/29/16 10:36	05/03/16 13:59	5
Endrin ketone	<0.20		0.20	0.086	ug/L		04/29/16 10:36	05/03/16 13:59	5
gamma-BHC (Lindane)	<0.20		0.20	0.028	ug/L		04/29/16 10:36	05/03/16 13:59	5
gamma-Chlordane	<0.20		0.20	0.036	ug/L		04/29/16 10:36	05/03/16 13:59	5
Heptachlor	<0.20		0.20	0.068	ug/L		04/29/16 10:36	05/03/16 13:59	5
Heptachlor epoxide	<0.20		0.20	0.069	ug/L		04/29/16 10:36	05/03/16 13:59	5
Methoxychlor	<0.40		0.40	0.12	ug/L		04/29/16 10:36	05/03/16 13:59	5
Toxaphene	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/03/16 13:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*11*	*X*	*30 - 143*	*04/29/16 10:36*	*05/03/16 13:59*	*5*
Tetrachloro-m-xylene	*414*	*X*	*30 - 120*	*04/29/16 10:36*	*05/03/16 13:59*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<2.0		2.0	0.34	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1221	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1232	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1242	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1248	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1254	<2.0		2.0	1.0	ug/L		04/29/16 10:36	05/04/16 11:00	5
PCB-1260	<2.0		2.0	0.35	ug/L		04/29/16 10:36	05/04/16 11:00	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*89*		*30 - 127*	*04/29/16 10:36*	*05/04/16 11:00*	*5*
DCB Decachlorobiphenyl	*48*		*30 - 150*	*04/29/16 10:36*	*05/04/16 11:00*	*5*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.066**	**J**	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:53	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:53	1
Arsenic	**0.0075**	**J**	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:53	1
Barium	**0.25**		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:53	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:53	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:53	1
Calcium	**120**		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:53	1
Chromium	**0.0045**	**J**	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:53	1
Cobalt	**0.0026**	**J**	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:53	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:53	1
Iron	**7.3**		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:53	1
Lead	**0.0029**	**J**	0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:16	1
Magnesium	**43**		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:53	1
Manganese	**0.35**		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:53	1
Nickel	**0.011**		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:53	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110872-1

Client Sample ID: DUP-1(04282016)

Date Collected: 04/28/16 00:00
Date Received: 04/28/16 16:05

Lab Sample ID: 500-110872-5

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	68		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:53	1
Selenium	0.0059	J ~~A~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:53	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:53	1
Sodium	240		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:53	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:53	1
Vanadium	0.0039	J	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:53	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20	~~A~~	0.20	0.062	mg/L		04/29/16 08:31	04/29/16 19:58	1
Antimony	<0.020		0.020	0.0064	mg/L		04/29/16 08:31	04/29/16 19:58	1
Arsenic	0.0085	J	0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:58	1
Barium	0.25		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		04/29/16 08:31	04/29/16 19:58	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		04/29/16 08:31	04/29/16 19:58	1
Calcium	110		0.20	0.059	mg/L		04/29/16 08:31	04/29/16 19:58	1
Chromium	0.0045	J	0.010	0.0024	mg/L		04/29/16 08:31	04/29/16 19:58	1
Cobalt	0.0025	J	0.0050	0.00096	mg/L		04/29/16 08:31	04/29/16 19:58	1
Copper	<0.010		0.010	0.0022	mg/L		04/29/16 08:31	04/29/16 19:58	1
Iron	7.5		0.20	0.10	mg/L		04/29/16 08:31	04/29/16 19:58	1
Lead	<0.0050		0.0050	0.0024	mg/L		04/29/16 08:31	05/03/16 18:22	1
Magnesium	46		0.10	0.034	mg/L		04/29/16 08:31	04/29/16 19:58	1
Manganese	0.37		0.010	0.0034	mg/L		04/29/16 08:31	04/29/16 19:58	1
Nickel	0.011		0.010	0.0031	mg/L		04/29/16 08:31	04/29/16 19:58	1
Potassium	71		0.50	0.16	mg/L		04/29/16 08:31	04/29/16 19:58	1
Selenium	0.0077	J ~~A~~	0.010	0.0046	mg/L		04/29/16 08:31	04/29/16 19:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		04/29/16 08:31	04/29/16 19:58	1
Sodium	240		1.0	0.43	mg/L		04/29/16 08:31	04/29/16 19:58	1
Thallium	<0.010		0.010	0.0028	mg/L		04/29/16 08:31	04/29/16 19:58	1
Vanadium	0.0036	J	0.0050	0.0019	mg/L		04/29/16 08:31	04/29/16 19:58	1
Zinc	<0.020		0.020	0.0090	mg/L		04/29/16 08:31	04/29/16 19:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/02/16 13:45	05/04/16 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	1.7		1.0	0.22	mg/L			05/03/16 05:35	1
Sulfate	150		50	20	mg/L			05/06/16 09:16	10
Total Organic Carbon - Duplicates	56		2.0	0.46	mg/L			05/10/16 00:36	2
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/03/16 14:20	1
Total Suspended Solids	26		5.0	1.6	mg/L			05/03/16 11:37	1
Ammonia	52	J ~~B~~	5.0	1.1	mg/L		05/09/16 19:05	05/09/16 22:23	25
Nitrogen, Nitrite	< 0.020 ~~0.010~~	~~J B~~ UB	0.020	0.0032	mg/L			04/29/16 14:53	1

Client Sample ID: DUP-1(04282016)

Lab Sample ID: 500-110872-5

Date Collected: 04/28/16 00:00

Matrix: Water

Date Received: 04/28/16 16:05

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/02/16 19:28	1

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 500-110948

Send Results to:

Contact & Company Name: Arcadis

Telephone: 312 575 3772

Address: 120 S. LaSalle St. Suite 1350 Chicago, IL

Fax:

City State Zip

E-mail Address: ellyn.gates@arcadis.com

Project Name/Location (City, State): LCCS (Chicago, IL)

Project #: CI001805.0002.00005

Sampler's Printed Name: Nicholas Ickes

Sampler's Signature:

	Preservative	E	E	C	C	A	A							
	Filtered (✓)				✓									
	# of Containers	6		1	1	1		9						
	Container Information													

PARAMETER ANALYSIS & METHOD

	Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	8270D (MOD) List 4.2	8082A	8081B	7470A Mercury 6010C TAL Metals -Hg	7470A Mercury 6010C TAL Metals -Hg (Dissolved)	SM4500-NH3-G Ammonia	SM4500-NO3-F Nitrogen, Nitrate, Nitrite	See "Special Instructions"	REMARKS
1	MW-2-GW-04292016	4-28-16	1617		✓	W	X	X	X	X	X	X	X		
2	MW-10-GW-04292016	4-29-16	0707		✓	W	X	X	X	X	X	X	X		
3	MW-6-GW-04292016		0847		✓	W	X	X	X	X	X	X	X		
4	MW-7-GW-04292016		1047		✓	W	X	X	X	X	X	X	X		
5	MW-9-GW-04292016		1227		✓	W	X	X	X	X	X	X	X		
6	MW-8-GW-04292016		1402		✓	W	X	X	X	X	X	X	X		
7	DUP-2 (04292016)		—		✓	W	X	X	X	X	X	X	X		

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

500-110948 COC

Special Instructions/Comments: 9034_Calc-Sulfide; 8260B-Target Compound List 4.2; 9060A-(MOD) Local Method; SM4500_NO2_B-Nitrogen, Nitrite; 9038-Sulfate; 2540D-Total Suspended Solids

☐ Special QA/QC Instructions(✓):

* Level IV Data Package

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: TestAmerica Chicago	Cooler Custody Seal (✓) ☒ Intact ☐ Not Intact	Printed Name: Nicholas Ickes	Printed Name: David Beckner	Printed Name: David Beckner	Printed Name: Ariel Sanchez
☒ Cooler packed with ice (✓)		Signature:	Signature: David Beckner	Signature: David Beckner	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: TA	Firm/Courier: TA	Firm: TA-Chicago
Shipping Tracking #:	Condition/Cooler Temp: 3.3, 3.6, 3.1	Date/Time: 4-29-16 1617	Date/Time: 4-29-16 1617	Date/Time: 4/29/16 17:05	Date/Time: 04/29/16 17:05

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

05/16/2016

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Lab Sample ID: 500-110948-1

Date Collected: 04/28/16 16:17

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 05:28	1
Benzene	**14**		0.50	0.15	ug/L			05/12/16 05:28	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 05:28	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 05:28	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 05:28	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 05:28	1
Chloroethane	**4.8**		1.0	0.51	ug/L			05/12/16 05:28	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Chloromethane	<1.0	UJ	1.0	0.32	ug/L			05/12/16 05:28	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 05:28	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 05:28	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 05:28	1
Dibromochloromethane	<1.0	UJ	1.0	0.49	ug/L			05/12/16 05:28	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 05:28	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,2-Dichlorobenzene	**24**		1.0	0.33	ug/L			05/12/16 05:28	1
1,3-Dichlorobenzene	**5.6**		1.0	0.40	ug/L			05/12/16 05:28	1
1,4-Dichlorobenzene	**23**		1.0	0.36	ug/L			05/12/16 05:28	1
Dichlorodifluoromethane	<2.0	UJ	2.0	0.67	ug/L			05/12/16 05:28	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 05:28	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 05:28	1
Ethylbenzene	**2.2**		0.50	0.18	ug/L			05/12/16 05:28	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 05:28	1
Isopropylbenzene	**5.3**		1.0	0.39	ug/L			05/12/16 05:28	1
Methyl acetate	**20**		5.0	2.0	ug/L			05/12/16 05:28	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 05:28	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 05:28	1
Methyl Ethyl Ketone	<5.0	UJ	5.0	2.1	ug/L			05/12/16 05:28	1
methyl isobutyl ketone	<5.0	UJ	5.0	2.2	ug/L			05/12/16 05:28	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 05:28	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 05:28	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 05:28	1
Toluene	**1.3**		0.50	0.15	ug/L			05/12/16 05:28	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 05:28	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 05:28	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 05:28	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 05:28	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 05:28	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 05:28	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 05:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 05:28	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 05:28	1
Xylenes, Total	**6.2**		1.0	0.22	ug/L			05/12/16 05:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*05/12/16 05:28*	*1*
Dibromofluoromethane	*99*		*70 - 120*		*05/12/16 05:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*05/12/16 05:28*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*05/12/16 05:28*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**660**	D	5.0	1.9	ug/L			05/12/16 05:55	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*05/12/16 05:55*	*5*
Dibromofluoromethane	*99*		*70 - 120*		*05/12/16 05:55*	*5*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*05/12/16 05:55*	*5*
Toluene-d8 (Surr)	*98*		*75 - 120*		*05/12/16 05:55*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.1**		0.83	0.26	ug/L		05/05/16 08:14	05/13/16 09:00	1
Acenaphthylene	<0.83		0.83	0.22	ug/L		05/05/16 08:14	05/13/16 09:00	1
Acetophenone	<4.1		4.1	0.55	ug/L		05/05/16 08:14	05/13/16 09:00	1
Anthracene	<0.83		0.83	0.28	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[a]anthracene	<0.17		0.17	0.047	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[a]pyrene	<0.17		0.17	0.082	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[b]fluoranthene	<0.17		0.17	0.067	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[g,h,i]perylene	<0.83		0.83	0.31	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzo[k]fluoranthene	<0.17		0.17	0.053	ug/L		05/05/16 08:14	05/13/16 09:00	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		05/05/16 08:14	05/13/16 09:00	1
Bis(2-chloroethyl)ether	**0.97**	J	1.7	0.24	ug/L		05/05/16 08:14	05/13/16 09:00	1
Bis(2-ethylhexyl) phthalate	**2.0**	J	8.3	1.4	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Bromophenyl phenyl ether	<4.1		4.1	0.45	ug/L		05/05/16 08:14	05/13/16 09:00	1
Butyl benzyl phthalate	<1.7		1.7	0.40	ug/L		05/05/16 08:14	05/13/16 09:00	1
Carbazole	<4.1		4.1	0.29	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Chloroaniline	<8.3	UJ	8.3	1.7	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Chloro-3-methylphenol	<8.3		8.3	1.9	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Chloronaphthalene	<1.7		1.7	0.19	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Chlorophenol	**5.8**		4.1	0.46	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Chlorophenyl phenyl ether	<4.1		4.1	0.53	ug/L		05/05/16 08:14	05/13/16 09:00	1
Chrysene	<0.41		0.41	0.056	ug/L		05/05/16 08:14	05/13/16 09:00	1
Dibenz(a,h)anthracene	<0.25		0.25	0.042	ug/L		05/05/16 08:14	05/13/16 09:00	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		05/05/16 08:14	05/13/16 09:00	1
3,3'-Dichlorobenzidine	<4.1		4.1	1.4	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dichlorophenol	<8.3		8.3	2.2	ug/L		05/05/16 08:14	05/13/16 09:00	1
Diethyl phthalate	**0.50**	J	1.7	0.30	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dimethylphenol	<8.3	UJ	8.3	1.5	ug/L		05/05/16 08:14	05/13/16 09:00	1
Dimethyl phthalate	<1.7		1.7	0.26	ug/L		05/05/16 08:14	05/13/16 09:00	1
Di-n-butyl phthalate	**1.9**	J	4.1	0.61	ug/L		05/05/16 08:14	05/13/16 09:00	1
4,6-Dinitro-2-methylphenol	<17		17	4.9	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dinitrophenol	<17		17	7.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4-Dinitrotoluene	<0.83		0.83	0.20	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,6-Dinitrotoluene	<0.41		0.41	0.061	ug/L		05/05/16 08:14	05/13/16 09:00	1
Di-n-octyl phthalate	<8.3		8.3	0.87	ug/L		05/05/16 08:14	05/13/16 09:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.83		0.83	0.38	ug/L		05/05/16 08:14	05/13/16 09:00	1
Fluorene	**0.59**	**J**	0.83	0.20	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachlorobenzene	<0.41		0.41	0.066	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachlorobutadiene	<4.1		4.1	0.43	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachlorocyclopentadiene	<17		17	5.3	ug/L		05/05/16 08:14	05/13/16 09:00	1
Hexachloroethane	<4.1		4.1	0.50	ug/L		05/05/16 08:14	05/13/16 09:00	1
Indeno[1,2,3-cd]pyrene	<0.17		0.17	0.062	ug/L		05/05/16 08:14	05/13/16 09:00	1
Isophorone	<1.7		1.7	0.31	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Methylphenol	<1.7		1.7	0.25	ug/L		05/05/16 08:14	05/13/16 09:00	1
3 & 4 Methylphenol	**6.8**		1.7	0.37	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Nitroaniline	<4.1		4.1	1.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
3-Nitroaniline	<8.3		8.3	1.5	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Nitroaniline	<8.3		8.3	1.4	ug/L		05/05/16 08:14	05/13/16 09:00	1
Nitrobenzene	<0.83		0.83	0.37	ug/L		05/05/16 08:14	05/13/16 09:00	1
2-Nitrophenol	<8.3		8.3	2.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
4-Nitrophenol	<17		17	6.2	ug/L		05/05/16 08:14	05/13/16 09:00	1
N-Nitrosodi-n-propylamine	<0.41		0.41	0.13	ug/L		05/05/16 08:14	05/13/16 09:00	1
N-Nitrosodiphenylamine	**4.0**		0.83	0.31	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/13/16 09:00	1
Pentachlorophenol	<17		17	3.3	ug/L		05/05/16 08:14	05/13/16 09:00	1
Phenanthrene	**0.33**	**J**	0.83	0.25	ug/L		05/05/16 08:14	05/13/16 09:00	1
Phenol	<4.1		4.1	0.56	ug/L		05/05/16 08:14	05/13/16 09:00	1
Pyrene	<0.83		0.83	0.35	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4,5-Trichlorophenol	<8.3		8.3	2.1	ug/L		05/05/16 08:14	05/13/16 09:00	1
2,4,6-Trichlorophenol	<4.1		4.1	0.59	ug/L		05/05/16 08:14	05/13/16 09:00	1
Benzaldehyde	~~<17~~ *	R	~~17~~	~~13~~	~~ug/L~~		05/05/16 08:14	05/13/16 09:00	1
Caprolactam	<8.3		8.3	1.2	ug/L		05/05/16 08:14	05/13/16 09:00	1
Atrazine	<4.1		4.1	0.52	ug/L		05/05/16 08:14	05/13/16 09:00	1
1,1'-Biphenyl	**0.70**	**J**	4.1	0.30	ug/L		05/05/16 08:14	05/13/16 09:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*64*		*30 - 123*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*05/05/16 08:14*	*05/13/16 09:00*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*30 - 150*	*05/05/16 08:14*	*05/13/16 09:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**120**	D	4.1	0.54	ug/L		05/05/16 08:14	05/13/16 00:51	10
Naphthalene	**90**	D	8.3	2.6	ug/L		05/05/16 08:14	05/13/16 00:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*30 - 123*	*05/05/16 08:14*	*05/13/16 00:51*	*10*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*05/05/16 08:14*	*05/13/16 00:51*	*10*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*	*05/05/16 08:14*	*05/13/16 00:51*	*10*
Phenol-d5 (Surr)	*51*		*20 - 100*	*05/05/16 08:14*	*05/13/16 00:51*	*10*
Terphenyl-d14 (Surr)	*118*		*42 - 150*	*05/05/16 08:14*	*05/13/16 00:51*	*10*
2,4,6-Tribromophenol (Surr)	*98*		*30 - 150*	*05/05/16 08:14*	*05/13/16 00:51*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.042		0.042	0.0055	ug/L		05/02/16 16:20	05/03/16 15:35	1
alpha-BHC	<0.042		0.042	0.0027	ug/L		05/02/16 16:20	05/03/16 15:35	1
alpha-Chlordane	<0.042		0.042	0.0046	ug/L		05/02/16 16:20	05/03/16 15:35	1
beta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 15:35	1
4,4'-DDD	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	1
4,4'-DDE	<0.042		0.042	0.0039	ug/L		05/02/16 16:20	05/03/16 15:35	1
4,4'-DDT	<0.042		0.042	0.0033	ug/L		05/02/16 16:20	05/03/16 15:35	1
delta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 15:35	1
Dieldrin	<0.042		0.042	0.013	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endosulfan I	<0.042		0.042	0.0043	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endosulfan II	<0.042		0.042	0.0029	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endosulfan sulfate	<0.042		0.042	0.012	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endrin	<0.042		0.042	0.015	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endrin aldehyde	<0.042		0.042	0.0085	ug/L		05/02/16 16:20	05/03/16 15:35	1
Endrin ketone	<0.042		0.042	0.018	ug/L		05/02/16 16:20	05/03/16 15:35	1
gamma-BHC (Lindane)	<0.042		0.042	0.0058	ug/L		05/02/16 16:20	05/03/16 15:35	1
gamma-Chlordane	<0.042		0.042	0.0075	ug/L		05/02/16 16:20	05/03/16 15:35	1
Heptachlor	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	1
Heptachlor epoxide	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 15:35	1
Methoxychlor	<0.083		0.083	0.024	ug/L		05/02/16 16:20	05/03/16 15:35	1
Toxaphene	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*05/02/16 16:20*	*05/03/16 15:35*	*1*
Tetrachloro-m-xylene	*142*	*X*	*30 - 120*	*05/02/16 16:20*	*05/03/16 15:35*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.42		0.42	0.070	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1221	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1232	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1242	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1248	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1254	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:06	1
PCB-1260	<0.42		0.42	0.073	ug/L		05/02/16 16:20	05/03/16 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*30 - 127*	*05/02/16 16:20*	*05/03/16 17:06*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*05/02/16 16:20*	*05/03/16 17:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 18:49	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 18:49	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:49	1
Barium	**0.30**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 18:49	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 18:49	1
Calcium	**100**	~~**J**~~ J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 18:49	1
Chromium	**0.0026**	**J**	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 18:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Date Collected: 04/28/16 16:17
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 18:49	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:49	1
Iron	**37**	~~V~~ J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 18:49	1
Lead	**0.0034**	J	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 18:49	1
Magnesium	**52**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 18:49	1
Manganese	**0.39**	~~V~~	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 18:49	1
Nickel	**0.0046**	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:49	1
Potassium	**33**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 18:49	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 18:49	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 18:49	1
Sodium	**150**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 18:49	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 18:49	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 18:49	1
Zinc	**0.093**		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 18:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 18:58	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 18:58	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:58	1
Barium	**0.32**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 18:58	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 18:58	1
Calcium	**110**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 18:58	1
Chromium	**0.0027**	J	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 18:58	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 18:58	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 18:58	1
Iron	**40**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 18:58	1
Lead	<0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 18:58	1
Magnesium	**57**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 18:58	1
Manganese	**0.41**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 18:58	1
Nickel	**0.0039**	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 18:58	1
Potassium	**36**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 18:58	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 18:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 18:58	1
Sodium	**170**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 18:58	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 18:58	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 18:58	1
Zinc	**0.086**	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 18:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:00	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-2-GW-04282016

Lab Sample ID: 500-110948-1

Date Collected: 04/28/16 16:17

Matrix: Water

Date Received: 04/30/16 07:34

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:38	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:17	1
Total Organic Carbon - Duplicates	**21**		1.0	0.23	mg/L			05/13/16 22:17	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**77**		5.0	1.6	mg/L			05/03/16 11:44	1
Ammonia	**43**	~~B~~	4.0	0.86	mg/L		05/11/16 18:12	05/12/16 19:17	20
Nitrogen, Nitrite	**0.0055**	**J**	0.020	0.0032	mg/L			04/30/16 12:19	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Lab Sample ID: 500-110948-2

Date Collected: 04/29/16 07:07
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			05/12/16 18:46	1
Benzene	**0.40**	**J**	0.50	0.15	ug/L			05/12/16 18:46	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 18:46	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 18:46	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 18:46	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 18:46	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 18:46	1
Chlorobenzene	**0.71**	**J**	1.0	0.39	ug/L			05/12/16 18:46	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 18:46	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 18:46	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 18:46	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 18:46	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 18:46	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 18:46	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 18:46	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 18:46	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 18:46	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 18:46	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/12/16 18:46	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 18:46	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 18:46	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 18:46	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/12/16 18:46	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 18:46	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 18:46	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 18:46	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 18:46	1
Methyl Ethyl Ketone	<5.0	UJ	5.0	2.1	ug/L			05/12/16 18:46	1
methyl isobutyl ketone	<5.0	UJ	5.0	2.2	ug/L			05/12/16 18:46	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 18:46	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 18:46	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 18:46	1
Toluene	**0.29**	**J**	0.50	0.15	ug/L			05/12/16 18:46	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 18:46	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 18:46	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 18:46	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 18:46	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 18:46	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 18:46	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 18:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 18:46	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 18:46	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			05/12/16 18:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Date Collected: 04/29/16 07:07
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*05/12/16 18:46*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*05/12/16 18:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*		*05/12/16 18:46*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 18:46*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.81		0.81	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
Acenaphthylene	<0.81		0.81	0.22	ug/L		05/05/16 08:14	05/13/16 01:18	1
Acetophenone	<4.1		4.1	0.54	ug/L		05/05/16 08:14	05/13/16 01:18	1
Anthracene	<0.81		0.81	0.27	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[a]anthracene	<0.16		0.16	0.046	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[a]pyrene	<0.16		0.16	0.080	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[g,h,i]perylene	<0.81		0.81	0.30	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzo[k]fluoranthene	<0.16		0.16	0.052	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.24	ug/L		05/05/16 08:14	05/13/16 01:18	1
Bis(2-ethylhexyl) phthalate	<8.1		8.1	1.4	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Bromophenyl phenyl ether	<4.1		4.1	0.44	ug/L		05/05/16 08:14	05/13/16 01:18	1
Butyl benzyl phthalate	<1.6		1.6	0.39	ug/L		05/05/16 08:14	05/13/16 01:18	1
Carbazole	<4.1		4.1	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chloroaniline	<8.1	UJ	8.1	1.6	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chloro-3-methylphenol	<8.1		8.1	1.9	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Chlorophenol	<4.1		4.1	0.45	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Chlorophenyl phenyl ether	<4.1		4.1	0.52	ug/L		05/05/16 08:14	05/13/16 01:18	1
Chrysene	<0.41		0.41	0.055	ug/L		05/05/16 08:14	05/13/16 01:18	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		05/05/16 08:14	05/13/16 01:18	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		05/05/16 08:14	05/13/16 01:18	1
3,3'-Dichlorobenzidine	<4.1		4.1	1.4	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dichlorophenol	<8.1		8.1	2.1	ug/L		05/05/16 08:14	05/13/16 01:18	1
Diethyl phthalate	**3.0**		1.6	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dimethylphenol	<8.1	UJ	8.1	1.5	ug/L		05/05/16 08:14	05/13/16 01:18	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
Di-n-butyl phthalate	<4.1		4.1	0.59	ug/L		05/05/16 08:14	05/13/16 01:18	1
4,6-Dinitro-2-methylphenol	<16		16	4.8	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dinitrophenol	<16		16	7.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4-Dinitrotoluene	<0.81		0.81	0.20	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,6-Dinitrotoluene	<0.41		0.41	0.060	ug/L		05/05/16 08:14	05/13/16 01:18	1
Di-n-octyl phthalate	<8.1		8.1	0.85	ug/L		05/05/16 08:14	05/13/16 01:18	1
Fluoranthene	<0.81		0.81	0.37	ug/L		05/05/16 08:14	05/13/16 01:18	1
Fluorene	<0.81		0.81	0.20	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachlorobenzene	<0.41		0.41	0.064	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachlorobutadiene	<4.1		4.1	0.42	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachlorocyclopentadiene	<16		16	5.2	ug/L		05/05/16 08:14	05/13/16 01:18	1
Hexachloroethane	<4.1		4.1	0.49	ug/L		05/05/16 08:14	05/13/16 01:18	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.061	ug/L		05/05/16 08:14	05/13/16 01:18	1
Isophorone	<1.6		1.6	0.30	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Methylnaphthalene	**0.19**	J	0.41	0.053	ug/L		05/05/16 08:14	05/13/16 01:18	1

Client Sample ID: MW-10-GW-04292016

Date Collected: 04/29/16 07:07
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.6		1.6	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		05/05/16 08:14	05/13/16 01:18	1
Naphthalene	<0.81		0.81	0.25	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Nitroaniline	<4.1		4.1	1.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
3-Nitroaniline	<8.1		8.1	1.4	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Nitroaniline	<8.1		8.1	1.3	ug/L		05/05/16 08:14	05/13/16 01:18	1
Nitrobenzene	<0.81		0.81	0.36	ug/L		05/05/16 08:14	05/13/16 01:18	1
2-Nitrophenol	<8.1		8.1	2.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
4-Nitrophenol	<16		16	6.0	ug/L		05/05/16 08:14	05/13/16 01:18	1
N-Nitrosodi-n-propylamine	<0.41		0.41	0.12	ug/L		05/05/16 08:14	05/13/16 01:18	1
N-Nitrosodiphenylamine	**0.72**	**J**	0.81	0.30	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.31	ug/L		05/05/16 08:14	05/13/16 01:18	1
Pentachlorophenol	<16		16	3.2	ug/L		05/05/16 08:14	05/13/16 01:18	1
Phenanthrene	<0.81		0.81	0.24	ug/L		05/05/16 08:14	05/13/16 01:18	1
Phenol	<4.1		4.1	0.54	ug/L		05/05/16 08:14	05/13/16 01:18	1
Pyrene	<0.81		0.81	0.35	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4,5-Trichlorophenol	<8.1		8.1	2.1	ug/L		05/05/16 08:14	05/13/16 01:18	1
2,4,6-Trichlorophenol	<4.1		4.1	0.58	ug/L		05/05/16 08:14	05/13/16 01:18	1
Benzaldehyde	~~<16~~	~~^ *~~ R	~~16~~	~~12~~	~~ug/L~~		05/05/16 08:14	05/13/16 01:18	1
Caprolactam	**2.9**	**J**	8.1	1.2	ug/L		05/05/16 08:14	05/13/16 01:18	1
Atrazine	<4.1		4.1	0.51	ug/L		05/05/16 08:14	05/13/16 01:18	1
1,1'-Biphenyl	<4.1		4.1	0.29	ug/L		05/05/16 08:14	05/13/16 01:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*30 - 123*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
2-Fluorophenol (Surr)	*70*		*30 - 110*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
Nitrobenzene-d5 (Surr)	*82*		*33 - 139*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*05/05/16 08:14*	*05/13/16 01:18*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*05/05/16 08:14*	*05/13/16 01:18*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.041		0.041	0.0055	ug/L		05/02/16 16:20	05/03/16 15:54	1
alpha-BHC	<0.041		0.041	0.0027	ug/L		05/02/16 16:20	05/03/16 15:54	1
alpha-Chlordane	<0.041		0.041	0.0046	ug/L		05/02/16 16:20	05/03/16 15:54	1
beta-BHC	<0.041		0.041	0.011	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDD	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDE	<0.041		0.041	0.0039	ug/L		05/02/16 16:20	05/03/16 15:54	1
4,4'-DDT	<0.041		0.041	0.0033	ug/L		05/02/16 16:20	05/03/16 15:54	1
delta-BHC	<0.041		0.041	0.011	ug/L		05/02/16 16:20	05/03/16 15:54	1
Dieldrin	<0.041		0.041	0.013	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endrin	<0.041		0.041	0.015	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endrin aldehyde	<0.041		0.041	0.0085	ug/L		05/02/16 16:20	05/03/16 15:54	1
Endrin ketone	<0.041		0.041	0.018	ug/L		05/02/16 16:20	05/03/16 15:54	1
gamma-BHC (Lindane)	<0.041		0.041	0.0058	ug/L		05/02/16 16:20	05/03/16 15:54	1
gamma-Chlordane	<0.041		0.041	0.0075	ug/L		05/02/16 16:20	05/03/16 15:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Date Collected: 04/29/16 07:07
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 15:54	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 15:54	1
Methoxychlor	<0.083		0.083	0.024	ug/L		05/02/16 16:20	05/03/16 15:54	1
Toxaphene	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*05/02/16 16:20*	*05/03/16 15:54*	*1*
Tetrachloro-m-xylene	*65*		*30 - 120*	*05/02/16 16:20*	*05/03/16 15:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.069	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1221	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1232	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1242	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1248	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1254	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:21	1
PCB-1260	<0.41		0.41	0.073	ug/L		05/02/16 16:20	05/03/16 17:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 127*	*05/02/16 16:20*	*05/03/16 17:21*	*1*
DCB Decachlorobiphenyl	*67*		*30 - 150*	*05/02/16 16:20*	*05/03/16 17:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:02	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:02	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:02	1
Barium	**0.12**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:02	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:02	1
Calcium	**210**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:02	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:02	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:02	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:02	1
Iron	**20**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:02	1
Lead	**0.0043**	**J**	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:02	1
Magnesium	**94**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:02	1
Manganese	**1.1**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:02	1
Nickel	**0.0077**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:02	1
Potassium	**94**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:02	1
Selenium	< 0.010 ~~**0.0060**~~	~~**J B**~~ UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:02	1
Sodium	**320**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:02	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:02	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:02	1
Zinc	**0.026**		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:02	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-10-GW-04292016

Date Collected: 04/29/16 07:07
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-2

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:07	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:07	1
Barium	**0.12**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:07	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:07	1
Calcium	**210**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:07	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:07	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:07	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:07	1
Iron	**19**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:07	1
Lead	<0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:07	1
Magnesium	**95**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:07	1
Manganese	**1.1**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:07	1
Nickel	**0.0062**	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:07	1
Potassium	**92**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:07	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:07	1
Sodium	**310**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:07	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:07	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:07	1
Zinc	**0.0092**	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.22	mg/L			05/03/16 05:41	1
Sulfate	**420**		100	40	mg/L			05/06/16 09:20	20
Total Organic Carbon - Duplicates	**11**		1.0	0.23	mg/L			05/13/16 22:38	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**49**		5.0	1.6	mg/L			05/03/16 11:45	1
Ammonia	**4.0**	~~B~~	0.20	0.043	mg/L		05/11/16 18:12	05/12/16 19:20	1
Nitrogen, Nitrite	**0.0032**	J	0.020	0.0032	mg/L			04/30/16 12:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3

Date Collected: 04/29/16 08:47
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**33**		5.0	1.7	ug/L			05/12/16 19:12	1
Benzene	**7.0**		0.50	0.15	ug/L			05/12/16 19:12	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 19:12	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 19:12	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 19:12	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 19:12	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 19:12	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 19:12	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 19:12	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 19:12	1
cis-1,2-Dichloroethene	**4.7**		1.0	0.41	ug/L			05/12/16 19:12	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 19:12	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 19:12	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 19:12	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 19:12	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
1,2-Dichlorobenzene	**2.4**		1.0	0.33	ug/L			05/12/16 19:12	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 19:12	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			05/12/16 19:12	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 19:12	1
1,1-Dichloroethane	**0.51**	J	1.0	0.41	ug/L			05/12/16 19:12	1
1,2-Dichloroethane	**1.4**		1.0	0.39	ug/L			05/12/16 19:12	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 19:12	1
Ethylbenzene	**100**		0.50	0.18	ug/L			05/12/16 19:12	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 19:12	1
Isopropylbenzene	**6.7**		1.0	0.39	ug/L			05/12/16 19:12	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 19:12	1
Methylcyclohexane	**1.1**		1.0	0.32	ug/L			05/12/16 19:12	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 19:12	1
Methyl Ethyl Ketone	**14**	J	5.0	2.1	ug/L			05/12/16 19:12	1
methyl isobutyl ketone	**27**	J	5.0	2.2	ug/L			05/12/16 19:12	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 19:12	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 19:12	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 19:12	1
Toluene	**160**		0.50	0.15	ug/L			05/12/16 19:12	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 19:12	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 19:12	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 19:12	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 19:12	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 19:12	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 19:12	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 19:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 19:12	1
Vinyl chloride	**4.1**		0.50	0.20	ug/L			05/12/16 19:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3

Date Collected: 04/29/16 08:47
Matrix: Water
Date Received: 04/30/16 07:34

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		71 - 120		05/12/16 19:12	1
Dibromofluoromethane	96		70 - 120		05/12/16 19:12	1
1,2-Dichloroethane-d4 (Surr)	94		71 - 127		05/12/16 19:12	1
Toluene-d8 (Surr)	105		75 - 120		05/12/16 19:12	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**380**	D	5.0	1.1	ug/L			05/12/16 19:39	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		71 - 120		05/12/16 19:39	5
Dibromofluoromethane	97		70 - 120		05/12/16 19:39	5
1,2-Dichloroethane-d4 (Surr)	94		71 - 127		05/12/16 19:39	5
Toluene-d8 (Surr)	101		75 - 120		05/12/16 19:39	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.6		8.6	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acenaphthylene	<8.6		8.6	2.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
Acetophenone	<43		43	5.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Anthracene	<8.6		8.6	2.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[a]anthracene	<1.7		1.7	0.49	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[a]pyrene	<1.7		1.7	0.85	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[b]fluoranthene	<1.7		1.7	0.70	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[g,h,i]perylene	<8.6		8.6	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzo[k]fluoranthene	<1.7		1.7	0.55	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 09:27	10
Bis(2-ethylhexyl) phthalate	**85**	J D	86	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Bromophenyl phenyl ether	<43		43	4.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Butyl benzyl phthalate	<17		17	4.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
Carbazole	<43		43	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chloroaniline	<86	UJ	86	17	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chloro-3-methylphenol	<86		86	20	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Chlorophenol	<43		43	4.8	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Chlorophenyl phenyl ether	<43		43	5.5	ug/L		05/05/16 08:14	05/13/16 09:27	10
Chrysene	<4.3		4.3	0.59	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dibenz(a,h)anthracene	<2.6		2.6	0.44	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dibenzofuran	<17		17	2.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
3,3'-Dichlorobenzidine	<43		43	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dichlorophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
Diethyl phthalate	<17		17	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dimethylphenol	**110**	JD	86	16	ug/L		05/05/16 08:14	05/13/16 09:27	10
Dimethyl phthalate	<17		17	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
Di-n-butyl phthalate	<43		43	6.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
4,6-Dinitro-2-methylphenol	<170		170	51	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dinitrophenol	<170		170	74	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4-Dinitrotoluene	<8.6		8.6	2.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,6-Dinitrotoluene	<4.3		4.3	0.64	ug/L		05/05/16 08:14	05/13/16 09:27	10
Di-n-octyl phthalate	<86		86	9.1	ug/L		05/05/16 08:14	05/13/16 09:27	10

Client Sample ID: MW-6-GW-04292016

Date Collected: 04/29/16 08:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-3

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.6		8.6	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Fluorene	<8.6		8.6	2.1	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorobenzene	<4.3		4.3	0.68	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorobutadiene	<43		43	4.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachlorocyclopentadiene	<170		170	55	ug/L		05/05/16 08:14	05/13/16 09:27	10
Hexachloroethane	<43		43	5.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.64	ug/L		05/05/16 08:14	05/13/16 09:27	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Methylnaphthalene	<4.3		4.3	0.56	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Methylphenol	**20**	D	17	2.6	ug/L		05/05/16 08:14	05/13/16 09:27	10
3 & 4 Methylphenol	**96**	D	17	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
Naphthalene	**16**	D	8.6	2.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Nitroaniline	<43		43	11	ug/L		05/05/16 08:14	05/13/16 09:27	10
3-Nitroaniline	<86		86	15	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Nitroaniline	<86		86	14	ug/L		05/05/16 08:14	05/13/16 09:27	10
Nitrobenzene	<8.6		8.6	3.9	ug/L		05/05/16 08:14	05/13/16 09:27	10
2-Nitrophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
4-Nitrophenol	<170		170	64	ug/L		05/05/16 08:14	05/13/16 09:27	10
N-Nitrosodi-n-propylamine	<4.3		4.3	1.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
N-Nitrosodiphenylamine	<8.6		8.6	3.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,2'-oxybis[1-chloropropane]	<17		17	3.3	ug/L		05/05/16 08:14	05/13/16 09:27	10
Pentachlorophenol	<170		170	34	ug/L		05/05/16 08:14	05/13/16 09:27	10
Phenanthrene	<8.6		8.6	2.6	ug/L		05/05/16 08:14	05/13/16 09:27	10
Phenol	**40**	J D	43	5.8	ug/L		05/05/16 08:14	05/13/16 09:27	10
Pyrene	<8.6		8.6	3.7	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4,5-Trichlorophenol	<86		86	22	ug/L		05/05/16 08:14	05/13/16 09:27	10
2,4,6-Trichlorophenol	<43		43	6.2	ug/L		05/05/16 08:14	05/13/16 09:27	10
Benzaldehyde	~~<170~~ *	R	~~170~~	~~130~~	~~ug/L~~		05/05/16 08:14	05/13/16 09:27	10
Caprolactam	<86		86	13	ug/L		05/05/16 08:14	05/13/16 09:27	10
Atrazine	<43		43	5.4	ug/L		05/05/16 08:14	05/13/16 09:27	10
1,1'-Biphenyl	<43		43	3.1	ug/L		05/05/16 08:14	05/13/16 09:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*91*		*30 - 123*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
Nitrobenzene-d5 (Surr)	*89*		*33 - 139*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
Phenol-d5 (Surr)	*60*		*20 - 100*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
Terphenyl-d14 (Surr)	*106*		*42 - 150*	*05/05/16 08:14*	*05/13/16 09:27*	*10*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*	*05/05/16 08:14*	*05/13/16 09:27*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043		0.043	0.0058	ug/L		05/02/16 16:20	05/03/16 16:13	1
alpha-BHC	<0.043		0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 16:13	1
alpha-Chlordane	<0.043		0.043	0.0048	ug/L		05/02/16 16:20	05/03/16 16:13	1
beta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDD	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDE	<0.043		0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 16:13	1
4,4'-DDT	<0.043		0.043	0.0035	ug/L		05/02/16 16:20	05/03/16 16:13	1
delta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:13	1

Client Sample ID: MW-6-GW-04292016

Date Collected: 04/29/16 08:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-3

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endosulfan I	<0.043		0.043	0.0045	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endrin aldehyde	<0.043		0.043	0.0089	ug/L		05/02/16 16:20	05/03/16 16:13	1
Endrin ketone	<0.043		0.043	0.018	ug/L		05/02/16 16:20	05/03/16 16:13	1
gamma-BHC (Lindane)	<0.043		0.043	0.0061	ug/L		05/02/16 16:20	05/03/16 16:13	1
gamma-Chlordane	<0.043		0.043	0.0078	ug/L		05/02/16 16:20	05/03/16 16:13	1
Heptachlor	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	1
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:13	1
Methoxychlor	<0.087		0.087	0.025	ug/L		05/02/16 16:20	05/03/16 16:13	1
Toxaphene	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*40*		*30 - 143*	*05/02/16 16:20*	*05/03/16 16:13*	*1*
Tetrachloro-m-xylene	*110*		*30 - 120*	*05/02/16 16:20*	*05/03/16 16:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1232	~~6.5~~		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1232	**4.9**		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1260	<0.43		0.43	0.076	ug/L		05/02/16 16:20	05/03/16 17:36	1
PCB-1260	<0.43		0.43	0.076	ug/L		05/02/16 16:20	05/03/16 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*57*		*30 - 127*	*05/02/16 16:20*	*05/03/16 17:36*	*1*
Tetrachloro-m-xylene	*30*		*30 - 127*	*05/02/16 16:20*	*05/03/16 17:36*	*1*
DCB Decachlorobiphenyl	*22*	*X*	*30 - 150*	*05/02/16 16:20*	*05/03/16 17:36*	*1*
DCB Decachlorobiphenyl	*28*	*X*	*30 - 150*	*05/02/16 16:20*	*05/03/16 17:36*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.47**		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:12	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:12	1
Arsenic	**0.024**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:12	1
Barium	**0.29**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:12	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:12	1
Cadmium	**0.0022**		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:12	1
Calcium	**30**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Date Collected: 04/29/16 08:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-3

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.13		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:12	1
Cobalt	0.032		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:12	1
Copper	0.012		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:12	1
Iron	2.0	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:12	1
Lead	0.11		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:12	1
Magnesium	28		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:12	1
Manganese	0.0099	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:12	1
Nickel	0.13		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:12	1
Potassium	570		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:12	1
Selenium	< 0.010 ~~0.0081~~	~~J B~~ UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:12	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:12	1
Sodium	3100		100	43	mg/L		05/02/16 09:28	05/05/16 15:42	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:12	1
Vanadium	0.057		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:12	1
Zinc	0.17		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:12	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.38		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:18	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:18	1
Arsenic	0.024		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:18	1
Barium	0.31		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:18	1
Cadmium	0.0016	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:18	1
Calcium	27	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:18	1
Chromium	0.14		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:18	1
Cobalt	0.036		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:18	1
Copper	0.0090	J	0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:18	1
Iron	2.1		0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:18	1
Lead	0.076	J	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:18	1
Magnesium	29		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:18	1
Manganese	0.0087	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:18	1
Nickel	0.14		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:18	1
Potassium	610		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:18	1
Selenium	< 0.010 ~~0.0055~~	~~J B~~ UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:18	1
Sodium	3300		100	43	mg/L		05/02/16 09:28	05/05/16 15:46	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:18	1
Vanadium	0.054		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:18	1
Zinc	0.12	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-6-GW-04292016

Lab Sample ID: 500-110948-3

Date Collected: 04/29/16 08:47
Date Received: 04/30/16 07:34

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.9**	J	1.0	0.22	mg/L			05/03/16 05:44	1
Sulfate	**21**		10	4.0	mg/L			05/02/16 09:05	2
Total Organic Carbon - Duplicates	**360**		20	4.6	mg/L			05/13/16 22:58	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**17**		5.0	1.6	mg/L			05/03/16 11:47	1
Ammonia	**530**	~~B~~	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:12	200
Nitrogen, Nitrite	**0.014**	J	0.020	0.0032	mg/L			04/30/16 12:21	1
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:36	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Lab Sample ID: 500-110948-4

Date Collected: 04/29/16 10:47
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**54**		5.0	1.7	ug/L			05/12/16 20:06	1
Benzene	**10**		0.50	0.15	ug/L			05/12/16 20:06	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 20:06	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 20:06	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 20:06	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 20:06	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 20:06	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 20:06	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 20:06	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 20:06	1
cis-1,2-Dichloroethene	**8.5**		1.0	0.41	ug/L			05/12/16 20:06	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 20:06	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 20:06	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 20:06	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 20:06	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,2-Dichlorobenzene	**6.8**		1.0	0.33	ug/L			05/12/16 20:06	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 20:06	1
1,4-Dichlorobenzene	**17**		1.0	0.36	ug/L			05/12/16 20:06	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 20:06	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 20:06	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 20:06	1
Ethylbenzene	**150**		0.50	0.18	ug/L			05/12/16 20:06	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 20:06	1
Isopropylbenzene	**9.6**		1.0	0.39	ug/L			05/12/16 20:06	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 20:06	1
Methylcyclohexane	**1.3**		1.0	0.32	ug/L			05/12/16 20:06	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 20:06	1
Methyl Ethyl Ketone	**16**	J	5.0	2.1	ug/L			05/12/16 20:06	1
methyl isobutyl ketone	**63**	J	5.0	2.2	ug/L			05/12/16 20:06	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 20:06	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 20:06	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 20:06	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 20:06	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 20:06	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 20:06	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 20:06	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 20:06	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 20:06	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 20:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 20:06	1
Vinyl chloride	**13**		0.50	0.20	ug/L			05/12/16 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*05/12/16 20:06*	*1*

Client Sample ID: MW-7-GW-04292016

Date Collected: 04/29/16 10:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	93		70 - 120		05/12/16 20:06	1
1,2-Dichloroethane-d4 (Surr)	92		71 - 127		05/12/16 20:06	1
Toluene-d8 (Surr)	102		75 - 120		05/12/16 20:06	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**410**	D	2.5	0.76	ug/L			05/12/16 20:32	5
Xylenes, Total	**760**	D	5.0	1.1	ug/L			05/12/16 20:32	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		71 - 120		05/12/16 20:32	5
Dibromofluoromethane	95		70 - 120		05/12/16 20:32	5
1,2-Dichloroethane-d4 (Surr)	95		71 - 127		05/12/16 20:32	5
Toluene-d8 (Surr)	102		75 - 120		05/12/16 20:32	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.4		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Acenaphthylene	<8.4		8.4	2.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Acetophenone	<42		42	5.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Anthracene	**2.8**	J D	8.4	2.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[a]anthracene	<1.7		1.7	0.48	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[a]pyrene	<1.7		1.7	0.83	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[b]fluoranthene	<1.7		1.7	0.68	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[g,h,i]perylene	<8.4		8.4	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzo[k]fluoranthene	<1.7		1.7	0.54	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Bis(2-ethylhexyl) phthalate	**290**	D	84	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Bromophenyl phenyl ether	<42		42	4.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Butyl benzyl phthalate	<17		17	4.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Carbazole	**4.8**	J D	42	3.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chloroaniline	<84	UJ	84	17	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chloro-3-methylphenol	<84		84	19	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Chlorophenol	<42		42	4.7	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Chlorophenyl phenyl ether	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Chrysene	<4.2		4.2	0.57	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dibenz(a,h)anthracene	<2.5		2.5	0.43	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dibenzofuran	<17		17	2.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
3,3'-Dichlorobenzidine	<42		42	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 09:54	10
Diethyl phthalate	<17		17	3.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dimethylphenol	**470**	JD	84	15	ug/L		05/05/16 08:14	05/13/16 09:54	10
Dimethyl phthalate	<17		17	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
Di-n-butyl phthalate	<42		42	6.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
4,6-Dinitro-2-methylphenol	<170		170	50	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dinitrophenol	<170		170	72	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4-Dinitrotoluene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,6-Dinitrotoluene	<4.2		4.2	0.62	ug/L		05/05/16 08:14	05/13/16 09:54	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Date Collected: 04/29/16 10:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<84		84	8.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Fluoranthene	**8.8**	D	8.4	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Fluorene	**3.2**	J D	8.4	2.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorobenzene	<4.2		4.2	0.67	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorobutadiene	<42		42	4.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachlorocyclopentadiene	<170		170	54	ug/L		05/05/16 08:14	05/13/16 09:54	10
Hexachloroethane	<42		42	5.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.63	ug/L		05/05/16 08:14	05/13/16 09:54	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Methylnaphthalene	**9.4**	D	4.2	0.55	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Methylphenol	**78**	D	17	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
3 & 4 Methylphenol	**280**	D	17	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
Naphthalene	**48**	D	8.4	2.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Nitroaniline	<42		42	11	ug/L		05/05/16 08:14	05/13/16 09:54	10
3-Nitroaniline	<84		84	15	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Nitroaniline	<84		84	14	ug/L		05/05/16 08:14	05/13/16 09:54	10
Nitrobenzene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 09:54	10
2-Nitrophenol	<84		84	21	ug/L		05/05/16 08:14	05/13/16 09:54	10
4-Nitrophenol	<170		170	63	ug/L		05/05/16 08:14	05/13/16 09:54	10
N-Nitrosodi-n-propylamine	<4.2		4.2	1.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
N-Nitrosodiphenylamine	<8.4		8.4	3.1	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,2'-oxybis[1-chloropropane]	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 09:54	10
Pentachlorophenol	<170		170	33	ug/L		05/05/16 08:14	05/13/16 09:54	10
Phenanthrene	**14**	D	8.4	2.5	ug/L		05/05/16 08:14	05/13/16 09:54	10
Phenol	<42		42	5.7	ug/L		05/05/16 08:14	05/13/16 09:54	10
Pyrene	**8.0**	J D	8.4	3.6	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4,5-Trichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 09:54	10
2,4,6-Trichlorophenol	<42		42	6.0	ug/L		05/05/16 08:14	05/13/16 09:54	10
Benzaldehyde	~~<170~~ *	R	~~170~~	~~130~~	~~ug/L~~		05/05/16 08:14	05/13/16 09:54	10
Caprolactam	<84		84	13	ug/L		05/05/16 08:14	05/13/16 09:54	10
Atrazine	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 09:54	10
1,1'-Biphenyl	<42		42	3.1	ug/L		05/05/16 08:14	05/13/16 09:54	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*30 - 123*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
2-Fluorophenol (Surr)	*64*		*30 - 110*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
Phenol-d5 (Surr)	*63*		*20 - 100*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*05/05/16 08:14*	*05/13/16 09:54*	*10*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*	*05/05/16 08:14*	*05/13/16 09:54*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	~~<0.041~~	R	~~0.041~~	~~0.0055~~	ug/L		05/02/16 16:20	05/03/16 16:33	1
alpha-BHC	~~<0.041~~		~~0.041~~	~~0.0027~~	ug/L		05/02/16 16:20	05/03/16 16:33	1
alpha-Chlordane	~~<0.041~~		~~0.041~~	~~0.0045~~	ug/L		05/02/16 16:20	05/03/16 16:33	1
beta-BHC	~~<0.041~~		~~0.041~~	~~0.010~~	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDD	~~<0.041~~		~~0.041~~	~~0.014~~	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDE	~~<0.041~~		~~0.041~~	~~0.0039~~	ug/L		05/02/16 16:20	05/03/16 16:33	1
4,4'-DDT	~~<0.041~~		~~0.041~~	~~0.0033~~	ug/L		05/02/16 16:20	05/03/16 16:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Date Collected: 04/29/16 10:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.041	R	0.041	0.011	ug/L		05/02/16 16:20	05/03/16 16:33	1
Dieldrin	<0.041		0.041	0.013	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan I	<0.041		0.041	0.0042	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan II	<0.041		0.041	0.0029	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endosulfan sulfate	<0.041		0.041	0.012	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin	<0.041		0.041	0.015	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin aldehyde	<0.041		0.041	0.0084	ug/L		05/02/16 16:20	05/03/16 16:33	1
Endrin ketone	<0.041		0.041	0.017	ug/L		05/02/16 16:20	05/03/16 16:33	1
gamma-BHC (Lindane)	<0.041		0.041	0.0058	ug/L		05/02/16 16:20	05/03/16 16:33	1
gamma-Chlordane	<0.041		0.041	0.0074	ug/L		05/02/16 16:20	05/03/16 16:33	1
Heptachlor	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 16:33	1
Heptachlor epoxide	<0.041		0.041	0.014	ug/L		05/02/16 16:20	05/03/16 16:33	1
Methoxychlor	<0.082		0.082	0.024	ug/L		05/02/16 16:20	05/03/16 16:33	1
Toxaphene	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*9*	*X*	*30 - 143*	*05/02/16 16:20*	*05/03/16 16:33*	*1*
Tetrachloro-m-xylene	*93*		*30 - 120*	*05/02/16 16:20*	*05/03/16 16:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41		0.41	0.069	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1016	<0.41	UJ	0.41	0.069	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1221	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1221	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1232	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1232	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1242	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1242	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1248	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1248	<0.41		0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1254	**2.1**	J	0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1254	**1.7**	J	0.41	0.21	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1260	<0.41	UJ	0.41	0.072	ug/L		05/02/16 16:20	05/03/16 17:52	1
PCB-1260	<0.41	UJ	0.41	0.072	ug/L		05/02/16 16:20	05/03/16 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*23*	*X*	*30 - 127*	*05/02/16 16:20*	*05/03/16 17:52*	*1*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*05/02/16 16:20*	*05/03/16 17:52*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*05/02/16 16:20*	*05/03/16 17:52*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*05/02/16 16:20*	*05/03/16 17:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.41	*	0.41	0.069	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1016	<0.41		0.41	0.069	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1221	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1221	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1232	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1232	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Date Collected: 04/29/16 10:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-4

Matrix: Water

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1242	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1242	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1248	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1248	<0.41		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1254	**1.1**		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1254	**1.3**		0.41	0.21	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1260	<0.41	*	0.41	0.073	ug/L		05/04/16 16:40	05/12/16 11:03	1
PCB-1260	<0.41		0.41	0.073	ug/L		05/04/16 16:40	05/12/16 11:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*6*	*X*	*30 - 127*	*05/04/16 16:40*	*05/12/16 11:03*	*1*
Tetrachloro-m-xylene	*6*	*X*	*30 - 127*	*05/04/16 16:40*	*05/12/16 11:03*	*1*
DCB Decachlorobiphenyl	*2*	*X*	*30 - 150*	*05/04/16 16:40*	*05/12/16 11:03*	*1*
DCB Decachlorobiphenyl	*2*	*X*	*30 - 150*	*05/04/16 16:40*	*05/12/16 11:03*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.9**		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:23	1
Antimony	**0.015**	**J**	0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:23	1
Arsenic	**0.048**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:23	1
Barium	**0.54**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:23	1
Beryllium	**0.0011**	**J**	0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:23	1
Cadmium	**0.0080**		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:23	1
Calcium	**11**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:23	1
Chromium	**0.48**		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:23	1
Cobalt	**0.044**		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:23	1
Copper	**0.082**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:23	1
Iron	**4.7**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:23	1
Lead	**0.68**		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:23	1
Magnesium	**22**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:23	1
Manganese	**0.017**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:23	1
Nickel	**0.16**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:23	1
Potassium	**670**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:23	1
Selenium	< 0.010 ~~**0.0091**~~	~~**J B**~~ UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:23	1
Silver	**0.0026**	**J**	0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:23	1
Sodium	**3600**		100	43	mg/L		05/02/16 09:28	05/05/16 15:51	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:23	1
Vanadium	**0.078**		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:23	1
Zinc	**1.1**		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:23	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.4**		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:28	1
Antimony	**0.011**	**J**	0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:28	1
Arsenic	**0.040**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:28	1
Barium	**0.47**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:28	1
Beryllium	**0.00085**	**J**	0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:28	1
Cadmium	**0.0057**		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:28	1
Calcium	**10**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:28	1
Chromium	**0.43**		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-7-GW-04292016

Date Collected: 04/29/16 10:47
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.041		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:28	1
Copper	0.052		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:28	1
Iron	4.1	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:28	1
Lead	0.39	J	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:28	1
Magnesium	21		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:28	1
Manganese	0.014		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:28	1
Nickel	0.15		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:28	1
Potassium	620		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:28	1
Selenium	< 0.010 ~~0.0091~~ ~~J B~~	UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:28	1
Silver	0.0016	J	0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:28	1
Sodium	3400		100	43	mg/L		05/02/16 09:28	05/05/16 15:55	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:28	1
Vanadium	0.068		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:28	1
Zinc	0.67	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0010		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:35	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00063		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	8.8		1.0	0.22	mg/L			05/03/16 05:47	1
Sulfate	240		100	40	mg/L			05/05/16 07:46	20
Total Organic Carbon - Duplicates	480		20	4.6	mg/L			05/13/16 23:18	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	17		5.0	1.6	mg/L			05/03/16 11:48	1
Ammonia	670	~~B~~	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:14	200
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:22	1
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:38	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.8**		5.0	1.7	ug/L			05/12/16 21:00	1
Benzene	**1.6**		0.50	0.15	ug/L			05/12/16 21:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 21:00	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 21:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 21:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 21:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 21:00	1
Chlorobenzene	**15**		1.0	0.39	ug/L			05/12/16 21:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 21:00	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 21:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 21:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 21:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 21:00	1
Cyclohexane	**1.5**		1.0	0.49	ug/L			05/12/16 21:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 21:00	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 21:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 21:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 21:00	1
1,4-Dichlorobenzene	**1.7**		1.0	0.36	ug/L			05/12/16 21:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 21:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 21:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 21:00	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			05/12/16 21:00	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 21:00	1
Isopropylbenzene	**3.5**		1.0	0.39	ug/L			05/12/16 21:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 21:00	1
Methylcyclohexane	**1.3**		1.0	0.32	ug/L			05/12/16 21:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 21:00	1
Methyl Ethyl Ketone	<5.0	UJ	5.0	2.1	ug/L			05/12/16 21:00	1
methyl isobutyl ketone	<5.0	UJ	5.0	2.2	ug/L			05/12/16 21:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 21:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 21:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 21:00	1
Toluene	**0.37**	**J**	0.50	0.15	ug/L			05/12/16 21:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 21:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 21:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 21:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 21:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 21:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 21:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 21:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 21:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			05/12/16 21:00	1
Xylenes, Total	**0.93**	**J**	1.0	0.22	ug/L			05/12/16 21:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Date Collected: 04/29/16 12:27
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*05/12/16 21:00*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*05/12/16 21:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*		*05/12/16 21:00*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 21:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.97**		0.85	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
Acenaphthylene	<0.85		0.85	0.23	ug/L		05/05/16 08:14	05/14/16 02:12	1
Acetophenone	<4.2		4.2	0.56	ug/L		05/05/16 08:14	05/14/16 02:12	1
Anthracene	<0.85		0.85	0.28	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[a]anthracene	<0.17		0.17	0.048	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[a]pyrene	<0.17		0.17	0.084	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[b]fluoranthene	<0.17		0.17	0.068	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[g,h,i]perylene	<0.85		0.85	0.32	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzo[k]fluoranthene	<0.17		0.17	0.054	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-chloroethyl)ether	<1.7		1.7	0.25	ug/L		05/05/16 08:14	05/14/16 02:12	1
Bis(2-ethylhexyl) phthalate	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Bromophenyl phenyl ether	<4.2		4.2	0.46	ug/L		05/05/16 08:14	05/14/16 02:12	1
Butyl benzyl phthalate	<1.7		1.7	0.41	ug/L		05/05/16 08:14	05/14/16 02:12	1
Carbazole	<4.2		4.2	0.30	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chloroaniline	<8.5	UJ	8.5	1.7	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chloro-3-methylphenol	<8.5		8.5	2.0	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Chloronaphthalene	<1.7		1.7	0.20	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Chlorophenol	<4.2		4.2	0.47	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Chlorophenyl phenyl ether	<4.2		4.2	0.54	ug/L		05/05/16 08:14	05/14/16 02:12	1
Chrysene	<0.42		0.42	0.058	ug/L		05/05/16 08:14	05/14/16 02:12	1
Dibenz(a,h)anthracene	<0.25		0.25	0.043	ug/L		05/05/16 08:14	05/14/16 02:12	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		05/05/16 08:14	05/14/16 02:12	1
3,3'-Dichlorobenzidine	<4.2		4.2	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/14/16 02:12	1
Diethyl phthalate	<1.7		1.7	0.31	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dimethylphenol	<8.5	UJ	8.5	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
Dimethyl phthalate	<1.7		1.7	0.27	ug/L		05/05/16 08:14	05/14/16 02:12	1
Di-n-butyl phthalate	<4.2		4.2	0.62	ug/L		05/05/16 08:14	05/14/16 02:12	1
4,6-Dinitro-2-methylphenol	<17		17	5.0	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dinitrophenol	<17		17	7.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4-Dinitrotoluene	<0.85		0.85	0.21	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,6-Dinitrotoluene	<0.42		0.42	0.063	ug/L		05/05/16 08:14	05/14/16 02:12	1
Di-n-octyl phthalate	<8.5		8.5	0.89	ug/L		05/05/16 08:14	05/14/16 02:12	1
Fluoranthene	<0.85		0.85	0.39	ug/L		05/05/16 08:14	05/14/16 02:12	1
Fluorene	**0.46**	**J**	0.85	0.21	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachlorobenzene	<0.42		0.42	0.067	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachlorobutadiene	<4.2		4.2	0.44	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachlorocyclopentadiene	<17		17	5.4	ug/L		05/05/16 08:14	05/14/16 02:12	1
Hexachloroethane	<4.2		4.2	0.51	ug/L		05/05/16 08:14	05/14/16 02:12	1
Indeno[1,2,3-cd]pyrene	<0.17		0.17	0.063	ug/L		05/05/16 08:14	05/14/16 02:12	1
Isophorone	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Methylnaphthalene	**2.6**		0.42	0.055	ug/L		05/05/16 08:14	05/14/16 02:12	1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.7		1.7	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
3 & 4 Methylphenol	**4.5**		1.7	0.38	ug/L		05/05/16 08:14	05/14/16 02:12	1
Naphthalene	**0.36**	**J**	0.85	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Nitroaniline	<4.2		4.2	1.1	ug/L		05/05/16 08:14	05/14/16 02:12	1
3-Nitroaniline	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Nitroaniline	<8.5		8.5	1.4	ug/L		05/05/16 08:14	05/14/16 02:12	1
Nitrobenzene	<0.85		0.85	0.38	ug/L		05/05/16 08:14	05/14/16 02:12	1
2-Nitrophenol	<8.5		8.5	2.1	ug/L		05/05/16 08:14	05/14/16 02:12	1
4-Nitrophenol	<17		17	6.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
N-Nitrosodi-n-propylamine	<0.42		0.42	0.13	ug/L		05/05/16 08:14	05/14/16 02:12	1
N-Nitrosodiphenylamine	<0.85		0.85	0.31	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/14/16 02:12	1
Pentachlorophenol	<17		17	3.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
Phenanthrene	**0.48**	**J**	0.85	0.26	ug/L		05/05/16 08:14	05/14/16 02:12	1
Phenol	<4.2		4.2	0.57	ug/L		05/05/16 08:14	05/14/16 02:12	1
Pyrene	<0.85		0.85	0.36	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4,5-Trichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/14/16 02:12	1
2,4,6-Trichlorophenol	<4.2		4.2	0.61	ug/L		05/05/16 08:14	05/14/16 02:12	1
Benzaldehyde	<17	UJ	17	13	ug/L		05/05/16 08:14	05/14/16 02:12	1
Caprolactam	<8.5		8.5	1.3	ug/L		05/05/16 08:14	05/14/16 02:12	1
Atrazine	<4.2		4.2	0.53	ug/L		05/05/16 08:14	05/14/16 02:12	1
1,1'-Biphenyl	<4.2		4.2	0.31	ug/L		05/05/16 08:14	05/14/16 02:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*30 - 123*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
2-Fluorophenol (Surr)	*55*		*30 - 110*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
Nitrobenzene-d5 (Surr)	*58*		*33 - 139*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
Phenol-d5 (Surr)	*45*		*20 - 100*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*05/05/16 08:14*	*05/14/16 02:12*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*05/05/16 08:14*	*05/14/16 02:12*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043		0.043	0.0057	ug/L		05/02/16 16:20	05/03/16 16:52	1
alpha-BHC	<0.043		0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 16:52	1
alpha-Chlordane	<0.043		0.043	0.0047	ug/L		05/02/16 16:20	05/03/16 16:52	1
beta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:52	1
4,4'-DDD	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:52	1
4,4'-DDE	<0.043		0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 16:52	1
4,4'-DDT	<0.043		0.043	0.0034	ug/L		05/02/16 16:20	05/03/16 16:52	1
delta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 16:52	1
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan I	<0.043		0.043	0.0044	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endrin aldehyde	<0.043		0.043	0.0088	ug/L		05/02/16 16:20	05/03/16 16:52	1
Endrin ketone	<0.043		0.043	0.018	ug/L		05/02/16 16:20	05/03/16 16:52	1
gamma-BHC (Lindane)	<0.043		0.043	0.0060	ug/L		05/02/16 16:20	05/03/16 16:52	1
gamma-Chlordane	<0.043		0.043	0.0078	ug/L		05/02/16 16:20	05/03/16 16:52	1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:52	1
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 16:52	1
Methoxychlor	<0.086		0.086	0.025	ug/L		05/02/16 16:20	05/03/16 16:52	1
Toxaphene	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*30 - 143*	*05/02/16 16:20*	*05/03/16 16:52*	*1*
Tetrachloro-m-xylene	*69*		*30 - 120*	*05/02/16 16:20*	*05/03/16 16:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.43		0.43	0.072	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1232	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:08	1
PCB-1260	<0.43		0.43	0.075	ug/L		05/02/16 16:20	05/03/16 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*65*		*30 - 127*	*05/02/16 16:20*	*05/03/16 18:08*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 150*	*05/02/16 16:20*	*05/03/16 18:08*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:34	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:34	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:34	1
Barium	**0.79**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:34	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:34	1
Calcium	**130**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:34	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:34	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:34	1
Iron	**27**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:34	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:34	1
Magnesium	**88**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:34	1
Manganese	**0.19**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:34	1
Nickel	**0.0041**	**J**	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:34	1
Potassium	**79**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:34	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:34	1
Sodium	**200**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:34	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:34	1
Zinc	<0.020		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:34	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-9-GW-04292016

Lab Sample ID: 500-110948-5

Date Collected: 04/29/16 12:27
Matrix: Water
Date Received: 04/30/16 07:34

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:46	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:46	1
Barium	**0.83**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:46	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:46	1
Cadmium	**0.0016**	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:46	1
Calcium	**130**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:46	1
Chromium	**0.0033**	J	0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:46	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:46	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:46	1
Iron	**28**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:46	1
Lead	<0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:46	1
Magnesium	**91**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:46	1
Manganese	**0.19**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:46	1
Nickel	**0.0044**	J	0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:46	1
Potassium	**81**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:46	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:46	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:46	1
Sodium	**210**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:46	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:46	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:46	1
Zinc	<0.020	UJ	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.1**		1.0	0.22	mg/L			05/03/16 05:50	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:21	1
Total Organic Carbon - Duplicates	**25**		1.0	0.23	mg/L			05/13/16 23:39	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**52**		5.0	1.6	mg/L			05/03/16 11:50	1
Ammonia	**79**	~~B~~	5.0	1.1	mg/L		05/11/16 18:12	05/12/16 19:28	25
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:22	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02
Matrix: Water
Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.2**		5.0	1.7	ug/L			05/12/16 21:26	1
Benzene	<0.50		0.50	0.15	ug/L			05/12/16 21:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 21:26	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 21:26	1
Bromomethane	<2.0	~~F2~~ UJ	2.0	0.80	ug/L			05/12/16 21:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 21:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 21:26	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
Chloroethane	<1.0	~~F2~~ UJ	1.0	0.51	ug/L			05/12/16 21:26	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 21:26	1
Chloromethane	<1.0	~~F2~~ UJ	1.0	0.32	ug/L			05/12/16 21:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			05/12/16 21:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 21:26	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 21:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 21:26	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 21:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			05/12/16 21:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 21:26	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			05/12/16 21:26	1
Dichlorodifluoromethane	<2.0	~~F2~~ UJ	2.0	0.67	ug/L			05/12/16 21:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 21:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 21:26	1
Ethylbenzene	**0.33**	**J**	0.50	0.18	ug/L			05/12/16 21:26	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 21:26	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 21:26	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			05/12/16 21:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 21:26	1
Methyl Ethyl Ketone	<5.0	~~F2~~ UJ	5.0	2.1	ug/L			05/12/16 21:26	1
methyl isobutyl ketone	<5.0	~~F2~~ UJ	5.0	2.2	ug/L			05/12/16 21:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 21:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 21:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 21:26	1
Toluene	<0.50		0.50	0.15	ug/L			05/12/16 21:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 21:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 21:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 21:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 21:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 21:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 21:26	1
Trichlorofluoromethane	<1.0	~~F2~~ UJ	1.0	0.43	ug/L			05/12/16 21:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 21:26	1
Vinyl chloride	<0.50	~~F2~~ UJ	0.50	0.20	ug/L			05/12/16 21:26	1
Xylenes, Total	**1.2**		1.0	0.22	ug/L			05/12/16 21:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Date Collected: 04/29/16 14:02
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*05/12/16 21:26*	*1*
Dibromofluoromethane	*98*		*70 - 120*		*05/12/16 21:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*		*05/12/16 21:26*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/12/16 21:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.85		0.85	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
Acenaphthylene	<0.85		0.85	0.23	ug/L		05/05/16 08:14	05/13/16 03:06	1
Acetophenone	<4.3		4.3	0.56	ug/L		05/05/16 08:14	05/13/16 03:06	1
Anthracene	<0.85		0.85	0.28	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[a]anthracene	<0.17		0.17	0.048	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[a]pyrene	<0.17		0.17	0.084	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[b]fluoranthene	<0.17		0.17	0.069	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[g,h,i]perylene	<0.85		0.85	0.32	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzo[k]fluoranthene	<0.17		0.17	0.054	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-chloroethoxy)methane	<1.7		1.7	0.24	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-chloroethyl)ether	<1.7		1.7	0.25	ug/L		05/05/16 08:14	05/13/16 03:06	1
Bis(2-ethylhexyl) phthalate	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Bromophenyl phenyl ether	<4.3		4.3	0.46	ug/L		05/05/16 08:14	05/13/16 03:06	1
Butyl benzyl phthalate	<1.7		1.7	0.41	ug/L		05/05/16 08:14	05/13/16 03:06	1
Carbazole	<4.3		4.3	0.30	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chloroaniline	<8.5	* UJ	8.5	1.7	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chloro-3-methylphenol	<8.5		8.5	2.0	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Chloronaphthalene	<1.7		1.7	0.20	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Chlorophenol	<4.3		4.3	0.48	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Chlorophenyl phenyl ether	<4.3		4.3	0.54	ug/L		05/05/16 08:14	05/13/16 03:06	1
Chrysene	<0.43		0.43	0.058	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dibenz(a,h)anthracene	<0.26		0.26	0.043	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dibenzofuran	<1.7		1.7	0.22	ug/L		05/05/16 08:14	05/13/16 03:06	1
3,3'-Dichlorobenzidine	<4.3		4.3	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/13/16 03:06	1
Diethyl phthalate	<1.7		1.7	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dimethylphenol	<8.5	* UJ	8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
Dimethyl phthalate	<1.7		1.7	0.27	ug/L		05/05/16 08:14	05/13/16 03:06	1
Di-n-butyl phthalate	<4.3		4.3	0.62	ug/L		05/05/16 08:14	05/13/16 03:06	1
4,6-Dinitro-2-methylphenol	<17		17	5.0	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dinitrophenol	<17		17	7.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4-Dinitrotoluene	<0.85		0.85	0.21	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,6-Dinitrotoluene	<0.43		0.43	0.063	ug/L		05/05/16 08:14	05/13/16 03:06	1
Di-n-octyl phthalate	<8.5		8.5	0.89	ug/L		05/05/16 08:14	05/13/16 03:06	1
Fluoranthene	<0.85		0.85	0.39	ug/L		05/05/16 08:14	05/13/16 03:06	1
Fluorene	<0.85		0.85	0.21	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorobenzene	<0.43		0.43	0.067	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorobutadiene	<4.3		4.3	0.44	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachlorocyclopentadiene	<17		17	5.4	ug/L		05/05/16 08:14	05/13/16 03:06	1
Hexachloroethane	<4.3		4.3	0.51	ug/L		05/05/16 08:14	05/13/16 03:06	1
Indeno[1,2,3-cd]pyrene	<0.17		0.17	0.064	ug/L		05/05/16 08:14	05/13/16 03:06	1
Isophorone	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Methylnaphthalene	**0.14**	**J**	0.43	0.055	ug/L		05/05/16 08:14	05/13/16 03:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Date Collected: 04/29/16 14:02
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-6

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.7		1.7	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
3 & 4 Methylphenol	**0.93**	**J**	1.7	0.38	ug/L		05/05/16 08:14	05/13/16 03:06	1
Naphthalene	<0.85		0.85	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Nitroaniline	<4.3		4.3	1.1	ug/L		05/05/16 08:14	05/13/16 03:06	1
3-Nitroaniline	<8.5		8.5	1.5	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Nitroaniline	<8.5		8.5	1.4	ug/L		05/05/16 08:14	05/13/16 03:06	1
Nitrobenzene	<0.85		0.85	0.38	ug/L		05/05/16 08:14	05/13/16 03:06	1
2-Nitrophenol	<8.5		8.5	2.1	ug/L		05/05/16 08:14	05/13/16 03:06	1
4-Nitrophenol	<17		17	6.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
N-Nitrosodi-n-propylamine	<0.43		0.43	0.13	ug/L		05/05/16 08:14	05/13/16 03:06	1
N-Nitrosodiphenylamine	<0.85		0.85	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,2'-oxybis[1-chloropropane]	<1.7		1.7	0.32	ug/L		05/05/16 08:14	05/13/16 03:06	1
Pentachlorophenol	<17		17	3.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
Phenanthrene	<0.85		0.85	0.26	ug/L		05/05/16 08:14	05/13/16 03:06	1
Phenol	<4.3		4.3	0.57	ug/L		05/05/16 08:14	05/13/16 03:06	1
Pyrene	<0.85		0.85	0.36	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4,5-Trichlorophenol	<8.5		8.5	2.2	ug/L		05/05/16 08:14	05/13/16 03:06	1
2,4,6-Trichlorophenol	<4.3		4.3	0.61	ug/L		05/05/16 08:14	05/13/16 03:06	1
Benzaldehyde	~~<17~~ *	R	~~17~~	~~13~~	~~ug/L~~		05/05/16 08:14	05/13/16 03:06	1
Caprolactam	<8.5		8.5	1.3	ug/L		05/05/16 08:14	05/13/16 03:06	1
Atrazine	<4.3		4.3	0.53	ug/L		05/05/16 08:14	05/13/16 03:06	1
1,1'-Biphenyl	<4.3		4.3	0.31	ug/L		05/05/16 08:14	05/13/16 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
2-Fluorophenol (Surr)	*67*		*30 - 110*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
Phenol-d5 (Surr)	*53*		*20 - 100*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*05/05/16 08:14*	*05/13/16 03:06*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*30 - 150*	*05/05/16 08:14*	*05/13/16 03:06*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.042		0.042	0.0055	ug/L		05/02/16 16:20	05/03/16 17:11	1
alpha-BHC	<0.042		0.042	0.0027	ug/L		05/02/16 16:20	05/03/16 17:11	1
alpha-Chlordane	<0.042		0.042	0.0046	ug/L		05/02/16 16:20	05/03/16 17:11	1
beta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 17:11	1
4,4'-DDD	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 17:11	1
4,4'-DDE	<0.042		0.042	0.0040	ug/L		05/02/16 16:20	05/03/16 17:11	1
4,4'-DDT	<0.042		0.042	0.0033	ug/L		05/02/16 16:20	05/03/16 17:11	1
delta-BHC	<0.042		0.042	0.011	ug/L		05/02/16 16:20	05/03/16 17:11	1
Dieldrin	<0.042		0.042	0.013	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endosulfan I	<0.042		0.042	0.0043	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endosulfan II	<0.042		0.042	0.0029	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endosulfan sulfate	<0.042		0.042	0.012	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endrin	<0.042		0.042	0.015	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endrin aldehyde	<0.042		0.042	0.0086	ug/L		05/02/16 16:20	05/03/16 17:11	1
Endrin ketone	<0.042		0.042	0.018	ug/L		05/02/16 16:20	05/03/16 17:11	1
gamma-BHC (Lindane)	<0.042		0.042	0.0058	ug/L		05/02/16 16:20	05/03/16 17:11	1
gamma-Chlordane	<0.042		0.042	0.0075	ug/L		05/02/16 16:20	05/03/16 17:11	1

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 17:11	1
Heptachlor epoxide	<0.042		0.042	0.014	ug/L		05/02/16 16:20	05/03/16 17:11	1
Methoxychlor	<0.083		0.083	0.024	ug/L		05/02/16 16:20	05/03/16 17:11	1
Toxaphene	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*05/02/16 16:20*	*05/03/16 17:11*	*1*
Tetrachloro-m-xylene	*67*		*30 - 120*	*05/02/16 16:20*	*05/03/16 17:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.42		0.42	0.070	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1221	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1232	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1242	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1248	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1254	<0.42		0.42	0.21	ug/L		05/02/16 16:20	05/03/16 18:23	1
PCB-1260	<0.42		0.42	0.073	ug/L		05/02/16 16:20	05/03/16 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*77*		*30 - 127*	*05/02/16 16:20*	*05/03/16 18:23*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*05/02/16 16:20*	*05/03/16 18:23*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:51	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:51	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:51	1
Barium	**0.65**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:51	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:51	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:51	1
Calcium	**110**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:51	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:51	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:51	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:51	1
Iron	**10**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:51	1
Lead	<0.0050		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:51	1
Magnesium	**91**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:51	1
Manganese	**0.16**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:51	1
Nickel	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:51	1
Potassium	**38**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:51	1
Selenium	<0.010		0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:51	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:51	1
Sodium	**240**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:51	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:51	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:51	1
Zinc	<0.020		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:51	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 19:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: MW-8-GW-04292016

Lab Sample ID: 500-110948-6

Date Collected: 04/29/16 14:02
Matrix: Water
Date Received: 04/30/16 07:34

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 19:57	1
Arsenic	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:57	1
Barium	**0.63**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 19:57	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 19:57	1
Calcium	**110**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 19:57	1
Chromium	<0.010		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 19:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 19:57	1
Copper	<0.010		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 19:57	1
Iron	**10**	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 19:57	1
Lead	<0.0050	UJ	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 19:57	1
Magnesium	**90**		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 19:57	1
Manganese	**0.16**		0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 19:57	1
Nickel	<0.010		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 19:57	1
Potassium	**37**		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 19:57	1
Selenium	< 0.010 ~~**0.0065**~~	~~**J B**~~ UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 19:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 19:57	1
Sodium	**230**		1.0	0.43	mg/L		05/02/16 09:28	05/03/16 19:57	1
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 19:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 19:57	1
Zinc	<0.020	UJ	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 19:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.30**	**J**	1.0	0.22	mg/L			05/03/16 05:52	1
Sulfate	<5.0		5.0	2.0	mg/L			05/06/16 09:22	1
Total Organic Carbon - Duplicates	**13**		1.0	0.23	mg/L			05/13/16 23:59	1
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**23**		5.0	1.6	mg/L			05/03/16 11:52	1
Ammonia	**41**	~~**B**~~	2.0	0.43	mg/L		05/11/16 18:12	05/12/16 19:31	10
Nitrogen, Nitrite	**0.034**		0.020	0.0032	mg/L			04/30/16 12:23	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.045	mg/L			05/12/16 09:42	1

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		5.0	1.7	ug/L			05/12/16 21:52	1
Benzene	**7.0**		0.50	0.15	ug/L			05/12/16 21:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			05/12/16 21:52	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			05/12/16 21:52	1
Bromomethane	<2.0		2.0	0.80	ug/L			05/12/16 21:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			05/12/16 21:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			05/12/16 21:52	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
Chloroethane	<1.0		1.0	0.51	ug/L			05/12/16 21:52	1
Chloroform	<1.0		1.0	0.37	ug/L			05/12/16 21:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			05/12/16 21:52	1
cis-1,2-Dichloroethene	**4.5**		1.0	0.41	ug/L			05/12/16 21:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			05/12/16 21:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			05/12/16 21:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			05/12/16 21:52	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			05/12/16 21:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
1,2-Dichlorobenzene	**2.5**		1.0	0.33	ug/L			05/12/16 21:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			05/12/16 21:52	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			05/12/16 21:52	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			05/12/16 21:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			05/12/16 21:52	1
1,2-Dichloroethane	**1.4**		1.0	0.39	ug/L			05/12/16 21:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			05/12/16 21:52	1
Ethylbenzene	**97**		0.50	0.18	ug/L			05/12/16 21:52	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			05/12/16 21:52	1
Isopropylbenzene	**6.6**		1.0	0.39	ug/L			05/12/16 21:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			05/12/16 21:52	1
Methylcyclohexane	**1.1**		1.0	0.32	ug/L			05/12/16 21:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			05/12/16 21:52	1
Methyl Ethyl Ketone	**13**	J	5.0	2.1	ug/L			05/12/16 21:52	1
methyl isobutyl ketone	**27**	J	5.0	2.2	ug/L			05/12/16 21:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
Styrene	<1.0		1.0	0.39	ug/L			05/12/16 21:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			05/12/16 21:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			05/12/16 21:52	1
Toluene	**150**		0.50	0.15	ug/L			05/12/16 21:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			05/12/16 21:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			05/12/16 21:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			05/12/16 21:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			05/12/16 21:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			05/12/16 21:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			05/12/16 21:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			05/12/16 21:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			05/12/16 21:52	1
Vinyl chloride	**3.7**		0.50	0.20	ug/L			05/12/16 21:52	1

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00

Matrix: Water

Date Received: 04/30/16 07:34

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*05/12/16 21:52*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*05/12/16 21:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*05/12/16 21:52*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/12/16 21:52*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**440**	D	5.0	1.1	ug/L			05/12/16 22:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*05/12/16 22:18*	*5*
Dibromofluoromethane	*99*		*70 - 120*		*05/12/16 22:18*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*05/12/16 22:18*	*5*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/12/16 22:18*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<8.4		8.4	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Acenaphthylene	<8.4		8.4	2.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
Acetophenone	<42		42	5.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Anthracene	<8.4		8.4	2.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[a]anthracene	<1.7		1.7	0.48	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[a]pyrene	<1.7		1.7	0.83	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[b]fluoranthene	<1.7		1.7	0.68	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[g,h,i]perylene	<8.4		8.4	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzo[k]fluoranthene	<1.7		1.7	0.54	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-chloroethoxy)methane	<17		17	2.4	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-chloroethyl)ether	<17		17	2.5	ug/L		05/05/16 08:14	05/13/16 10:21	10
Bis(2-ethylhexyl) phthalate	**88**	D	84	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Bromophenyl phenyl ether	<42		42	4.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Butyl benzyl phthalate	<17		17	4.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Carbazole	<42		42	3.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chloroaniline	<84	UJ	84	17	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chloro-3-methylphenol	<84		84	19	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Chloronaphthalene	<17		17	2.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Chlorophenol	<42		42	4.7	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Chlorophenyl phenyl ether	<42		42	5.4	ug/L		05/05/16 08:14	05/13/16 10:21	10
Chrysene	<4.2		4.2	0.58	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dibenz(a,h)anthracene	<2.5		2.5	0.43	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dibenzofuran	<17		17	2.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
3,3'-Dichlorobenzidine	<42		42	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 10:21	10
Diethyl phthalate	<17		17	3.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dimethylphenol	**110**	JD	84	15	ug/L		05/05/16 08:14	05/13/16 10:21	10
Dimethyl phthalate	<17		17	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
Di-n-butyl phthalate	<42		42	6.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
4,6-Dinitro-2-methylphenol	<170		170	50	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dinitrophenol	<170		170	72	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4-Dinitrotoluene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,6-Dinitrotoluene	<4.2		4.2	0.62	ug/L		05/05/16 08:14	05/13/16 10:21	10
Di-n-octyl phthalate	<84		84	8.9	ug/L		05/05/16 08:14	05/13/16 10:21	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016)

Date Collected: 04/29/16 00:00
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-7

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Fluorene	<8.4		8.4	2.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorobenzene	<4.2		4.2	0.67	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorobutadiene	<42		42	4.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachlorocyclopentadiene	<170		170	54	ug/L		05/05/16 08:14	05/13/16 10:21	10
Hexachloroethane	<42		42	5.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
Indeno[1,2,3-cd]pyrene	<1.7		1.7	0.63	ug/L		05/05/16 08:14	05/13/16 10:21	10
Isophorone	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Methylnaphthalene	**6.6**	D	4.2	0.55	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Methylphenol	**19**	D	17	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
3 & 4 Methylphenol	**90**	D	17	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
Naphthalene	**16**	D	8.4	2.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Nitroaniline	<42		42	11	ug/L		05/05/16 08:14	05/13/16 10:21	10
3-Nitroaniline	<84		84	15	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Nitroaniline	<84		84	14	ug/L		05/05/16 08:14	05/13/16 10:21	10
Nitrobenzene	<8.4		8.4	3.8	ug/L		05/05/16 08:14	05/13/16 10:21	10
2-Nitrophenol	<84		84	21	ug/L		05/05/16 08:14	05/13/16 10:21	10
4-Nitrophenol	<170		170	63	ug/L		05/05/16 08:14	05/13/16 10:21	10
N-Nitrosodi-n-propylamine	<4.2		4.2	1.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
N-Nitrosodiphenylamine	<8.4		8.4	3.1	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,2'-oxybis[1-chloropropane]	<17		17	3.2	ug/L		05/05/16 08:14	05/13/16 10:21	10
Pentachlorophenol	<170		170	33	ug/L		05/05/16 08:14	05/13/16 10:21	10
Phenanthrene	<8.4		8.4	2.5	ug/L		05/05/16 08:14	05/13/16 10:21	10
Phenol	**38**	J D	42	5.7	ug/L		05/05/16 08:14	05/13/16 10:21	10
Pyrene	<8.4		8.4	3.6	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4,5-Trichlorophenol	<84		84	22	ug/L		05/05/16 08:14	05/13/16 10:21	10
2,4,6-Trichlorophenol	<42		42	6.0	ug/L		05/05/16 08:14	05/13/16 10:21	10
Benzaldehyde	~~<170~~ *	R	~~170~~	~~130~~	~~ug/L~~		05/05/16 08:14	05/13/16 10:21	10
Caprolactam	<84		84	13	ug/L		05/05/16 08:14	05/13/16 10:21	10
Atrazine	<42		42	5.3	ug/L		05/05/16 08:14	05/13/16 10:21	10
1,1'-Biphenyl	<42		42	3.1	ug/L		05/05/16 08:14	05/13/16 10:21	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*99*		*30 - 123*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
2-Fluorophenol (Surr)	*67*		*30 - 110*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
Nitrobenzene-d5 (Surr)	*88*		*33 - 139*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
Phenol-d5 (Surr)	*60*		*20 - 100*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
Terphenyl-d14 (Surr)	*113*		*42 - 150*	*05/05/16 08:14*	*05/13/16 10:21*	*10*
2,4,6-Tribromophenol (Surr)	*111*		*30 - 150*	*05/05/16 08:14*	*05/13/16 10:21*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.043		0.043	0.0058	ug/L		05/02/16 16:20	05/03/16 17:30	1
alpha-BHC	<0.043		0.043	0.0028	ug/L		05/02/16 16:20	05/03/16 17:30	1
alpha-Chlordane	<0.043		0.043	0.0048	ug/L		05/02/16 16:20	05/03/16 17:30	1
beta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDD	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDE	<0.043		0.043	0.0041	ug/L		05/02/16 16:20	05/03/16 17:30	1
4,4'-DDT	<0.043		0.043	0.0035	ug/L		05/02/16 16:20	05/03/16 17:30	1
delta-BHC	<0.043		0.043	0.011	ug/L		05/02/16 16:20	05/03/16 17:30	1

Client Sample ID: DUP-2 (04292016)

Lab Sample ID: 500-110948-7

Date Collected: 04/29/16 00:00

Matrix: Water

Date Received: 04/30/16 07:34

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.043		0.043	0.014	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endosulfan I	<0.043		0.043	0.0045	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endosulfan II	<0.043		0.043	0.0030	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endosulfan sulfate	<0.043		0.043	0.013	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endrin	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endrin aldehyde	<0.043		0.043	0.0089	ug/L		05/02/16 16:20	05/03/16 17:30	1
Endrin ketone	<0.043		0.043	0.018	ug/L		05/02/16 16:20	05/03/16 17:30	1
gamma-BHC (Lindane)	<0.043		0.043	0.0061	ug/L		05/02/16 16:20	05/03/16 17:30	1
gamma-Chlordane	<0.043		0.043	0.0078	ug/L		05/02/16 16:20	05/03/16 17:30	1
Heptachlor	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 17:30	1
Heptachlor epoxide	<0.043		0.043	0.015	ug/L		05/02/16 16:20	05/03/16 17:30	1
Methoxychlor	<0.087		0.087	0.025	ug/L		05/02/16 16:20	05/03/16 17:30	1
Toxaphene	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 17:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*35*		*30 - 143*	*05/02/16 16:20*	*05/03/16 17:30*	*1*
Tetrachloro-m-xylene	*88*		*30 - 120*	*05/02/16 16:20*	*05/03/16 17:30*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1016	<0.43		0.43	0.073	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1221	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1232	~~5.7~~		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1232	**4.0**		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1242	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1248	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1254	<0.43		0.43	0.22	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1260	<0.43		0.43	0.076	ug/L		05/02/16 16:20	05/03/16 18:39	1
PCB-1260	<0.43		0.43	0.076	ug/L		05/02/16 16:20	05/03/16 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*46*		*30 - 127*	*05/02/16 16:20*	*05/03/16 18:39*	*1*
Tetrachloro-m-xylene	*33*		*30 - 127*	*05/02/16 16:20*	*05/03/16 18:39*	*1*
DCB Decachlorobiphenyl	*24*	*X*	*30 - 150*	*05/02/16 16:20*	*05/03/16 18:39*	*1*
DCB Decachlorobiphenyl	*30*		*30 - 150*	*05/02/16 16:20*	*05/03/16 18:39*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.51**		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 20:02	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 20:02	1
Arsenic	**0.023**		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:02	1
Barium	**0.31**		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 20:02	1
Cadmium	**0.0022**		0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 20:02	1
Calcium	**28**	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 20:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016)

Date Collected: 04/29/16 00:00
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-7

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.14		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 20:02	1
Cobalt	0.036		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 20:02	1
Copper	0.013		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:02	1
Iron	2.2	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 20:02	1
Lead	0.13		0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 20:02	1
Magnesium	29		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 20:02	1
Manganese	0.0093	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 20:02	1
Nickel	0.14		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:02	1
Potassium	610		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 20:02	1
Selenium	< 0.010 ~~0.0093~~	~~J B~~ UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 20:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 20:02	1
Sodium	3300		100	43	mg/L		05/02/16 09:28	05/05/16 15:59	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 20:02	1
Vanadium	0.057		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 20:02	1
Zinc	0.18		0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 20:02	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.27		0.20	0.062	mg/L		05/02/16 09:28	05/03/16 20:07	1
Antimony	<0.020		0.020	0.0064	mg/L		05/02/16 09:28	05/03/16 20:07	1
Arsenic	0.021		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:07	1
Barium	0.29		0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		05/02/16 09:28	05/03/16 20:07	1
Cadmium	0.0014	J	0.0020	0.00094	mg/L		05/02/16 09:28	05/03/16 20:07	1
Calcium	26	J	0.20	0.059	mg/L		05/02/16 09:28	05/03/16 20:07	1
Chromium	0.13		0.010	0.0024	mg/L		05/02/16 09:28	05/03/16 20:07	1
Cobalt	0.034		0.0050	0.00096	mg/L		05/02/16 09:28	05/03/16 20:07	1
Copper	0.0048	J	0.010	0.0022	mg/L		05/02/16 09:28	05/03/16 20:07	1
Iron	2.0	J	0.20	0.10	mg/L		05/02/16 09:28	05/03/16 20:07	1
Lead	0.032	J	0.0050	0.0024	mg/L		05/02/16 09:28	05/03/16 20:07	1
Magnesium	28		0.10	0.034	mg/L		05/02/16 09:28	05/03/16 20:07	1
Manganese	0.0084	J	0.010	0.0034	mg/L		05/02/16 09:28	05/03/16 20:07	1
Nickel	0.14		0.010	0.0031	mg/L		05/02/16 09:28	05/03/16 20:07	1
Potassium	590		0.50	0.16	mg/L		05/02/16 09:28	05/03/16 20:07	1
Selenium	< 0.010 ~~0.0078~~	~~J B~~ UB	0.010	0.0046	mg/L		05/02/16 09:28	05/03/16 20:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		05/02/16 09:28	05/03/16 20:07	1
Sodium	3200		100	43	mg/L		05/02/16 09:28	05/05/16 16:03	100
Thallium	<0.010		0.010	0.0028	mg/L		05/02/16 09:28	05/03/16 20:07	1
Vanadium	0.050		0.0050	0.0019	mg/L		05/02/16 09:28	05/03/16 20:07	1
Zinc	0.060	J	0.020	0.0090	mg/L		05/02/16 09:28	05/03/16 20:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:50	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		05/04/16 15:00	05/05/16 11:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-110948-1

Client Sample ID: DUP-2 (04292016)

Date Collected: 04/29/16 00:00
Date Received: 04/30/16 07:34

Lab Sample ID: 500-110948-7

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**4.5**	J	1.0	0.22	mg/L			05/03/16 05:55	1
Sulfate	**63**		20	8.0	mg/L			05/06/16 09:06	4
Total Organic Carbon - Duplicates	**350**		20	4.6	mg/L			05/14/16 00:19	20
Nitrogen, Nitrate	<0.10		0.10	0.045	mg/L			05/13/16 15:09	1
Total Suspended Solids	**19**		5.0	1.6	mg/L			05/03/16 11:53	1
Ammonia	**770**	~~B~~	40	8.6	mg/L		05/11/16 18:12	05/12/16 20:17	200
Nitrogen, Nitrite	<0.020		0.020	0.0032	mg/L			04/30/16 12:23	1
Nitrogen, Nitrate Nitrite	<0.20		0.20	0.090	mg/L			05/12/16 09:44	2

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-115433-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
8/22/2016 3:46:35 PM

Therese Hargraves, Project Manager I
(708)534-5200
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-115433-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-115433-1

Comments
No additional comments.

Receipt
The samples were received on 8/8/2016 5:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.8º C and 3.1º C.

GC/MS VOA
Method(s) 8260B: The following samples were diluted due to the abundance of non-target analytes: MW-01-GW-08082016 (500-115433-1) and MW-03-GW-08082016 (500-115433-3). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: One surrogate recovery for the following sample was outside control limits: MW-01-GW-08082016 (500-115433-1). Evidence of matrix interference is present (pH=9); therefore, re-analysis was not performed.

Method(s) 8260B: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-01-GW-08082016 (500-115433-1), MW-02-GW-08082016 (500-115433-2), MW-03-GW-08082016 (500-115433-3), MW-04-GW-08082016 (500-115433-4) and MW-05-GW-08082016 (500-115433-5). The sample was analyzed within 7 days per EPA recommendation, therefore no further corrective action was needed.

Method(s) 8260B: The initial calibration verification (ICV) result for Dichlorodifluoromethane was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: Perylene-d12 Internal standard (ISTD) response for the following sample was outside of acceptance limits: MW-04-GW-08082016 (500-115433-4). Analytes associated to this internal standard were non-detect; therefore, re-extraction/re-analysis was not performed.

Method(s) 8270D: The initial calibration verification (ICV) analyzed in batch 500-338103/13 was outside method criteria for the following analytes: 4-Chloroaniline and Bis(2-chloroethyl)ether. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated. MW-01-GW-08082016 (500-115433-1), MW-02-GW-08082016 (500-115433-2) and MW-05-GW-08082016 (500-115433-5)

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 500-347565 recovered above the upper control limit for Benzaldehyde, 4-Chloroaniline, 3-Nitroaniline and Indeno(1,2,3-cd)pyrene. The continuing calibration verification (CCV) associated with batch 500-347248 recovered above the upper control limit for Benzaldehyde, 3,3'-Dichlorobenzidene and Indeno(1,2,3-cd)pyrene. The continuing calibration verification (CCV) associated with batch 500-348460 recovered above the upper control limit for the surrogate 2,4,6-Tribromophenol. The samples associated with this CCV were non-detects for the affected analytes and the affected surrogate was within QC limits for the affected samples; therefore, the data have been reported. The following samples are impacted: MW-01-GW-08082016 (500-115433-1), MW-02-GW-08082016 (500-115433-2), MW-03-GW-08082016 (500-115433-3), MW-04-GW-08082016 (500-115433-4) and MW-05-GW-08082016 (500-115433-5).

Method(s) 8270D: The following samples required a dilution due to the nature of the sample matrix: MW-03-GW-08082016 (500-115433-3). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-347168 recovered outside control limits for the following analytes: 4-Chloroaniline and Hexachlorocyclopentadiene.

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside

Job ID: 500-115433-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS/LCSD associated with batch 347168 had 1 analyte outside control limits: Hexachlorocyclopentadiene. These results have been reported and qualified. (LCS 500-347168/2-A) and (LCSD 500-347168/3-A)

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS/LCSD associated with batch 347480 had 1 analyte outside control limits: Indeno(1,2,3-cd)pyrene and the LCSD had Carbazole outside the QC limits. These results have been reported and qualified. (LCS 500-347480/2-A) and (LCSD 500-347480/3-A)

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 500-347565 was outside the method criteria for the following analyte(s): 2,2'-oxybis[1-chloropropane], Bis(2-chloroethyl)ether, Hexachlorocyclopentadiene and 4-Nitrophenol. The continuing calibration verification (CCV) analyzed in batch 500-347248 was outside the method criteria for the following analyte(s): 4-Chloroaniline, Hexachlorocyclopentadiene, Pentachlorophenol and 4-Nitrophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The Tetrachloro-m-xylene surrogate recovery for the following sample was outside acceptance limits (high biased) on the primary column due to matrix interference: MW-04-GW-08082016 (500-115433-4). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method(s) 8081B: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-347128 recovered outside control limits for the following analytes: alpha-BHC, delta-BHC and gamma-BHC (Lindane).

Method(s) 8081B: The continuing calibration verification (CCV) associated with batch 500-348276 recovered above the upper control limit for alpha-Chlordane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-01-GW-08082016 (500-115433-1), MW-02-GW-08082016 (500-115433-2), MW-03-GW-08082016 (500-115433-3), MW-04-GW-08082016 (500-115433-4) and MW-05-GW-08082016 (500-115433-5).

Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-01-GW-08082016 (500-115433-1), MW-02-GW-08082016 (500-115433-2), MW-03-GW-08082016 (500-115433-3), MW-04-GW-08082016 (500-115433-4) and MW-05-GW-08082016 (500-115433-5). The reagent lot number used was: 142098.

Method(s) 8082A: The following sample required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-04-GW-08082016 (500-115433-4). The reagent lot number used was: 142098.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016 — Lab Sample ID: 500-115433-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	110		10	3.5	ug/L	2		8260B	Total/NA
Benzene	33		1.0	0.29	ug/L	2		8260B	Total/NA
Chlorobenzene	4.9		2.0	0.77	ug/L	2		8260B	Total/NA
Ethylbenzene	20		1.0	0.37	ug/L	2		8260B	Total/NA
Isopropylbenzene	11		2.0	0.77	ug/L	2		8260B	Total/NA
Methyl Ethyl Ketone	85		10	4.2	ug/L	2		8260B	Total/NA
methyl isobutyl ketone	200		10	4.3	ug/L	2		8260B	Total/NA
Toluene	10		1.0	0.30	ug/L	2		8260B	Total/NA
Xylenes, Total	21		2.0	0.44	ug/L	2		8260B	Total/NA
Acenaphthene	4.8		0.73	0.23	ug/L	1		8270D	Total/NA
Acetophenone	1.1	J	3.7	0.49	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.20		0.15	0.041	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.21		0.15	0.072	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.25		0.15	0.059	ug/L	1		8270D	Total/NA
Benzo[k]fluoranthene	0.16		0.15	0.047	ug/L	1		8270D	Total/NA
Chrysene	0.21	J	0.37	0.050	ug/L	1		8270D	Total/NA
Dibenzofuran	0.64	J	1.5	0.19	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	4.0	J	7.3	1.3	ug/L	1		8270D	Total/NA
Fluorene	1.2		0.73	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	3.6		1.5	0.048	ug/L	1		8270D	Total/NA
2-Methylphenol	1.4	J	1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	6.3		1.5	0.33	ug/L	1		8270D	Total/NA
Phenanthrene	0.79		0.73	0.22	ug/L	1		8270D	Total/NA
Naphthalene - DL	120		3.7	1.1	ug/L	5		8270D	Total/NA
Phenol - DL	62		18	2.5	ug/L	5		8270D	Total/NA
Aluminum	0.38		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0042	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.68		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.00094	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	550		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0068	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	0.53		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.010		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	0.64		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.014		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.018		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	51		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	220		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.021		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.24		0.20	0.062	mg/L	1		6010C	Dissolved
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	530		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0033	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Magnesium	0.071	J	0.10	0.041	mg/L	1		6010C	Dissolved
Nickel	0.017		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	50		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	210		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	2.8		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	37	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	43		2.0	0.53	mg/L	2		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016 (Continued) — Lab Sample ID: 500-115433-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrate	0.047	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	26		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	57	B	5.0	0.71	mg/L	25		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.047	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: MW-02-GW-08082016 — Lab Sample ID: 500-115433-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.1		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	10		0.50	0.15	ug/L	1		8260B	Total/NA
Chloroethane	2.6		1.0	0.51	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	4.8		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	2.5		1.0	0.40	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	7.0		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	0.85		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.0		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.60		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	2.1		1.0	0.22	ug/L	1		8260B	Total/NA
Chlorobenzene - DL	450		5.0	1.9	ug/L	5		8260B	Total/NA
Carbazole	0.31	J *	3.7	0.26	ug/L	1		8270D	Total/NA
Dibenzofuran	0.26	J	1.5	0.19	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	0.94	J	3.7	0.54	ug/L	1		8270D	Total/NA
2,6-Dinitrotoluene	2.2		0.37	0.054	ug/L	1		8270D	Total/NA
Fluorene	0.46	J	0.73	0.18	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	6.7		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	44		0.73	0.23	ug/L	1		8270D	Total/NA
Phenanthrene	0.26	J	0.73	0.22	ug/L	1		8270D	Total/NA
2-Methylnaphthalene - DL	76		7.3	0.24	ug/L	5		8270D	Total/NA
Barium	0.30		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	90		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0029	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0027	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	33		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	46		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.23		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	32		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	160		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.0098	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.28		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.00096	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	90		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0029	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	31		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	45		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	31		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0052	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	160		1.0	0.43	mg/L	1		6010C	Dissolved
Total Organic Carbon - Duplicates	18		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016 (Continued) — Lab Sample ID: 500-115433-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonia	42	B	2.0	0.28	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-03-GW-08082016 — Lab Sample ID: 500-115433-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	160		5.0	1.5	ug/L	10		8260B	Total/NA
Chlorobenzene	5.7	J	10	3.9	ug/L	10		8260B	Total/NA
Ethylbenzene	34		5.0	1.8	ug/L	10		8260B	Total/NA
Toluene	180		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total	220		10	2.2	ug/L	10		8260B	Total/NA
Acenaphthene	18		0.76	0.24	ug/L	1		8270D	Total/NA
Acenaphthylene	2.7		0.76	0.20	ug/L	1		8270D	Total/NA
Acetophenone	1.9	J	3.8	0.51	ug/L	1		8270D	Total/NA
Anthracene	12		0.76	0.25	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.64		0.15	0.043	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.39		0.15	0.061	ug/L	1		8270D	Total/NA
Chrysene	0.56		0.38	0.052	ug/L	1		8270D	Total/NA
Dibenzofuran	34		1.5	0.20	ug/L	1		8270D	Total/NA
Fluoranthene	7.8		0.76	0.35	ug/L	1		8270D	Total/NA
Fluorene	49		0.76	0.19	ug/L	1		8270D	Total/NA
2-Methylphenol	27		1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	22		1.5	0.34	ug/L	1		8270D	Total/NA
Phenol	4.9		3.8	0.51	ug/L	1		8270D	Total/NA
Pyrene	6.3		0.76	0.32	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	20		3.8	0.28	ug/L	1		8270D	Total/NA
Carbazole - DL	120		19	1.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol - DL	68		38	6.9	ug/L	5		8270D	Total/NA
Phenanthrene - DL	62		3.8	1.1	ug/L	5		8270D	Total/NA
2-Methylnaphthalene - DL2	330		38	1.2	ug/L	25		8270D	Total/NA
Naphthalene - DL3	2000		38	12	ug/L	50		8270D	Total/NA
Aluminum	0.11	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.89		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	65		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0024	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0033	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	6.4		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	75		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0048	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	56		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	250		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.88		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	66		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	5.5		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	75		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0043	J	0.010	0.0037	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016 (Continued) — Lab Sample ID: 500-115433-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	55		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	250		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	10	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	21		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	8.0		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	38	B	2.0	0.28	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-04-GW-08082016 — Lab Sample ID: 500-115433-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	15		5.0	1.7	ug/L	1		8260B	Total/NA
Carbon disulfide	28		2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	0.68	J	1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	6.3		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.3		1.0	0.49	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	22		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	30		1.0	0.39	ug/L	1		8260B	Total/NA
1,2-Dichloropropane	1.3		1.0	0.43	ug/L	1		8260B	Total/NA
Ethylbenzene	4.9		0.50	0.18	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	14		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	19		0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	1.0		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	5.6		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	4.3		1.0	0.22	ug/L	1		8260B	Total/NA
Benzene - DL	510		5.0	1.5	ug/L	10		8260B	Total/NA
2,4-Dimethylphenol	25		7.3	1.3	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	0.25	J	1.5	0.048	ug/L	1		8270D	Total/NA
2-Methylphenol	7.6		1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	8.0		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	1.5		0.73	0.23	ug/L	1		8270D	Total/NA
Phenol	1.7	J	3.7	0.49	ug/L	1		8270D	Total/NA
PCB-1242	0.69		0.37	0.18	ug/L	1		8082A	Total/NA
Arsenic	0.0083	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.068		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	91		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0025	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Magnesium	31		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.42		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	14		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	330		1.0	0.43	mg/L	1		6010C	Total/NA
Arsenic	0.0098	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.069		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	92		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Magnesium	33		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.40		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	15		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	350		1.0	0.43	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016 (Continued) — Lab Sample ID: 500-115433-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	12		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	250	B	50	15	mg/L	10		9038	Total/NA
Total Organic Carbon - Duplicates	19		1.0	0.27	mg/L	1		9060A	Total/NA
Ammonia	9.6	B	1.0	0.14	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-05-GW-08082016 — Lab Sample ID: 500-115433-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	11		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	0.25	J	0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	4.2		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.8		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.1		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	40		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.55	J	1.0	0.32	ug/L	1		8260B	Total/NA
Xylenes, Total	0.64	J	1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.29	J	0.76	0.23	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	1.3	J	7.6	1.3	ug/L	1		8270D	Total/NA
2-Chloronaphthalene	0.22	J	1.5	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	0.46	J	1.5	0.049	ug/L	1		8270D	Total/NA
Naphthalene	0.33	J	0.76	0.23	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	1.0		0.76	0.28	ug/L	1		8270D	Total/NA
2,2'-oxybis[1-chloropropane]	0.32	J	1.5	0.29	ug/L	1		8270D	Total/NA
Aluminum	0.078	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.85		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	63		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0035	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	20		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	80		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.055		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	42		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	150		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.0099	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.89		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	68		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0024	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	21		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	84		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.057		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	44		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	150		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	2.8	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	19		1.0	0.27	mg/L	1		9060A	Total/NA
Nitrogen, Nitrate	0.42		0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	39		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	54	B	5.0	0.71	mg/L	25		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.42		0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-115433-1	MW-01-GW-08082016	Water	08/08/16 11:00	08/08/16 17:45
500-115433-2	MW-02-GW-08082016	Water	08/08/16 13:00	08/08/16 17:45
500-115433-3	MW-03-GW-08082016	Water	08/08/16 13:30	08/08/16 17:45
500-115433-4	MW-04-GW-08082016	Water	08/08/16 15:20	08/08/16 17:45
500-115433-5	MW-05-GW-08082016	Water	08/08/16 15:40	08/08/16 17:45

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**110**		10	3.5	ug/L			08/11/16 19:48	2
Benzene	**33**		1.0	0.29	ug/L			08/11/16 19:48	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			08/11/16 19:48	2
Bromoform	<2.0		2.0	0.97	ug/L			08/11/16 19:48	2
Bromomethane	<4.0		4.0	1.6	ug/L			08/11/16 19:48	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			08/11/16 19:48	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			08/11/16 19:48	2
Chlorobenzene	**4.9**		2.0	0.77	ug/L			08/11/16 19:48	2
Chloroethane	<2.0		2.0	1.0	ug/L			08/11/16 19:48	2
Chloroform	<2.0		2.0	0.74	ug/L			08/11/16 19:48	2
Chloromethane	<2.0		2.0	0.64	ug/L			08/11/16 19:48	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			08/11/16 19:48	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			08/11/16 19:48	2
Cyclohexane	<2.0		2.0	0.97	ug/L			08/11/16 19:48	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			08/11/16 19:48	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			08/11/16 19:48	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			08/11/16 19:48	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			08/11/16 19:48	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			08/11/16 19:48	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			08/11/16 19:48	2
Dichlorodifluoromethane	<4.0		4.0	1.3	ug/L			08/11/16 19:48	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			08/11/16 19:48	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			08/11/16 19:48	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			08/11/16 19:48	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			08/11/16 19:48	2
Ethylbenzene	**20**		1.0	0.37	ug/L			08/11/16 19:48	2
2-Hexanone	<10		10	3.1	ug/L			08/11/16 19:48	2
Isopropylbenzene	**11**		2.0	0.77	ug/L			08/11/16 19:48	2
Methyl acetate	<10		10	4.0	ug/L			08/11/16 19:48	2
Methylcyclohexane	<2.0		2.0	0.63	ug/L			08/11/16 19:48	2
Methylene Chloride	<10		10	3.3	ug/L			08/11/16 19:48	2
Methyl Ethyl Ketone	**85**		10	4.2	ug/L			08/11/16 19:48	2
methyl isobutyl ketone	**200**		10	4.3	ug/L			08/11/16 19:48	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			08/11/16 19:48	2
Styrene	<2.0		2.0	0.77	ug/L			08/11/16 19:48	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			08/11/16 19:48	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			08/11/16 19:48	2
Toluene	**10**		1.0	0.30	ug/L			08/11/16 19:48	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			08/11/16 19:48	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			08/11/16 19:48	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			08/11/16 19:48	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			08/11/16 19:48	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			08/11/16 19:48	2
Trichloroethene	<1.0		1.0	0.33	ug/L			08/11/16 19:48	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			08/11/16 19:48	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			08/11/16 19:48	2
Vinyl chloride	<1.0		1.0	0.41	ug/L			08/11/16 19:48	2
Xylenes, Total	**21**		2.0	0.44	ug/L			08/11/16 19:48	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00

Matrix: Water

Date Received: 08/08/16 17:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*08/11/16 19:48*	*2*
Dibromofluoromethane	*44*	*X*	*70 - 120*		*08/11/16 19:48*	*2*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 127*		*08/11/16 19:48*	*2*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/11/16 19:48*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.8**		0.73	0.23	ug/L		08/09/16 15:52	08/12/16 18:47	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/09/16 15:52	08/12/16 18:47	1
Acetophenone	**1.1**	**J**	3.7	0.49	ug/L		08/09/16 15:52	08/12/16 18:47	1
Anthracene	<0.73		0.73	0.24	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[a]anthracene	**0.20**		0.15	0.041	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[a]pyrene	**0.21**		0.15	0.072	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[b]fluoranthene	**0.25**		0.15	0.059	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[k]fluoranthene	**0.16**		0.15	0.047	ug/L		08/09/16 15:52	08/12/16 18:47	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/12/16 18:47	1
Bis(2-chloroethyl)ether	<1.5	^	1.5	0.21	ug/L		08/09/16 15:52	08/12/16 18:47	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.39	ug/L		08/09/16 15:52	08/12/16 18:47	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/09/16 15:52	08/12/16 18:47	1
Carbazole	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Chloroaniline	<7.3	^ *	7.3	1.5	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/12/16 18:47	1
Chrysene	**0.21**	**J**	0.37	0.050	ug/L		08/09/16 15:52	08/12/16 18:47	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		08/09/16 15:52	08/12/16 18:47	1
Dibenzofuran	**0.64**	**J**	1.5	0.19	ug/L		08/09/16 15:52	08/12/16 18:47	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/12/16 18:47	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dimethylphenol	**4.0**	**J**	7.3	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/09/16 15:52	08/12/16 18:47	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		08/09/16 15:52	08/12/16 18:47	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,6-Dinitrotoluene	<0.37		0.37	0.054	ug/L		08/09/16 15:52	08/12/16 18:47	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/09/16 15:52	08/12/16 18:47	1
Fluoranthene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/12/16 18:47	1
Fluorene	**1.2**		0.73	0.18	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachlorocyclopentadiene	<15	*	15	4.7	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/09/16 15:52	08/12/16 18:47	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		08/09/16 15:52	08/12/16 18:47	1
Isophorone	<1.5		1.5	0.27	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Methylnaphthalene	**3.6**		1.5	0.048	ug/L		08/09/16 15:52	08/12/16 18:47	1

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	**J**	1.5	0.22	ug/L		08/09/16 15:52	08/12/16 18:47	1
3 & 4 Methylphenol	**6.3**		1.5	0.33	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		08/09/16 15:52	08/12/16 18:47	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		08/09/16 15:52	08/12/16 18:47	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Nitrophenol	<15		15	5.4	ug/L		08/09/16 15:52	08/12/16 18:47	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		08/09/16 15:52	08/12/16 18:47	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/09/16 15:52	08/12/16 18:47	1
Pentachlorophenol	<15		15	2.9	ug/L		08/09/16 15:52	08/12/16 18:47	1
Phenanthrene	**0.79**		0.73	0.22	ug/L		08/09/16 15:52	08/12/16 18:47	1
Pyrene	<0.73		0.73	0.31	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzaldehyde	<29		29	11	ug/L		08/09/16 15:52	08/12/16 18:47	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/09/16 15:52	08/12/16 18:47	1
Atrazine	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/12/16 18:47	1
1,1'-Biphenyl	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/12/16 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*49*		*30 - 123*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
Nitrobenzene-d5 (Surr)	*50*		*33 - 139*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
Phenol-d5 (Surr)	*35*		*20 - 100*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
Terphenyl-d14 (Surr)	*67*		*42 - 150*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
2,4,6-Tribromophenol (Surr)	*87*		*30 - 150*	*08/09/16 15:52*	*08/12/16 18:47*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**120**		3.7	1.1	ug/L		08/09/16 15:52	08/19/16 11:17	5
Phenol	**62**		18	2.5	ug/L		08/09/16 15:52	08/19/16 11:17	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 15:03	1
alpha-BHC	<0.037	*	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 15:03	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/09/16 12:29	08/18/16 15:03	1
beta-BHC	<0.037		0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 15:03	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:03	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 15:03	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/09/16 12:29	08/18/16 15:03	1
delta-BHC	<0.037	*	0.037	0.0095	ug/L		08/09/16 12:29	08/18/16 15:03	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		08/09/16 12:29	08/18/16 15:03	1

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 15:03	1
gamma-BHC (Lindane)	<0.037	*	0.037	0.0052	ug/L		08/09/16 12:29	08/18/16 15:03	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		08/09/16 12:29	08/18/16 15:03	1
Heptachlor	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:03	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:03	1
Methoxychlor	<0.074		0.074	0.021	ug/L		08/09/16 12:29	08/18/16 15:03	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/18/16 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*08/09/16 12:29*	*08/18/16 15:03*	*1*
Tetrachloro-m-xylene	*107*		*30 - 120*	*08/09/16 12:29*	*08/18/16 15:03*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/09/16 12:29	08/10/16 10:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*57*		*30 - 127*	*08/09/16 12:29*	*08/10/16 10:05*	*1*
DCB Decachlorobiphenyl	*69*		*30 - 150*	*08/09/16 12:29*	*08/10/16 10:05*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.38**		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:05	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:05	1
Arsenic	**0.0042**	**J**	0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:05	1
Barium	**0.68**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:05	1
Cadmium	**0.00094**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:05	1
Calcium	**550**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:05	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:05	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:05	1
Copper	**0.0068**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:05	1
Iron	**0.53**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:08	1
Lead	**0.010**		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:05	1
Magnesium	**0.64**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:05	1
Manganese	**0.014**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:05	1
Nickel	**0.018**		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:05	1
Potassium	**51**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:05	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:05	1
Sodium	**220**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:05	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:05	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:05	1
Zinc	**0.021**		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.24**		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:11	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:11	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:11	1
Barium	**0.65**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:11	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:11	1
Calcium	**530**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:11	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:11	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:11	1
Copper	**0.0033**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:11	1
Iron	<0.20		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:14	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:11	1
Magnesium	**0.071**	**J**	0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:11	1
Manganese	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:11	1
Nickel	**0.017**		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:11	1
Potassium	**50**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:11	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:11	1
Sodium	**210**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:11	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:11	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:11	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 08:56	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**2.8**		1.0	0.18	mg/L			08/10/16 08:46	1
Sulfate	**37**	**B**	5.0	1.5	mg/L			08/16/16 09:12	1
Total Organic Carbon - Duplicates	**43**		2.0	0.53	mg/L			08/15/16 23:06	2
Nitrogen, Nitrate	**0.047**	**J**	0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**26**		5.0	2.5	mg/L			08/09/16 11:10	1
Ammonia	**57**	**B**	5.0	0.71	mg/L		08/16/16 12:55	08/17/16 11:44	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:31	1
Nitrogen, Nitrate Nitrite	**0.047**	**J**	0.10	0.035	mg/L			08/12/16 20:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Lab Sample ID: 500-115433-2

Date Collected: 08/08/16 13:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.1**		5.0	1.7	ug/L			08/11/16 20:16	1
Benzene	**10**		0.50	0.15	ug/L			08/11/16 20:16	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 20:16	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 20:16	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 20:16	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/11/16 20:16	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 20:16	1
Chloroethane	**2.6**		1.0	0.51	ug/L			08/11/16 20:16	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 20:16	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 20:16	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/11/16 20:16	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 20:16	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/11/16 20:16	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 20:16	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 20:16	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,2-Dichlorobenzene	**4.8**		1.0	0.33	ug/L			08/11/16 20:16	1
1,3-Dichlorobenzene	**2.5**		1.0	0.40	ug/L			08/11/16 20:16	1
1,4-Dichlorobenzene	**7.0**		1.0	0.36	ug/L			08/11/16 20:16	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 20:16	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/11/16 20:16	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/11/16 20:16	1
Ethylbenzene	**0.85**		0.50	0.18	ug/L			08/11/16 20:16	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 20:16	1
Isopropylbenzene	**3.0**		1.0	0.39	ug/L			08/11/16 20:16	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 20:16	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/11/16 20:16	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 20:16	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 20:16	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/11/16 20:16	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 20:16	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 20:16	1
Toluene	**0.60**		0.50	0.15	ug/L			08/11/16 20:16	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 20:16	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 20:16	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 20:16	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 20:16	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 20:16	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/11/16 20:16	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 20:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 20:16	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/11/16 20:16	1
Xylenes, Total	**2.1**		1.0	0.22	ug/L			08/11/16 20:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Lab Sample ID: 500-115433-2

Date Collected: 08/08/16 13:00
Matrix: Water
Date Received: 08/08/16 17:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/11/16 20:16*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*08/11/16 20:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*		*08/11/16 20:16*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/11/16 20:16*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**450**		5.0	1.9	ug/L			08/12/16 10:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/12/16 10:09*	*5*
Dibromofluoromethane	*98*		*70 - 120*		*08/12/16 10:09*	*5*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*08/12/16 10:09*	*5*
Toluene-d8 (Surr)	*99*		*75 - 120*		*08/12/16 10:09*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		08/11/16 16:33	08/12/16 18:20	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/11/16 16:33	08/12/16 18:20	1
Acetophenone	<3.7		3.7	0.49	ug/L		08/11/16 16:33	08/12/16 18:20	1
Anthracene	<0.73		0.73	0.24	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		08/11/16 16:33	08/12/16 18:20	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/11/16 16:33	08/12/16 18:20	1
Bis(2-chloroethyl)ether	<1.5	^	1.5	0.21	ug/L		08/11/16 16:33	08/12/16 18:20	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		08/11/16 16:33	08/12/16 18:20	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/11/16 16:33	08/12/16 18:20	1
Carbazole	**0.31**	**J ***	3.7	0.26	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Chloroaniline	<7.3	^	7.3	1.5	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		08/11/16 16:33	08/12/16 18:20	1
Chrysene	<0.37		0.37	0.050	ug/L		08/11/16 16:33	08/12/16 18:20	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		08/11/16 16:33	08/12/16 18:20	1
Dibenzofuran	**0.26**	**J**	1.5	0.19	ug/L		08/11/16 16:33	08/12/16 18:20	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/11/16 16:33	08/12/16 18:20	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/11/16 16:33	08/12/16 18:20	1
Di-n-butyl phthalate	**0.94**	**J**	3.7	0.54	ug/L		08/11/16 16:33	08/12/16 18:20	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,6-Dinitrotoluene	**2.2**		0.37	0.054	ug/L		08/11/16 16:33	08/12/16 18:20	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/11/16 16:33	08/12/16 18:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Lab Sample ID: 500-115433-2
Date Collected: 08/08/16 13:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		08/11/16 16:33	08/12/16 18:20	1
Fluorene	**0.46**	**J**	0.73	0.18	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/11/16 16:33	08/12/16 18:20	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.055	ug/L		08/11/16 16:33	08/12/16 18:20	1
Isophorone	<1.5		1.5	0.28	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Methylphenol	<1.5		1.5	0.22	ug/L		08/11/16 16:33	08/12/16 18:20	1
3 & 4 Methylphenol	**6.7**		1.5	0.33	ug/L		08/11/16 16:33	08/12/16 18:20	1
Naphthalene	**44**		0.73	0.23	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		08/11/16 16:33	08/12/16 18:20	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		08/11/16 16:33	08/12/16 18:20	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Nitrophenol	<15		15	5.4	ug/L		08/11/16 16:33	08/12/16 18:20	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		08/11/16 16:33	08/12/16 18:20	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/11/16 16:33	08/12/16 18:20	1
Pentachlorophenol	<15		15	2.9	ug/L		08/11/16 16:33	08/12/16 18:20	1
Phenanthrene	**0.26**	**J**	0.73	0.22	ug/L		08/11/16 16:33	08/12/16 18:20	1
Phenol	<3.7		3.7	0.49	ug/L		08/11/16 16:33	08/12/16 18:20	1
Pyrene	<0.73		0.73	0.31	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzaldehyde	<29		29	11	ug/L		08/11/16 16:33	08/12/16 18:20	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/11/16 16:33	08/12/16 18:20	1
Atrazine	<3.7		3.7	0.46	ug/L		08/11/16 16:33	08/12/16 18:20	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		08/11/16 16:33	08/12/16 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*57*		*30 - 123*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
Nitrobenzene-d5 (Surr)	*61*		*33 - 139*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
Phenol-d5 (Surr)	*40*		*20 - 100*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
Terphenyl-d14 (Surr)	*89*		*42 - 150*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
2,4,6-Tribromophenol (Surr)	*106*		*30 - 150*	*08/11/16 16:33*	*08/12/16 18:20*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**76**		7.3	0.24	ug/L		08/11/16 16:33	08/19/16 15:17	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 15:22	1
alpha-BHC	<0.037	*	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 15:22	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		08/09/16 12:29	08/18/16 15:22	1
beta-BHC	<0.037		0.037	0.0093	ug/L		08/09/16 12:29	08/18/16 15:22	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Date Collected: 08/08/16 13:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 15:22	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		08/09/16 12:29	08/18/16 15:22	1
delta-BHC	<0.037	*	0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 15:22	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 15:22	1
gamma-BHC (Lindane)	<0.037	*	0.037	0.0051	ug/L		08/09/16 12:29	08/18/16 15:22	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/09/16 12:29	08/18/16 15:22	1
Heptachlor	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:22	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:22	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/09/16 12:29	08/18/16 15:22	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/18/16 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*08/09/16 12:29*	*08/18/16 15:22*	*1*
Tetrachloro-m-xylene	*94*		*30 - 120*	*08/09/16 12:29*	*08/18/16 15:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/09/16 12:29	08/10/16 10:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*30 - 127*	*08/09/16 12:29*	*08/10/16 10:20*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*08/09/16 12:29*	*08/10/16 10:20*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:16	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:16	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:16	1
Barium	**0.30**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:16	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:16	1
Calcium	**90**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:16	1
Chromium	**0.0029**	**J**	0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:16	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:16	1
Copper	**0.0027**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:16	1
Iron	**33**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:16	1
Magnesium	**46**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Lab Sample ID: 500-115433-2
Date Collected: 08/08/16 13:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.23**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:16	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:16	1
Potassium	**32**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:16	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:16	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:16	1
Sodium	**160**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:16	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:16	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:16	1
Zinc	**0.0098**	**J**	0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:20	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:20	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:20	1
Barium	**0.28**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:20	1
Cadmium	**0.00096**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:20	1
Calcium	**90**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:20	1
Chromium	**0.0029**	**J**	0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:20	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:20	1
Copper	<0.010		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:20	1
Iron	**31**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:31	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:20	1
Magnesium	**45**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:20	1
Manganese	**0.22**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:20	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:20	1
Potassium	**31**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:20	1
Selenium	**0.0052**	**J**	0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:20	1
Sodium	**160**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:20	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:20	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:20	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:07	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/10/16 08:57	1
Sulfate	<5.0		5.0	1.5	mg/L			08/16/16 09:13	1
Total Organic Carbon - Duplicates	**18**		1.0	0.27	mg/L			08/15/16 23:22	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			08/09/16 11:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016
Date Collected: 08/08/16 13:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-2
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**42**	**B**	2.0	0.28	mg/L		08/16/16 12:55	08/17/16 11:47	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:33	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/12/16 20:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016

Lab Sample ID: 500-115433-3

Date Collected: 08/08/16 13:30
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			08/11/16 20:45	10
Benzene	**160**		5.0	1.5	ug/L			08/11/16 20:45	10
Bromodichloromethane	<10		10	3.7	ug/L			08/11/16 20:45	10
Bromoform	<10		10	4.8	ug/L			08/11/16 20:45	10
Bromomethane	<20		20	8.0	ug/L			08/11/16 20:45	10
Carbon disulfide	<20		20	4.5	ug/L			08/11/16 20:45	10
Carbon tetrachloride	<10		10	3.8	ug/L			08/11/16 20:45	10
Chlorobenzene	**5.7**	**J**	10	3.9	ug/L			08/11/16 20:45	10
Chloroethane	<10		10	5.1	ug/L			08/11/16 20:45	10
Chloroform	<10		10	3.7	ug/L			08/11/16 20:45	10
Chloromethane	<10		10	3.2	ug/L			08/11/16 20:45	10
cis-1,2-Dichloroethene	<10		10	4.1	ug/L			08/11/16 20:45	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			08/11/16 20:45	10
Cyclohexane	<10		10	4.9	ug/L			08/11/16 20:45	10
Dibromochloromethane	<10		10	4.9	ug/L			08/11/16 20:45	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			08/11/16 20:45	10
1,2-Dibromoethane	<10		10	3.9	ug/L			08/11/16 20:45	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			08/11/16 20:45	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			08/11/16 20:45	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			08/11/16 20:45	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			08/11/16 20:45	10
1,1-Dichloroethane	<10		10	4.1	ug/L			08/11/16 20:45	10
1,2-Dichloroethane	<10		10	3.9	ug/L			08/11/16 20:45	10
1,1-Dichloroethene	<10		10	3.9	ug/L			08/11/16 20:45	10
1,2-Dichloropropane	<10		10	4.3	ug/L			08/11/16 20:45	10
Ethylbenzene	**34**		5.0	1.8	ug/L			08/11/16 20:45	10
2-Hexanone	<50		50	16	ug/L			08/11/16 20:45	10
Isopropylbenzene	<10		10	3.9	ug/L			08/11/16 20:45	10
Methyl acetate	<50		50	20	ug/L			08/11/16 20:45	10
Methylcyclohexane	<10		10	3.2	ug/L			08/11/16 20:45	10
Methylene Chloride	<50		50	16	ug/L			08/11/16 20:45	10
Methyl Ethyl Ketone	<50		50	21	ug/L			08/11/16 20:45	10
methyl isobutyl ketone	<50		50	22	ug/L			08/11/16 20:45	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			08/11/16 20:45	10
Styrene	<10		10	3.9	ug/L			08/11/16 20:45	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			08/11/16 20:45	10
Tetrachloroethene	<10		10	3.7	ug/L			08/11/16 20:45	10
Toluene	**180**		5.0	1.5	ug/L			08/11/16 20:45	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			08/11/16 20:45	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			08/11/16 20:45	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			08/11/16 20:45	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			08/11/16 20:45	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			08/11/16 20:45	10
Trichloroethene	<5.0		5.0	1.6	ug/L			08/11/16 20:45	10
Trichlorofluoromethane	<10		10	4.3	ug/L			08/11/16 20:45	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			08/11/16 20:45	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			08/11/16 20:45	10
Xylenes, Total	**220**		10	2.2	ug/L			08/11/16 20:45	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016

Lab Sample ID: 500-115433-3

Date Collected: 08/08/16 13:30

Matrix: Water

Date Received: 08/08/16 17:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/11/16 20:45*	*10*
Dibromofluoromethane	*95*		*70 - 120*		*08/11/16 20:45*	*10*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*		*08/11/16 20:45*	*10*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/11/16 20:45*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**18**		0.76	0.24	ug/L		08/09/16 15:52	08/10/16 17:06	1
Acenaphthylene	**2.7**		0.76	0.20	ug/L		08/09/16 15:52	08/10/16 17:06	1
Acetophenone	**1.9**	**J**	3.8	0.51	ug/L		08/09/16 15:52	08/10/16 17:06	1
Anthracene	**12**		0.76	0.25	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[a]anthracene	**0.64**		0.15	0.043	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[b]fluoranthene	**0.39**		0.15	0.061	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[g,h,i]perylene	<0.76		0.76	0.29	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		08/09/16 15:52	08/10/16 17:06	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		08/09/16 15:52	08/10/16 17:06	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		08/09/16 15:52	08/10/16 17:06	1
Bis(2-ethylhexyl) phthalate	<7.6		7.6	1.3	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		08/09/16 15:52	08/10/16 17:06	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Chloroaniline	<7.6	*	7.6	1.5	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Chloro-3-methylphenol	<7.6		7.6	1.8	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		08/09/16 15:52	08/10/16 17:06	1
Chrysene	**0.56**		0.38	0.052	ug/L		08/09/16 15:52	08/10/16 17:06	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		08/09/16 15:52	08/10/16 17:06	1
Dibenzofuran	**34**		1.5	0.20	ug/L		08/09/16 15:52	08/10/16 17:06	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4-Dichlorophenol	<7.6		7.6	2.0	ug/L		08/09/16 15:52	08/10/16 17:06	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		08/09/16 15:52	08/10/16 17:06	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		08/09/16 15:52	08/10/16 17:06	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		08/09/16 15:52	08/10/16 17:06	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4-Dinitrotoluene	<0.76		0.76	0.19	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,6-Dinitrotoluene	<0.38		0.38	0.056	ug/L		08/09/16 15:52	08/10/16 17:06	1
Di-n-octyl phthalate	<7.6		7.6	0.80	ug/L		08/09/16 15:52	08/10/16 17:06	1
Fluoranthene	**7.8**		0.76	0.35	ug/L		08/09/16 15:52	08/10/16 17:06	1
Fluorene	**49**		0.76	0.19	ug/L		08/09/16 15:52	08/10/16 17:06	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		08/09/16 15:52	08/10/16 17:06	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		08/09/16 15:52	08/10/16 17:06	1
Hexachlorocyclopentadiene	<15	*	15	4.9	ug/L		08/09/16 15:52	08/10/16 17:06	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		08/09/16 15:52	08/10/16 17:06	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		08/09/16 15:52	08/10/16 17:06	1
Isophorone	<1.5		1.5	0.29	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Methylphenol	**27**		1.5	0.23	ug/L		08/09/16 15:52	08/10/16 17:06	1
3 & 4 Methylphenol	**22**		1.5	0.34	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Nitroaniline	<3.8		3.8	0.98	ug/L		08/09/16 15:52	08/10/16 17:06	1

Client Sample ID: MW-03-GW-08082016

Lab Sample ID: 500-115433-3

Date Collected: 08/08/16 13:30

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	<7.6		7.6	1.4	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Nitroaniline	<7.6		7.6	1.3	ug/L		08/09/16 15:52	08/10/16 17:06	1
Nitrobenzene	<0.76		0.76	0.34	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Nitrophenol	<7.6		7.6	1.9	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Nitrophenol	<15		15	5.7	ug/L		08/09/16 15:52	08/10/16 17:06	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		08/09/16 15:52	08/10/16 17:06	1
N-Nitrosodiphenylamine	<0.76		0.76	0.28	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		08/09/16 15:52	08/10/16 17:06	1
Pentachlorophenol	<15		15	3.0	ug/L		08/09/16 15:52	08/10/16 17:06	1
Phenol	**4.9**		3.8	0.51	ug/L		08/09/16 15:52	08/10/16 17:06	1
Pyrene	**6.3**		0.76	0.32	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4,5-Trichlorophenol	<7.6		7.6	2.0	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzaldehyde	<30		30	12	ug/L		08/09/16 15:52	08/10/16 17:06	1
Caprolactam	<7.6		7.6	1.1	ug/L		08/09/16 15:52	08/10/16 17:06	1
Atrazine	<3.8		3.8	0.48	ug/L		08/09/16 15:52	08/10/16 17:06	1
1,1'-Biphenyl	**20**		3.8	0.28	ug/L		08/09/16 15:52	08/10/16 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
Nitrobenzene-d5 (Surr)	*95*		*33 - 139*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
Phenol-d5 (Surr)	*62*		*20 - 100*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
Terphenyl-d14 (Surr)	*119*		*42 - 150*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*30 - 150*	*08/09/16 15:52*	*08/10/16 17:06*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	**120**		19	1.3	ug/L		08/09/16 15:52	08/19/16 14:24	5
2,4-Dimethylphenol	**68**		38	6.9	ug/L		08/09/16 15:52	08/19/16 14:24	5
Phenanthrene	**62**		3.8	1.1	ug/L		08/09/16 15:52	08/19/16 14:24	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**330**		38	1.2	ug/L		08/09/16 15:52	08/19/16 13:57	25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2000**		38	12	ug/L		08/09/16 15:52	08/19/16 14:51	50

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		08/09/16 12:29	08/18/16 15:41	1
alpha-BHC	<0.038	*	0.038	0.0025	ug/L		08/09/16 12:29	08/18/16 15:41	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		08/09/16 12:29	08/18/16 15:41	1
beta-BHC	<0.038		0.038	0.0098	ug/L		08/09/16 12:29	08/18/16 15:41	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		08/09/16 12:29	08/18/16 15:41	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		08/09/16 12:29	08/18/16 15:41	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		08/09/16 12:29	08/18/16 15:41	1
delta-BHC	<0.038	*	0.038	0.0099	ug/L		08/09/16 12:29	08/18/16 15:41	1
Dieldrin	<0.038		0.038	0.012	ug/L		08/09/16 12:29	08/18/16 15:41	1

Client Sample ID: MW-03-GW-08082016

Lab Sample ID: 500-115433-3

Date Collected: 08/08/16 13:30

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	<0.038		0.038	0.0039	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endrin	<0.038		0.038	0.014	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endrin ketone	<0.038		0.038	0.016	ug/L		08/09/16 12:29	08/18/16 15:41	1
gamma-BHC (Lindane)	<0.038	*	0.038	0.0054	ug/L		08/09/16 12:29	08/18/16 15:41	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		08/09/16 12:29	08/18/16 15:41	1
Heptachlor	<0.038		0.038	0.013	ug/L		08/09/16 12:29	08/18/16 15:41	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		08/09/16 12:29	08/18/16 15:41	1
Methoxychlor	<0.077		0.077	0.022	ug/L		08/09/16 12:29	08/18/16 15:41	1
Toxaphene	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/18/16 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*08/09/16 12:29*	*08/18/16 15:41*	*1*
Tetrachloro-m-xylene	*112*		*30 - 120*	*08/09/16 12:29*	*08/18/16 15:41*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1221	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1232	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1242	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1248	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1254	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1260	<0.38		0.38	0.067	ug/L		08/09/16 12:29	08/10/16 10:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*08/09/16 12:29*	*08/10/16 10:35*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 150*	*08/09/16 12:29*	*08/10/16 10:35*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:32	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:32	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:32	1
Barium	**0.89**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:32	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:32	1
Calcium	**65**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:32	1
Chromium	**0.0024**	**J**	0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:32	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:32	1
Copper	**0.0033**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:32	1
Iron	**6.4**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:35	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:32	1
Magnesium	**75**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:32	1
Manganese	**0.18**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:32	1
Nickel	**0.0048**	**J**	0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:32	1
Potassium	**56**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:32	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:32	1

Client Sample ID: MW-03-GW-08082016

Lab Sample ID: 500-115433-3

Date Collected: 08/08/16 13:30

Matrix: Water

Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:32	1
Sodium	**250**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:32	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:32	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:32	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:38	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:38	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:38	1
Barium	**0.88**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:38	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:38	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:38	1
Calcium	**66**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:38	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:38	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:38	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:38	1
Iron	**5.5**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:38	1
Magnesium	**75**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:38	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:38	1
Nickel	**0.0043**	**J**	0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:38	1
Potassium	**55**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:38	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:38	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:38	1
Sodium	**250**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:38	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:38	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:38	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:10	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/10/16 09:00	1
Sulfate	**10**	**B**	5.0	1.5	mg/L			08/16/16 09:17	1
Total Organic Carbon - Duplicates	**21**		1.0	0.27	mg/L			08/16/16 05:58	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**8.0**		5.0	2.5	mg/L			08/09/16 11:14	1
Ammonia	**38**	**B**	2.0	0.28	mg/L		08/16/16 12:55	08/17/16 11:50	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:33	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/12/16 20:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**15**		5.0	1.7	ug/L			08/11/16 21:14	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 21:14	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 21:14	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 21:14	1
Carbon disulfide	**28**		2.0	0.45	ug/L			08/11/16 21:14	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 21:14	1
Chlorobenzene	**0.68**	**J**	1.0	0.39	ug/L			08/11/16 21:14	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/11/16 21:14	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 21:14	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 21:14	1
cis-1,2-Dichloroethene	**6.3**		1.0	0.41	ug/L			08/11/16 21:14	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 21:14	1
Cyclohexane	**1.3**		1.0	0.49	ug/L			08/11/16 21:14	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 21:14	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 21:14	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/11/16 21:14	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/11/16 21:14	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/11/16 21:14	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 21:14	1
1,1-Dichloroethane	**22**		1.0	0.41	ug/L			08/11/16 21:14	1
1,2-Dichloroethane	**30**		1.0	0.39	ug/L			08/11/16 21:14	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
1,2-Dichloropropane	**1.3**		1.0	0.43	ug/L			08/11/16 21:14	1
Ethylbenzene	**4.9**		0.50	0.18	ug/L			08/11/16 21:14	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 21:14	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 21:14	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/11/16 21:14	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 21:14	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 21:14	1
methyl isobutyl ketone	**14**		5.0	2.2	ug/L			08/11/16 21:14	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 21:14	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 21:14	1
Toluene	**19**		0.50	0.15	ug/L			08/11/16 21:14	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 21:14	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 21:14	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 21:14	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 21:14	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 21:14	1
Trichloroethene	**1.0**		0.50	0.16	ug/L			08/11/16 21:14	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 21:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 21:14	1
Vinyl chloride	**5.6**		0.50	0.20	ug/L			08/11/16 21:14	1
Xylenes, Total	**4.3**		1.0	0.22	ug/L			08/11/16 21:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20
Matrix: Water
Date Received: 08/08/16 17:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/11/16 21:14*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*08/11/16 21:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*08/11/16 21:14*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*08/11/16 21:14*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**510**		5.0	1.5	ug/L			08/11/16 21:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*08/11/16 21:42*	*10*
Dibromofluoromethane	*98*		*70 - 120*		*08/11/16 21:42*	*10*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*		*08/11/16 21:42*	*10*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/11/16 21:42*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		08/09/16 15:52	08/10/16 17:34	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/09/16 15:52	08/10/16 17:34	1
Acetophenone	<3.7		3.7	0.49	ug/L		08/09/16 15:52	08/10/16 17:34	1
Anthracene	<0.73		0.73	0.24	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[a]pyrene	<0.15	*	0.15	0.072	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[b]fluoranthene	<0.15	*	0.15	0.059	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[g,h,i]perylene	<0.73	*	0.73	0.27	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[k]fluoranthene	<0.15	*	0.15	0.047	ug/L		08/09/16 15:52	08/10/16 17:34	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/10/16 17:34	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/10/16 17:34	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.39	ug/L		08/09/16 15:52	08/10/16 17:34	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/09/16 15:52	08/10/16 17:34	1
Carbazole	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Chloroaniline	<7.3	*	7.3	1.5	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/10/16 17:34	1
Chrysene	<0.37		0.37	0.050	ug/L		08/09/16 15:52	08/10/16 17:34	1
Dibenz(a,h)anthracene	<0.22	*	0.22	0.037	ug/L		08/09/16 15:52	08/10/16 17:34	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		08/09/16 15:52	08/10/16 17:34	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/10/16 17:34	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dimethylphenol	**25**		7.3	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/09/16 15:52	08/10/16 17:34	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		08/09/16 15:52	08/10/16 17:34	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,6-Dinitrotoluene	<0.37		0.37	0.054	ug/L		08/09/16 15:52	08/10/16 17:34	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/09/16 15:52	08/10/16 17:34	1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/10/16 17:34	1
Fluorene	<0.73		0.73	0.18	ug/L		08/09/16 15:52	08/10/16 17:34	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		08/09/16 15:52	08/10/16 17:34	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/09/16 15:52	08/10/16 17:34	1
Hexachlorocyclopentadiene	<15	*	15	4.7	ug/L		08/09/16 15:52	08/10/16 17:34	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/09/16 15:52	08/10/16 17:34	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.055	ug/L		08/09/16 15:52	08/10/16 17:34	1
Isophorone	<1.5		1.5	0.27	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Methylnaphthalene	**0.25**	**J**	1.5	0.048	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Methylphenol	**7.6**		1.5	0.22	ug/L		08/09/16 15:52	08/10/16 17:34	1
3 & 4 Methylphenol	**8.0**		1.5	0.33	ug/L		08/09/16 15:52	08/10/16 17:34	1
Naphthalene	**1.5**		0.73	0.23	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		08/09/16 15:52	08/10/16 17:34	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		08/09/16 15:52	08/10/16 17:34	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Nitrophenol	<15		15	5.4	ug/L		08/09/16 15:52	08/10/16 17:34	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		08/09/16 15:52	08/10/16 17:34	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/09/16 15:52	08/10/16 17:34	1
Pentachlorophenol	<15		15	2.9	ug/L		08/09/16 15:52	08/10/16 17:34	1
Phenanthrene	<0.73		0.73	0.22	ug/L		08/09/16 15:52	08/10/16 17:34	1
Phenol	**1.7**	**J**	3.7	0.49	ug/L		08/09/16 15:52	08/10/16 17:34	1
Pyrene	<0.73		0.73	0.31	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzaldehyde	<29		29	11	ug/L		08/09/16 15:52	08/10/16 17:34	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/09/16 15:52	08/10/16 17:34	1
Atrazine	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/10/16 17:34	1
1,1'-Biphenyl	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/10/16 17:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*30 - 123*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
2-Fluorophenol (Surr)	*77*		*30 - 110*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
Nitrobenzene-d5 (Surr)	*79*		*33 - 139*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
Phenol-d5 (Surr)	*59*		*20 - 100*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
Terphenyl-d14 (Surr)	*118*		*42 - 150*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*30 - 150*	*08/09/16 15:52*	*08/10/16 17:34*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 16:19	1
alpha-BHC	<0.037	*	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 16:19	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		08/09/16 12:29	08/18/16 16:19	1
beta-BHC	<0.037		0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 16:19	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:19	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 16:19	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		08/09/16 12:29	08/18/16 16:19	1
delta-BHC	<0.037	*	0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 16:19	1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 16:19	1
gamma-BHC (Lindane)	<0.037	*	0.037	0.0051	ug/L		08/09/16 12:29	08/18/16 16:19	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/09/16 12:29	08/18/16 16:19	1
Heptachlor	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:19	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:19	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/09/16 12:29	08/18/16 16:19	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/18/16 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*08/09/16 12:29*	*08/18/16 16:19*	*1*
Tetrachloro-m-xylene	*365*	*X*	*30 - 120*	*08/09/16 12:29*	*08/18/16 16:19*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1242	**0.69**		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/09/16 12:29	08/10/16 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*78*		*30 - 127*	*08/09/16 12:29*	*08/10/16 16:02*	*1*
DCB Decachlorobiphenyl	*74*		*30 - 150*	*08/09/16 12:29*	*08/10/16 16:02*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:43	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:43	1
Arsenic	**0.0083**	**J**	0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:43	1
Barium	**0.068**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:43	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:43	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:43	1
Calcium	**91**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:43	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:43	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:43	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:43	1
Iron	<0.20		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:46	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:43	1
Magnesium	**31**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:43	1
Manganese	**0.42**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:43	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:43	1
Potassium	**14**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:43	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:43	1
Sodium	**330**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:43	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:43	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:43	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:48	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:48	1
Arsenic	**0.0098**	**J**	0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:48	1
Barium	**0.069**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:48	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:48	1
Calcium	**92**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:48	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:48	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:48	1
Iron	<0.20		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:51	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:48	1
Magnesium	**33**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:48	1
Manganese	**0.40**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:48	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:48	1
Potassium	**15**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:48	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:48	1
Sodium	**350**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:48	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:48	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**12**		1.0	0.18	mg/L			08/10/16 09:04	1
Sulfate	**250**	**B**	50	15	mg/L			08/17/16 06:47	10
Total Organic Carbon - Duplicates	**19**		1.0	0.27	mg/L			08/15/16 23:55	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	<5.0		5.0	2.5	mg/L			08/09/16 11:16	1
Ammonia	**9.6**	**B**	1.0	0.14	mg/L		08/16/16 12:55	08/17/16 11:53	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:34	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 20:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**11**		5.0	1.7	ug/L			08/11/16 22:10	1
Benzene	**0.25**	**J**	0.50	0.15	ug/L			08/11/16 22:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 22:10	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 22:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 22:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/11/16 22:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 22:10	1
Chlorobenzene	**4.2**		1.0	0.39	ug/L			08/11/16 22:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/11/16 22:10	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 22:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 22:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/11/16 22:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 22:10	1
Cyclohexane	**1.8**		1.0	0.49	ug/L			08/11/16 22:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 22:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 22:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/11/16 22:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/11/16 22:10	1
1,4-Dichlorobenzene	**2.1**		1.0	0.36	ug/L			08/11/16 22:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 22:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/11/16 22:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/11/16 22:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/11/16 22:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 22:10	1
Isopropylbenzene	**40**		1.0	0.39	ug/L			08/11/16 22:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 22:10	1
Methylcyclohexane	**0.55**	**J**	1.0	0.32	ug/L			08/11/16 22:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 22:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 22:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/11/16 22:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 22:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 22:10	1
Toluene	<0.50		0.50	0.15	ug/L			08/11/16 22:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 22:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 22:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 22:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 22:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 22:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/11/16 22:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 22:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 22:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/11/16 22:10	1
Xylenes, Total	**0.64**	**J**	1.0	0.22	ug/L			08/11/16 22:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40
Matrix: Water
Date Received: 08/08/16 17:45

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/11/16 22:10*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*08/11/16 22:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*08/11/16 22:10*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/11/16 22:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.29**	**J**	0.76	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
Acenaphthylene	<0.76		0.76	0.20	ug/L		08/09/16 15:52	08/12/16 19:13	1
Acetophenone	<3.8		3.8	0.50	ug/L		08/09/16 15:52	08/12/16 19:13	1
Anthracene	<0.76		0.76	0.25	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[g,h,i]perylene	<0.76		0.76	0.28	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		08/09/16 15:52	08/12/16 19:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/12/16 19:13	1
Bis(2-chloroethyl)ether	<1.5	^	1.5	0.22	ug/L		08/09/16 15:52	08/12/16 19:13	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	7.6	1.3	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		08/09/16 15:52	08/12/16 19:13	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		08/09/16 15:52	08/12/16 19:13	1
Carbazole	<3.8		3.8	0.27	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Chloroaniline	<7.6	^ *	7.6	1.5	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Chloro-3-methylphenol	<7.6		7.6	1.7	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Chloronaphthalene	**0.22**	**J**	1.5	0.18	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		08/09/16 15:52	08/12/16 19:13	1
Chrysene	<0.38		0.38	0.052	ug/L		08/09/16 15:52	08/12/16 19:13	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		08/09/16 15:52	08/12/16 19:13	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		08/09/16 15:52	08/12/16 19:13	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dichlorophenol	<7.6		7.6	2.0	ug/L		08/09/16 15:52	08/12/16 19:13	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dimethylphenol	<7.6		7.6	1.4	ug/L		08/09/16 15:52	08/12/16 19:13	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		08/09/16 15:52	08/12/16 19:13	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		08/09/16 15:52	08/12/16 19:13	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dinitrotoluene	<0.76		0.76	0.19	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,6-Dinitrotoluene	<0.38		0.38	0.056	ug/L		08/09/16 15:52	08/12/16 19:13	1
Di-n-octyl phthalate	<7.6		7.6	0.79	ug/L		08/09/16 15:52	08/12/16 19:13	1
Fluoranthene	<0.76		0.76	0.34	ug/L		08/09/16 15:52	08/12/16 19:13	1
Fluorene	<0.76		0.76	0.18	ug/L		08/09/16 15:52	08/12/16 19:13	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		08/09/16 15:52	08/12/16 19:13	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		08/09/16 15:52	08/12/16 19:13	1
Hexachlorocyclopentadiene	<15	*	15	4.8	ug/L		08/09/16 15:52	08/12/16 19:13	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		08/09/16 15:52	08/12/16 19:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		08/09/16 15:52	08/12/16 19:13	1
Isophorone	<1.5		1.5	0.28	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Methylnaphthalene	**0.46**	**J**	1.5	0.049	ug/L		08/09/16 15:52	08/12/16 19:13	1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		08/09/16 15:52	08/12/16 19:13	1
Naphthalene	**0.33**	**J**	0.76	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		08/09/16 15:52	08/12/16 19:13	1
3-Nitroaniline	<7.6		7.6	1.4	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Nitroaniline	<7.6		7.6	1.3	ug/L		08/09/16 15:52	08/12/16 19:13	1
Nitrobenzene	<0.76		0.76	0.34	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Nitrophenol	<7.6		7.6	1.9	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Nitrophenol	<15		15	5.6	ug/L		08/09/16 15:52	08/12/16 19:13	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		08/09/16 15:52	08/12/16 19:13	1
N-Nitrosodiphenylamine	**1.0**		0.76	0.28	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,2'-oxybis[1-chloropropane]	**0.32**	**J**	1.5	0.29	ug/L		08/09/16 15:52	08/12/16 19:13	1
Pentachlorophenol	<15		15	3.0	ug/L		08/09/16 15:52	08/12/16 19:13	1
Phenanthrene	<0.76		0.76	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
Phenol	<3.8		3.8	0.51	ug/L		08/09/16 15:52	08/12/16 19:13	1
Pyrene	<0.76		0.76	0.32	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4,5-Trichlorophenol	<7.6		7.6	1.9	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzaldehyde	<30		30	11	ug/L		08/09/16 15:52	08/12/16 19:13	1
Caprolactam	<7.6		7.6	1.1	ug/L		08/09/16 15:52	08/12/16 19:13	1
Atrazine	<3.8		3.8	0.47	ug/L		08/09/16 15:52	08/12/16 19:13	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		08/09/16 15:52	08/12/16 19:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
2-Fluorophenol (Surr)	*73*		*30 - 110*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
Nitrobenzene-d5 (Surr)	*76*		*33 - 139*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
Phenol-d5 (Surr)	*49*		*20 - 100*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
2,4,6-Tribromophenol (Surr)	*107*		*30 - 150*	*08/09/16 15:52*	*08/12/16 19:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 16:00	1
alpha-BHC	<0.037	*	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 16:00	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/09/16 12:29	08/18/16 16:00	1
beta-BHC	<0.037		0.037	0.0095	ug/L		08/09/16 12:29	08/18/16 16:00	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:00	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 16:00	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/09/16 12:29	08/18/16 16:00	1
delta-BHC	<0.037	*	0.037	0.0096	ug/L		08/09/16 12:29	08/18/16 16:00	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 16:00	1
gamma-BHC (Lindane)	<0.037	*	0.037	0.0052	ug/L		08/09/16 12:29	08/18/16 16:00	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		08/09/16 12:29	08/18/16 16:00	1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:00	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:00	1
Methoxychlor	<0.074		0.074	0.021	ug/L		08/09/16 12:29	08/18/16 16:00	1
Toxaphene	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/18/16 16:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*57*		*30 - 143*	*08/09/16 12:29*	*08/18/16 16:00*	*1*
Tetrachloro-m-xylene	*85*		*30 - 120*	*08/09/16 12:29*	*08/18/16 16:00*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1221	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1232	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1242	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1248	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1254	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/09/16 12:29	08/10/16 11:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 127*	*08/09/16 12:29*	*08/10/16 11:06*	*1*
DCB Decachlorobiphenyl	*69*		*30 - 150*	*08/09/16 12:29*	*08/10/16 11:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.078**	**J**	0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:53	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:53	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:53	1
Barium	**0.85**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:53	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:53	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:53	1
Calcium	**63**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:53	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:53	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:53	1
Copper	**0.0035**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:53	1
Iron	**20**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:56	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:53	1
Magnesium	**80**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:53	1
Manganese	**0.055**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:53	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:53	1
Potassium	**42**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:53	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:53	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:53	1
Sodium	**150**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:53	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:53	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:53	1
Zinc	**0.0099**	**J**	0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:58	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:58	1
Barium	**0.89**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:58	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:58	1
Calcium	**68**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:58	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:58	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:58	1
Copper	**0.0024**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:58	1
Iron	**21**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 18:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:58	1
Magnesium	**84**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:58	1
Manganese	**0.057**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:58	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:58	1
Potassium	**44**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:58	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:58	1
Sodium	**150**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:58	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:58	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:58	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:16	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/10/16 09:08	1
Sulfate	**2.8**	**J B**	5.0	1.5	mg/L			08/17/16 06:48	1
Total Organic Carbon - Duplicates	**19**		1.0	0.27	mg/L			08/16/16 00:11	1
Nitrogen, Nitrate	**0.42**		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**39**		5.0	2.5	mg/L			08/09/16 11:18	1
Ammonia	**54**	**B**	5.0	0.71	mg/L		08/16/16 12:55	08/17/16 12:54	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:34	1
Nitrogen, Nitrate Nitrite	**0.42**		0.10	0.035	mg/L			08/16/16 20:08	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	LCS or LCSD is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits

GC Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

GC/MS VOA

Analysis Batch: 347370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	8260B	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	8260B	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	8260B	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	8260B	
500-115433-4 - DL	MW-04-GW-08082016	Total/NA	Water	8260B	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	8260B	
MB 500-347370/6	Method Blank	Total/NA	Water	8260B	
LCS 500-347370/12	Lab Control Sample	Total/NA	Water	8260B	
500-115433-5 MS	MW-05-GW-08082016	Total/NA	Water	8260B	
500-115433-5 MSD	MW-05-GW-08082016	Total/NA	Water	8260B	

Analysis Batch: 347520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-2 - DL	MW-02-GW-08082016	Total/NA	Water	8260B	
MB 500-347520/6	Method Blank	Total/NA	Water	8260B	
LCS 500-347520/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 347168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	3510C	
500-115433-1 - DL	MW-01-GW-08082016	Total/NA	Water	3510C	
500-115433-3 - DL	MW-03-GW-08082016	Total/NA	Water	3510C	
500-115433-3 - DL3	MW-03-GW-08082016	Total/NA	Water	3510C	
500-115433-3 - DL2	MW-03-GW-08082016	Total/NA	Water	3510C	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	3510C	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	3510C	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	3510C	
MB 500-347168/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-347168/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-347168/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 347248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-3	MW-03-GW-08082016	Total/NA	Water	8270D	347168
500-115433-4	MW-04-GW-08082016	Total/NA	Water	8270D	347168
MB 500-347168/1-A	Method Blank	Total/NA	Water	8270D	347168
LCS 500-347168/2-A	Lab Control Sample	Total/NA	Water	8270D	347168
LCSD 500-347168/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	347168

Prep Batch: 347480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-2 - DL	MW-02-GW-08082016	Total/NA	Water	3510C	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	3510C	
MB 500-347480/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-347480/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-347480/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC/MS Semi VOA (Continued)

Analysis Batch: 347565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	8270D	347168
500-115433-2	MW-02-GW-08082016	Total/NA	Water	8270D	347480
500-115433-5	MW-05-GW-08082016	Total/NA	Water	8270D	347168
MB 500-347480/1-A	Method Blank	Total/NA	Water	8270D	347480
LCS 500-347480/2-A	Lab Control Sample	Total/NA	Water	8270D	347480
LCSD 500-347480/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	347480

Analysis Batch: 348460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1 - DL	MW-01-GW-08082016	Total/NA	Water	8270D	347168
500-115433-2 - DL	MW-02-GW-08082016	Total/NA	Water	8270D	347480
500-115433-3 - DL2	MW-03-GW-08082016	Total/NA	Water	8270D	347168
500-115433-3 - DL	MW-03-GW-08082016	Total/NA	Water	8270D	347168
500-115433-3 - DL3	MW-03-GW-08082016	Total/NA	Water	8270D	347168

GC Semi VOA

Prep Batch: 347128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	3510C	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	3510C	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	3510C	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	3510C	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	3510C	
MB 500-347128/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-347128/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-347128/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-347128/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-347128/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 347264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	8082A	347128
500-115433-2	MW-02-GW-08082016	Total/NA	Water	8082A	347128
500-115433-3	MW-03-GW-08082016	Total/NA	Water	8082A	347128
500-115433-4	MW-04-GW-08082016	Total/NA	Water	8082A	347128
500-115433-5	MW-05-GW-08082016	Total/NA	Water	8082A	347128
MB 500-347128/1-A	Method Blank	Total/NA	Water	8082A	347128
LCS 500-347128/4-A	Lab Control Sample	Total/NA	Water	8082A	347128
LCSD 500-347128/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	347128

Analysis Batch: 348276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	8081B	347128
500-115433-2	MW-02-GW-08082016	Total/NA	Water	8081B	347128
500-115433-3	MW-03-GW-08082016	Total/NA	Water	8081B	347128
500-115433-4	MW-04-GW-08082016	Total/NA	Water	8081B	347128
500-115433-5	MW-05-GW-08082016	Total/NA	Water	8081B	347128
MB 500-347128/1-A	Method Blank	Total/NA	Water	8081B	347128
LCS 500-347128/2-A	Lab Control Sample	Total/NA	Water	8081B	347128

GC Semi VOA (Continued)

Analysis Batch: 348276 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 500-347128/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	347128

Metals

Prep Batch: 347132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Dissolved	Water	7470A	
500-115433-1	MW-01-GW-08082016	Total/NA	Water	7470A	
500-115433-2	MW-02-GW-08082016	Dissolved	Water	7470A	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	7470A	
500-115433-3	MW-03-GW-08082016	Dissolved	Water	7470A	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	7470A	
500-115433-4	MW-04-GW-08082016	Dissolved	Water	7470A	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	7470A	
500-115433-5	MW-05-GW-08082016	Dissolved	Water	7470A	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	7470A	
MB 500-347132/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-347132/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-115433-1 MS	MW-01-GW-08082016	Total/NA	Water	7470A	
500-115433-1 MSD	MW-01-GW-08082016	Total/NA	Water	7470A	
500-115433-1 DU	MW-01-GW-08082016	Total/NA	Water	7470A	

Prep Batch: 347157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Dissolved	Water	3010A	
500-115433-1	MW-01-GW-08082016	Total/NA	Water	3010A	
500-115433-2	MW-02-GW-08082016	Dissolved	Water	3010A	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	3010A	
500-115433-3	MW-03-GW-08082016	Dissolved	Water	3010A	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	3010A	
500-115433-4	MW-04-GW-08082016	Dissolved	Water	3010A	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	3010A	
500-115433-5	MW-05-GW-08082016	Dissolved	Water	3010A	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	3010A	
MB 500-347157/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-347157/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 347294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Dissolved	Water	7470A	347132
500-115433-1	MW-01-GW-08082016	Total/NA	Water	7470A	347132
500-115433-2	MW-02-GW-08082016	Dissolved	Water	7470A	347132
500-115433-2	MW-02-GW-08082016	Total/NA	Water	7470A	347132
500-115433-3	MW-03-GW-08082016	Dissolved	Water	7470A	347132
500-115433-3	MW-03-GW-08082016	Total/NA	Water	7470A	347132
500-115433-4	MW-04-GW-08082016	Dissolved	Water	7470A	347132
500-115433-4	MW-04-GW-08082016	Total/NA	Water	7470A	347132
500-115433-5	MW-05-GW-08082016	Dissolved	Water	7470A	347132
500-115433-5	MW-05-GW-08082016	Total/NA	Water	7470A	347132
MB 500-347132/12-A	Method Blank	Total/NA	Water	7470A	347132

Metals (Continued)

Analysis Batch: 347294 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-347132/13-A	Lab Control Sample	Total/NA	Water	7470A	347132
500-115433-1 MS	MW-01-GW-08082016	Total/NA	Water	7470A	347132
500-115433-1 MSD	MW-01-GW-08082016	Total/NA	Water	7470A	347132
500-115433-1 DU	MW-01-GW-08082016	Total/NA	Water	7470A	347132

Analysis Batch: 347377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Dissolved	Water	6010C	347157
500-115433-1	MW-01-GW-08082016	Total/NA	Water	6010C	347157
500-115433-2	MW-02-GW-08082016	Dissolved	Water	6010C	347157
500-115433-2	MW-02-GW-08082016	Total/NA	Water	6010C	347157
500-115433-3	MW-03-GW-08082016	Dissolved	Water	6010C	347157
500-115433-3	MW-03-GW-08082016	Total/NA	Water	6010C	347157
500-115433-4	MW-04-GW-08082016	Dissolved	Water	6010C	347157
500-115433-4	MW-04-GW-08082016	Total/NA	Water	6010C	347157
500-115433-5	MW-05-GW-08082016	Dissolved	Water	6010C	347157
500-115433-5	MW-05-GW-08082016	Total/NA	Water	6010C	347157
MB 500-347157/1-A	Method Blank	Total/NA	Water	6010C	347157
LCS 500-347157/2-A	Lab Control Sample	Total/NA	Water	6010C	347157

Analysis Batch: 347664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Dissolved	Water	6010C	347157
500-115433-1	MW-01-GW-08082016	Total/NA	Water	6010C	347157
500-115433-2	MW-02-GW-08082016	Dissolved	Water	6010C	347157
500-115433-2	MW-02-GW-08082016	Total/NA	Water	6010C	347157
500-115433-3	MW-03-GW-08082016	Dissolved	Water	6010C	347157
500-115433-3	MW-03-GW-08082016	Total/NA	Water	6010C	347157
500-115433-4	MW-04-GW-08082016	Dissolved	Water	6010C	347157
500-115433-4	MW-04-GW-08082016	Total/NA	Water	6010C	347157
500-115433-5	MW-05-GW-08082016	Dissolved	Water	6010C	347157
500-115433-5	MW-05-GW-08082016	Total/NA	Water	6010C	347157
MB 500-347157/1-A	Method Blank	Total/NA	Water	6010C	347157
LCS 500-347157/2-A	Lab Control Sample	Total/NA	Water	6010C	347157

General Chemistry

Analysis Batch: 347120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	SM 2540D	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	SM 2540D	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	SM 2540D	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	SM 2540D	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	SM 2540D	
MB 500-347120/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-347120/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 347254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	9034	

General Chemistry (Continued)

Analysis Batch: 347254 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-2	MW-02-GW-08082016	Total/NA	Water	9034	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	9034	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	9034	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	9034	
MB 500-347254/1	Method Blank	Total/NA	Water	9034	
LCS 500-347254/2	Lab Control Sample	Total/NA	Water	9034	
500-115433-1 MS	MW-01-GW-08082016	Total/NA	Water	9034	
500-115433-1 MSD	MW-01-GW-08082016	Total/NA	Water	9034	

Analysis Batch: 347719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	SM 4500 NO3 F	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	SM 4500 NO3 F	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	SM 4500 NO3 F	
MB 500-347719/12	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-347719/13	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 347937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	9038	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	9038	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	9038	
MB 500-347937/3	Method Blank	Total/NA	Water	9038	
LCS 500-347937/4	Lab Control Sample	Total/NA	Water	9038	
500-115433-2 MS	MW-02-GW-08082016	Total/NA	Water	9038	
500-115433-2 MSD	MW-02-GW-08082016	Total/NA	Water	9038	

Prep Batch: 347976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	SM 4500 NH3 B	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	SM 4500 NH3 B	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	SM 4500 NH3 B	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	SM 4500 NH3 B	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	SM 4500 NH3 B	
MB 500-347976/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-347976/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 348022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	9060A	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	9060A	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	9060A	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	9060A	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	9060A	
MB 500-348022/4	Method Blank	Total/NA	Water	9060A	
LCS 500-348022/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 348031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	SM 4500 NO2 B	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	SM 4500 NO2 B	

General Chemistry (Continued)

Analysis Batch: 348031 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-3	MW-03-GW-08082016	Total/NA	Water	SM 4500 NO2 B	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	SM 4500 NO2 B	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	SM 4500 NO2 B	
MB 500-348031/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-348031/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 348058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-4	MW-04-GW-08082016	Total/NA	Water	SM 4500 NO3 F	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	SM 4500 NO3 F	
MB 500-348058/12	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-348058/13	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 348065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-4	MW-04-GW-08082016	Total/NA	Water	9038	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	9038	
MB 500-348065/3	Method Blank	Total/NA	Water	9038	
LCS 500-348065/4	Lab Control Sample	Total/NA	Water	9038	

Analysis Batch: 348153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	SM 4500 NH3 G	347976
500-115433-2	MW-02-GW-08082016	Total/NA	Water	SM 4500 NH3 G	347976
500-115433-3	MW-03-GW-08082016	Total/NA	Water	SM 4500 NH3 G	347976
500-115433-4	MW-04-GW-08082016	Total/NA	Water	SM 4500 NH3 G	347976
500-115433-5	MW-05-GW-08082016	Total/NA	Water	SM 4500 NH3 G	347976
MB 500-347976/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	347976
LCS 500-347976/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	347976

Analysis Batch: 348194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115433-1	MW-01-GW-08082016	Total/NA	Water	Nitrate by calc	
500-115433-2	MW-02-GW-08082016	Total/NA	Water	Nitrate by calc	
500-115433-3	MW-03-GW-08082016	Total/NA	Water	Nitrate by calc	
500-115433-4	MW-04-GW-08082016	Total/NA	Water	Nitrate by calc	
500-115433-5	MW-05-GW-08082016	Total/NA	Water	Nitrate by calc	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-115433-1	MW-01-GW-08082016	99	44 X	98	100
500-115433-2	MW-02-GW-08082016	96	97	96	101
500-115433-2 - DL	MW-02-GW-08082016	96	98	99	99
500-115433-3	MW-03-GW-08082016	96	95	97	103
500-115433-4	MW-04-GW-08082016	96	96	95	102
500-115433-4 - DL	MW-04-GW-08082016	98	98	97	101
500-115433-5	MW-05-GW-08082016	101	97	95	100
500-115433-5 MS	MW-05-GW-08082016	97	101	94	102
500-115433-5 MSD	MW-05-GW-08082016	100	100	96	101
LCS 500-347370/12	Lab Control Sample	96	96	93	104
LCS 500-347520/4	Lab Control Sample	96	97	92	102
MB 500-347370/6	Method Blank	98	97	99	102
MB 500-347520/6	Method Blank	97	95	94	102

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-115433-1	MW-01-GW-08082016	49	50	50	35	67	87
500-115433-1 - DL	MW-01-GW-08082016	50	47	50	35	66	97
500-115433-2	MW-02-GW-08082016	57	58	61	40	89	106
500-115433-2 - DL	MW-02-GW-08082016	61	53	60	37	90	120
500-115433-3	MW-03-GW-08082016	66	81	95	62	119	94
500-115433-3 - DL	MW-03-GW-08082016	77	79	87	55	98	136
500-115433-3 - DL2	MW-03-GW-08082016	0 D	0 D	0 D	0 D	0 D	0 D
500-115433-3 - DL3	MW-03-GW-08082016	0 D	0 D	0 D	0 D	0 D	0 D
500-115433-4	MW-04-GW-08082016	70	77	79	59	118	103
500-115433-5	MW-05-GW-08082016	66	73	76	49	91	107
LCS 500-347168/2-A	Lab Control Sample	73	79	88	63	109	85
LCS 500-347480/2-A	Lab Control Sample	90	98	102	65	120	128
LCSD 500-347168/3-A	Lab Control Sample Dup	77	92	92	69	114	91
LCSD 500-347480/3-A	Lab Control Sample Dup	85	95	96	64	118	126
MB 500-347168/1-A	Method Blank	79	95	99	72	131	75
MB 500-347480/1-A	Method Blank	91	101	102	70	129	114

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-115433-1	MW-01-GW-08082016	66	107
500-115433-2	MW-02-GW-08082016	47	94
500-115433-3	MW-03-GW-08082016	47	112
500-115433-4	MW-04-GW-08082016	82	365 X
500-115433-5	MW-05-GW-08082016	57	85
LCS 500-347128/2-A	Lab Control Sample	93	54
LCSD 500-347128/3-A	Lab Control Sample Dup	106	66
MB 500-347128/1-A	Method Blank	108	61

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-115433-1	MW-01-GW-08082016		57		69
500-115433-2	MW-02-GW-08082016		67		55
500-115433-3	MW-03-GW-08082016		66		60
500-115433-4	MW-04-GW-08082016	78	78	75	74
500-115433-5	MW-05-GW-08082016		74		69
LCS 500-347128/4-A	Lab Control Sample	63	58	73	79
LCSD 500-347128/5-A	Lab Control Sample Dup	59	59	45	50
MB 500-347128/1-A	Method Blank	55	53	105	103

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-347370/6
Matrix: Water
Analysis Batch: 347370

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/11/16 13:55	1
Benzene	<0.50		0.50	0.15	ug/L			08/11/16 13:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 13:55	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 13:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 13:55	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/11/16 13:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 13:55	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/11/16 13:55	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/11/16 13:55	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 13:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 13:55	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/11/16 13:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 13:55	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/11/16 13:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 13:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 13:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 13:55	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/11/16 13:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/11/16 13:55	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/11/16 13:55	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 13:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/11/16 13:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/11/16 13:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 13:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/11/16 13:55	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/11/16 13:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 13:55	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/11/16 13:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 13:55	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/11/16 13:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 13:55	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 13:55	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/11/16 13:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 13:55	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 13:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 13:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 13:55	1
Toluene	<0.50		0.50	0.15	ug/L			08/11/16 13:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 13:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 13:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 13:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 13:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 13:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/11/16 13:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 13:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 13:55	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/11/16 13:55	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/11/16 13:55	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		71 - 120		08/11/16 13:55	1
Dibromofluoromethane	97		70 - 120		08/11/16 13:55	1
1,2-Dichloroethane-d4 (Surr)	99		71 - 127		08/11/16 13:55	1
Toluene-d8 (Surr)	102		75 - 120		08/11/16 13:55	1

Lab Sample ID: LCS 500-347370/12
Matrix: Water
Analysis Batch: 347370

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	47.4		ug/L		95	37 - 141
Benzene	50.0	47.5		ug/L		95	70 - 125
Bromodichloromethane	50.0	45.4		ug/L		91	70 - 125
Bromoform	50.0	50.9		ug/L		102	54 - 128
Bromomethane	50.0	37.9		ug/L		76	40 - 150
Carbon disulfide	50.0	49.8		ug/L		100	68 - 125
Carbon tetrachloride	50.0	48.0		ug/L		96	70 - 125
Chlorobenzene	50.0	47.8		ug/L		96	70 - 125
Chloroethane	50.0	43.7		ug/L		87	60 - 139
Chloroform	50.0	44.9		ug/L		90	70 - 125
Chloromethane	50.0	50.5		ug/L		101	60 - 140
cis-1,2-Dichloroethene	50.0	48.8		ug/L		98	70 - 125
cis-1,3-Dichloropropene	50.0	50.5		ug/L		101	70 - 125
Cyclohexane	50.0	50.4		ug/L		101	56 - 149
Dibromochloromethane	50.0	50.0		ug/L		100	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	48.9		ug/L		98	51 - 125
1,2-Dibromoethane	50.0	47.7		ug/L		95	70 - 125
1,2-Dichlorobenzene	50.0	46.1		ug/L		92	70 - 125
1,3-Dichlorobenzene	50.0	47.3		ug/L		95	70 - 125
1,4-Dichlorobenzene	50.0	46.6		ug/L		93	70 - 125
Dichlorodifluoromethane	50.0	51.7		ug/L		103	51 - 140
1,1-Dichloroethane	50.0	47.9		ug/L		96	70 - 125
1,2-Dichloroethane	50.0	45.1		ug/L		90	70 - 125
1,1-Dichloroethene	50.0	48.3		ug/L		97	70 - 125
1,2-Dichloropropane	50.0	48.6		ug/L		97	70 - 125
Ethylbenzene	50.0	50.2		ug/L		100	70 - 125
2-Hexanone	50.0	49.5		ug/L		99	49 - 139
Isopropylbenzene	50.0	47.2		ug/L		94	70 - 125
Methyl acetate	250	274		ug/L		110	60 - 148
Methylcyclohexane	50.0	50.4		ug/L		101	70 - 127
Methylene Chloride	50.0	45.8		ug/L		92	68 - 125
Methyl Ethyl Ketone	50.0	50.4		ug/L		101	52 - 142
methyl isobutyl ketone	50.0	50.4		ug/L		101	47 - 140
Methyl tert-butyl ether	50.0	43.8		ug/L		88	67 - 125
Styrene	50.0	47.1		ug/L		94	70 - 125
1,1,2,2-Tetrachloroethane	50.0	44.7		ug/L		89	68 - 125
Tetrachloroethene	50.0	54.1		ug/L		108	70 - 125
Toluene	50.0	51.7		ug/L		103	70 - 125
trans-1,2-Dichloroethene	50.0	48.5		ug/L		97	70 - 125
trans-1,3-Dichloropropene	50.0	50.0		ug/L		100	70 - 125
1,2,4-Trichlorobenzene	50.0	49.6		ug/L		99	64 - 126
1,1,1-Trichloroethane	50.0	47.2		ug/L		94	70 - 125
1,1,2-Trichloroethane	50.0	49.1		ug/L		98	70 - 125
Trichloroethene	50.0	49.9		ug/L		100	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347370/12
Matrix: Water
Analysis Batch: 347370

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	50.1		ug/L		100	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.2		ug/L		96	57 - 141
Vinyl chloride	50.0	46.8		ug/L		94	70 - 126
Xylenes, Total	100	96.4		ug/L		96	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*
Toluene-d8 (Surr)	*104*		*75 - 120*

Lab Sample ID: 500-115433-5 MS
Matrix: Water
Analysis Batch: 347370

Client Sample ID: MW-05-GW-08082016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	11		50.0	52.1		ug/L		86	37 - 141
Benzene	0.25	J	50.0	50.9		ug/L		101	70 - 125
Bromodichloromethane	<1.0		50.0	47.9		ug/L		96	70 - 125
Bromoform	<1.0		50.0	54.8		ug/L		110	54 - 128
Bromomethane	<2.0		50.0	40.8		ug/L		82	40 - 150
Carbon disulfide	<2.0		50.0	52.6		ug/L		105	68 - 125
Carbon tetrachloride	<1.0		50.0	49.4		ug/L		99	70 - 125
Chlorobenzene	4.2		50.0	55.2		ug/L		102	70 - 125
Chloroethane	<1.0		50.0	46.9		ug/L		94	60 - 139
Chloroform	<1.0		50.0	48.1		ug/L		96	70 - 125
Chloromethane	<1.0		50.0	52.8		ug/L		106	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	52.9		ug/L		106	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	51.7		ug/L		103	70 - 125
Cyclohexane	1.8		50.0	54.9		ug/L		106	56 - 149
Dibromochloromethane	<1.0		50.0	54.1		ug/L		108	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	54.4		ug/L		109	51 - 125
1,2-Dibromoethane	<1.0		50.0	51.7		ug/L		103	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	50.4		ug/L		101	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	48.8		ug/L		98	70 - 125
1,4-Dichlorobenzene	2.1		50.0	50.9		ug/L		97	70 - 125
Dichlorodifluoromethane	<2.0		50.0	54.6		ug/L		109	51 - 140
1,1-Dichloroethane	<1.0		50.0	51.1		ug/L		102	70 - 125
1,2-Dichloroethane	<1.0		50.0	48.9		ug/L		98	70 - 125
1,1-Dichloroethene	<1.0		50.0	50.4		ug/L		101	70 - 125
1,2-Dichloropropane	<1.0		50.0	51.7		ug/L		103	70 - 125
Ethylbenzene	<0.50		50.0	51.5		ug/L		103	70 - 125
2-Hexanone	<5.0		50.0	54.7		ug/L		109	49 - 139
Isopropylbenzene	40		50.0	89.4		ug/L		99	70 - 125
Methyl acetate	<5.0		250	293		ug/L		117	60 - 148
Methylcyclohexane	0.55	J	50.0	53.2		ug/L		105	70 - 127
Methylene Chloride	<5.0		50.0	51.1		ug/L		102	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-115433-5 MS
Matrix: Water
Analysis Batch: 347370

Client Sample ID: MW-05-GW-08082016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	53.2		ug/L		106	52 - 142
methyl isobutyl ketone	<5.0		50.0	52.8		ug/L		106	47 - 140
Methyl tert-butyl ether	<1.0		50.0	49.2		ug/L		98	67 - 125
Styrene	<1.0		50.0	50.8		ug/L		102	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	52.3		ug/L		105	68 - 125
Tetrachloroethene	<1.0		50.0	53.5		ug/L		107	70 - 125
Toluene	<0.50		50.0	53.6		ug/L		107	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	51.5		ug/L		103	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	52.3		ug/L		105	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	49.4		ug/L		99	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	50.6		ug/L		101	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	53.5		ug/L		107	70 - 125
Trichloroethene	<0.50		50.0	49.8		ug/L		100	70 - 125
Trichlorofluoromethane	<1.0		50.0	48.8		ug/L		98	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	50.2		ug/L		100	57 - 141
Vinyl chloride	<0.50		50.0	49.1		ug/L		98	70 - 126
Xylenes, Total	0.64	J	100	102		ug/L		101	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*101*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*

Lab Sample ID: 500-115433-5 MSD
Matrix: Water
Analysis Batch: 347370

Client Sample ID: MW-05-GW-08082016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	11		50.0	52.1		ug/L		86	37 - 141	0	20
Benzene	0.25	J	50.0	50.7		ug/L		101	70 - 125	0	20
Bromodichloromethane	<1.0		50.0	47.8		ug/L		96	70 - 125	0	20
Bromoform	<1.0		50.0	54.3		ug/L		109	54 - 128	1	20
Bromomethane	<2.0		50.0	38.1		ug/L		76	40 - 150	7	20
Carbon disulfide	<2.0		50.0	51.9		ug/L		104	68 - 125	1	20
Carbon tetrachloride	<1.0		50.0	48.8		ug/L		98	70 - 125	1	20
Chlorobenzene	4.2		50.0	54.2		ug/L		100	70 - 125	2	20
Chloroethane	<1.0		50.0	46.1		ug/L		92	60 - 139	2	20
Chloroform	<1.0		50.0	47.2		ug/L		94	70 - 125	2	20
Chloromethane	<1.0		50.0	52.6		ug/L		105	60 - 140	1	20
cis-1,2-Dichloroethene	<1.0		50.0	52.4		ug/L		105	70 - 125	1	20
cis-1,3-Dichloropropene	<1.0		50.0	49.9		ug/L		100	70 - 125	3	20
Cyclohexane	1.8		50.0	54.1		ug/L		105	56 - 149	2	20
Dibromochloromethane	<1.0		50.0	52.4		ug/L		105	66 - 125	3	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	55.0		ug/L		110	51 - 125	1	20
1,2-Dibromoethane	<1.0		50.0	50.6		ug/L		101	70 - 125	2	20
1,2-Dichlorobenzene	<1.0		50.0	49.1		ug/L		98	70 - 125	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-115433-5 MSD
Matrix: Water
Analysis Batch: 347370

Client Sample ID: MW-05-GW-08082016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	48.4		ug/L		97	70 - 125	1	20
1,4-Dichlorobenzene	2.1		50.0	49.1		ug/L		94	70 - 125	4	20
Dichlorodifluoromethane	<2.0		50.0	54.9		ug/L		110	51 - 140	1	20
1,1-Dichloroethane	<1.0		50.0	51.6		ug/L		103	70 - 125	1	20
1,2-Dichloroethane	<1.0		50.0	48.9		ug/L		98	70 - 125	0	20
1,1-Dichloroethene	<1.0		50.0	50.2		ug/L		100	70 - 125	0	20
1,2-Dichloropropane	<1.0		50.0	51.8		ug/L		104	70 - 125	0	20
Ethylbenzene	<0.50		50.0	51.0		ug/L		102	70 - 125	1	20
2-Hexanone	<5.0		50.0	53.9		ug/L		108	49 - 139	2	20
Isopropylbenzene	40		50.0	89.4		ug/L		100	70 - 125	0	20
Methyl acetate	<5.0		250	293		ug/L		117	60 - 148	0	20
Methylcyclohexane	0.55	J	50.0	52.5		ug/L		104	70 - 127	1	20
Methylene Chloride	<5.0		50.0	49.8		ug/L		100	68 - 125	3	20
Methyl Ethyl Ketone	<5.0		50.0	48.4		ug/L		97	52 - 142	10	20
methyl isobutyl ketone	<5.0		50.0	51.7		ug/L		103	47 - 140	2	20
Methyl tert-butyl ether	<1.0		50.0	48.7		ug/L		97	67 - 125	1	20
Styrene	<1.0		50.0	50.1		ug/L		100	70 - 125	1	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	48.6		ug/L		97	68 - 125	7	20
Tetrachloroethene	<1.0		50.0	51.5		ug/L		103	70 - 125	4	20
Toluene	<0.50		50.0	51.6		ug/L		103	70 - 125	4	20
trans-1,2-Dichloroethene	<1.0		50.0	51.7		ug/L		103	70 - 125	0	20
trans-1,3-Dichloropropene	<1.0		50.0	51.0		ug/L		102	70 - 125	3	20
1,2,4-Trichlorobenzene	<1.0		50.0	45.2		ug/L		90	64 - 126	9	20
1,1,1-Trichloroethane	<1.0		50.0	49.2		ug/L		98	70 - 125	3	20
1,1,2-Trichloroethane	<1.0		50.0	51.1		ug/L		102	70 - 125	5	20
Trichloroethene	<0.50		50.0	50.9		ug/L		102	70 - 125	2	20
Trichlorofluoromethane	<1.0		50.0	49.0		ug/L		98	60 - 126	0	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	49.9		ug/L		100	57 - 141	1	20
Vinyl chloride	<0.50		50.0	48.4		ug/L		97	70 - 126	1	20
Xylenes, Total	0.64	J	100	98.8		ug/L		98	70 - 125	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*
Dibromofluoromethane	*100*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*
Toluene-d8 (Surr)	*101*		*75 - 120*

Lab Sample ID: MB 500-347520/6
Matrix: Water
Analysis Batch: 347520

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 09:14	1
Benzene	<0.50		0.50	0.15	ug/L			08/12/16 09:14	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 09:14	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 09:14	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 09:14	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-347520/6
Matrix: Water
Analysis Batch: 347520

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 09:14	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 09:14	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 09:14	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 09:14	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 09:14	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 09:14	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 09:14	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 09:14	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 09:14	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 09:14	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 09:14	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 09:14	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 09:14	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 09:14	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/12/16 09:14	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 09:14	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 09:14	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 09:14	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 09:14	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 09:14	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 09:14	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 09:14	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/12/16 09:14	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 09:14	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 09:14	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 09:14	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 09:14	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 09:14	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 09:14	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 09:14	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 09:14	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 09:14	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 09:14	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 09:14	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 09:14	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 09:14	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 09:14	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 09:14	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 09:14	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 09:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 09:14	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 09:14	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 09:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*08/12/16 09:14*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*08/12/16 09:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*		*08/12/16 09:14*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-347520/6
Matrix: Water
Analysis Batch: 347520

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*75 - 120*		*08/12/16 09:14*	*1*

Lab Sample ID: LCS 500-347520/4
Matrix: Water
Analysis Batch: 347520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	45.1		ug/L		90	37 - 141
Benzene	50.0	46.1		ug/L		92	70 - 125
Bromodichloromethane	50.0	43.6		ug/L		87	70 - 125
Bromoform	50.0	48.4		ug/L		97	54 - 128
Bromomethane	50.0	37.3		ug/L		75	40 - 150
Carbon disulfide	50.0	48.0		ug/L		96	68 - 125
Carbon tetrachloride	50.0	46.3		ug/L		93	70 - 125
Chlorobenzene	50.0	45.7		ug/L		91	70 - 125
Chloroethane	50.0	43.5		ug/L		87	60 - 139
Chloroform	50.0	44.0		ug/L		88	70 - 125
Chloromethane	50.0	47.2		ug/L		94	60 - 140
cis-1,2-Dichloroethene	50.0	47.9		ug/L		96	70 - 125
cis-1,3-Dichloropropene	50.0	46.7		ug/L		93	70 - 125
Cyclohexane	50.0	49.0		ug/L		98	56 - 149
Dibromochloromethane	50.0	46.1		ug/L		92	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	44.2		ug/L		88	51 - 125
1,2-Dibromoethane	50.0	44.3		ug/L		89	70 - 125
1,2-Dichlorobenzene	50.0	44.9		ug/L		90	70 - 125
1,3-Dichlorobenzene	50.0	45.1		ug/L		90	70 - 125
1,4-Dichlorobenzene	50.0	45.1		ug/L		90	70 - 125
Dichlorodifluoromethane	50.0	50.3		ug/L		101	51 - 140
1,1-Dichloroethane	50.0	47.3		ug/L		95	70 - 125
1,2-Dichloroethane	50.0	43.5		ug/L		87	70 - 125
1,1-Dichloroethene	50.0	46.8		ug/L		94	70 - 125
1,2-Dichloropropane	50.0	47.3		ug/L		95	70 - 125
Ethylbenzene	50.0	48.0		ug/L		96	70 - 125
2-Hexanone	50.0	43.7		ug/L		87	49 - 139
Isopropylbenzene	50.0	45.9		ug/L		92	70 - 125
Methyl acetate	250	258		ug/L		103	60 - 148
Methylcyclohexane	50.0	48.7		ug/L		97	70 - 127
Methylene Chloride	50.0	45.5		ug/L		91	68 - 125
Methyl Ethyl Ketone	50.0	46.9		ug/L		94	52 - 142
methyl isobutyl ketone	50.0	43.5		ug/L		87	47 - 140
Methyl tert-butyl ether	50.0	42.7		ug/L		85	67 - 125
Styrene	50.0	46.1		ug/L		92	70 - 125
1,1,2,2-Tetrachloroethane	50.0	40.8		ug/L		82	68 - 125
Tetrachloroethene	50.0	50.0		ug/L		100	70 - 125
Toluene	50.0	48.8		ug/L		98	70 - 125
trans-1,2-Dichloroethene	50.0	47.7		ug/L		95	70 - 125
trans-1,3-Dichloropropene	50.0	46.7		ug/L		93	70 - 125
1,2,4-Trichlorobenzene	50.0	46.4		ug/L		93	64 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347520/4
Matrix: Water
Analysis Batch: 347520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	46.9		ug/L		94	70 - 125
1,1,2-Trichloroethane	50.0	45.3		ug/L		91	70 - 125
Trichloroethene	50.0	47.8		ug/L		96	70 - 125
Trichlorofluoromethane	50.0	46.8		ug/L		94	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	46.6		ug/L		93	57 - 141
Vinyl chloride	50.0	44.9		ug/L		90	70 - 126
Xylenes, Total	100	91.5		ug/L		92	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-347168/1-A
Matrix: Water
Analysis Batch: 347248

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347168

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		08/09/16 15:52	08/10/16 10:39	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		08/09/16 15:52	08/10/16 10:39	1
Acetophenone	<4.0		4.0	0.53	ug/L		08/09/16 15:52	08/10/16 10:39	1
Anthracene	<0.80		0.80	0.27	ug/L		08/09/16 15:52	08/10/16 10:39	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		08/09/16 15:52	08/10/16 10:39	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		08/09/16 15:52	08/10/16 10:39	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		08/09/16 15:52	08/10/16 10:39	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		08/09/16 15:52	08/10/16 10:39	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		08/09/16 15:52	08/10/16 10:39	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		08/09/16 15:52	08/10/16 10:39	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		08/09/16 15:52	08/10/16 10:39	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		08/09/16 15:52	08/10/16 10:39	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		08/09/16 15:52	08/10/16 10:39	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		08/09/16 15:52	08/10/16 10:39	1
Carbazole	<4.0		4.0	0.28	ug/L		08/09/16 15:52	08/10/16 10:39	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		08/09/16 15:52	08/10/16 10:39	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		08/09/16 15:52	08/10/16 10:39	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		08/09/16 15:52	08/10/16 10:39	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		08/09/16 15:52	08/10/16 10:39	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		08/09/16 15:52	08/10/16 10:39	1
Chrysene	<0.40		0.40	0.055	ug/L		08/09/16 15:52	08/10/16 10:39	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		08/09/16 15:52	08/10/16 10:39	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		08/09/16 15:52	08/10/16 10:39	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		08/09/16 15:52	08/10/16 10:39	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		08/09/16 15:52	08/10/16 10:39	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		08/09/16 15:52	08/10/16 10:39	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-347168/1-A
Matrix: Water
Analysis Batch: 347248

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347168

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		08/09/16 15:52	08/10/16 10:39	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		08/09/16 15:52	08/10/16 10:39	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		08/09/16 15:52	08/10/16 10:39	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		08/09/16 15:52	08/10/16 10:39	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		08/09/16 15:52	08/10/16 10:39	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		08/09/16 15:52	08/10/16 10:39	1
2,6-Dinitrotoluene	<0.40		0.40	0.059	ug/L		08/09/16 15:52	08/10/16 10:39	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		08/09/16 15:52	08/10/16 10:39	1
Fluoranthene	<0.80		0.80	0.36	ug/L		08/09/16 15:52	08/10/16 10:39	1
Fluorene	<0.80		0.80	0.20	ug/L		08/09/16 15:52	08/10/16 10:39	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		08/09/16 15:52	08/10/16 10:39	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		08/09/16 15:52	08/10/16 10:39	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		08/09/16 15:52	08/10/16 10:39	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		08/09/16 15:52	08/10/16 10:39	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		08/09/16 15:52	08/10/16 10:39	1
Isophorone	<1.6		1.6	0.30	ug/L		08/09/16 15:52	08/10/16 10:39	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		08/09/16 15:52	08/10/16 10:39	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		08/09/16 15:52	08/10/16 10:39	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		08/09/16 15:52	08/10/16 10:39	1
Naphthalene	<0.80		0.80	0.25	ug/L		08/09/16 15:52	08/10/16 10:39	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		08/09/16 15:52	08/10/16 10:39	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		08/09/16 15:52	08/10/16 10:39	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		08/09/16 15:52	08/10/16 10:39	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		08/09/16 15:52	08/10/16 10:39	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		08/09/16 15:52	08/10/16 10:39	1
4-Nitrophenol	<16		16	5.9	ug/L		08/09/16 15:52	08/10/16 10:39	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		08/09/16 15:52	08/10/16 10:39	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		08/09/16 15:52	08/10/16 10:39	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		08/09/16 15:52	08/10/16 10:39	1
Pentachlorophenol	<16		16	3.2	ug/L		08/09/16 15:52	08/10/16 10:39	1
Phenanthrene	<0.80		0.80	0.24	ug/L		08/09/16 15:52	08/10/16 10:39	1
Phenol	<4.0		4.0	0.54	ug/L		08/09/16 15:52	08/10/16 10:39	1
Pyrene	<0.80		0.80	0.34	ug/L		08/09/16 15:52	08/10/16 10:39	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		08/09/16 15:52	08/10/16 10:39	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		08/09/16 15:52	08/10/16 10:39	1
Benzaldehyde	<32		32	12	ug/L		08/09/16 15:52	08/10/16 10:39	1
Caprolactam	<8.0		8.0	1.2	ug/L		08/09/16 15:52	08/10/16 10:39	1
Atrazine	<4.0		4.0	0.50	ug/L		08/09/16 15:52	08/10/16 10:39	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		08/09/16 15:52	08/10/16 10:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*30 - 123*	*08/09/16 15:52*	*08/10/16 10:39*	*1*
2-Fluorophenol (Surr)	*95*		*30 - 110*	*08/09/16 15:52*	*08/10/16 10:39*	*1*
Nitrobenzene-d5 (Surr)	*99*		*33 - 139*	*08/09/16 15:52*	*08/10/16 10:39*	*1*
Phenol-d5 (Surr)	*72*		*20 - 100*	*08/09/16 15:52*	*08/10/16 10:39*	*1*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*08/09/16 15:52*	*08/10/16 10:39*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*30 - 150*	*08/09/16 15:52*	*08/10/16 10:39*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347168/2-A
Matrix: Water
Analysis Batch: 347248

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347168

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	20.7		ug/L		65	41 - 112
Acenaphthylene	32.0	24.1		ug/L		75	48 - 110
Acetophenone	32.0	25.3		ug/L		79	54 - 116
Anthracene	32.0	31.3		ug/L		98	65 - 118
Benzo[a]anthracene	32.0	31.6		ug/L		99	69 - 121
Benzo[a]pyrene	32.0	35.6		ug/L		111	69 - 130
Benzo[b]fluoranthene	32.0	35.1		ug/L		110	66 - 133
Benzo[g,h,i]perylene	32.0	37.1		ug/L		116	47 - 145
Benzo[k]fluoranthene	32.0	35.9		ug/L		112	64 - 134
Bis(2-chloroethoxy)methane	32.0	28.6		ug/L		89	55 - 115
Bis(2-chloroethyl)ether	32.0	26.0		ug/L		81	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	35.5		ug/L		111	60 - 132
4-Bromophenyl phenyl ether	32.0	28.2		ug/L		88	60 - 124
Butyl benzyl phthalate	32.0	36.5		ug/L		114	63 - 127
Carbazole	32.0	38.5		ug/L		120	71 - 132
4-Chloroaniline	32.0	9.83		ug/L		31	15 - 125
4-Chloro-3-methylphenol	32.0	30.8		ug/L		96	63 - 120
2-Chloronaphthalene	32.0	20.9		ug/L		65	38 - 110
2-Chlorophenol	32.0	27.0		ug/L		84	49 - 110
4-Chlorophenyl phenyl ether	32.0	23.4		ug/L		73	55 - 115
Chrysene	32.0	33.9		ug/L		106	70 - 126
Dibenz(a,h)anthracene	32.0	38.0		ug/L		119	59 - 145
Dibenzofuran	32.0	24.1		ug/L		75	54 - 111
3,3'-Dichlorobenzidine	32.0	31.0		ug/L		97	57 - 145
2,4-Dichlorophenol	32.0	29.1		ug/L		91	53 - 123
Diethyl phthalate	32.0	28.0		ug/L		88	64 - 126
2,4-Dimethylphenol	32.0	26.2		ug/L		82	42 - 115
Dimethyl phthalate	32.0	28.4		ug/L		89	66 - 120
Di-n-butyl phthalate	32.0	33.5		ug/L		105	67 - 125
4,6-Dinitro-2-methylphenol	64.0	58.3		ug/L		91	34 - 152
2,4-Dinitrophenol	64.0	46.0		ug/L		72	20 - 140
2,4-Dinitrotoluene	32.0	32.1		ug/L		100	67 - 131
2,6-Dinitrotoluene	32.0	29.7		ug/L		93	66 - 125
Di-n-octyl phthalate	32.0	37.0		ug/L		116	63 - 133
Fluoranthene	32.0	32.5		ug/L		102	68 - 127
Fluorene	32.0	25.4		ug/L		79	54 - 113
Hexachlorobenzene	32.0	30.8		ug/L		96	63 - 127
Hexachlorobutadiene	32.0	17.6		ug/L		55	20 - 110
Hexachlorocyclopentadiene	32.0	<16	*	ug/L		0.8	10 - 110
Hexachloroethane	32.0	18.5		ug/L		58	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	40.7		ug/L		127	52 - 150
Isophorone	32.0	28.1		ug/L		88	55 - 120
2-Methylnaphthalene	32.0	21.8		ug/L		68	32 - 110
2-Methylphenol	32.0	28.9		ug/L		90	49 - 113
3 & 4 Methylphenol	32.0	28.1		ug/L		88	49 - 114
Naphthalene	32.0	21.9		ug/L		68	32 - 110
2-Nitroaniline	32.0	32.3		ug/L		101	61 - 126
3-Nitroaniline	32.0	17.2		ug/L		54	42 - 134

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347168/2-A
Matrix: Water
Analysis Batch: 347248

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347168

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitroaniline	32.0	27.8		ug/L		87	40 - 142
Nitrobenzene	32.0	29.5		ug/L		92	49 - 116
2-Nitrophenol	32.0	29.8		ug/L		93	51 - 120
4-Nitrophenol	64.0	24.3		ug/L		38	21 - 110
N-Nitrosodi-n-propylamine	32.0	28.1		ug/L		88	52 - 122
N-Nitrosodiphenylamine	32.0	31.3		ug/L		98	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	23.4		ug/L		73	34 - 110
Pentachlorophenol	64.0	33.8		ug/L		53	29 - 138
Phenanthrene	32.0	31.0		ug/L		97	63 - 121
Phenol	32.0	16.6		ug/L		52	33 - 100
Pyrene	32.0	33.0		ug/L		103	65 - 122
2,4,5-Trichlorophenol	32.0	25.8		ug/L		80	63 - 121
2,4,6-Trichlorophenol	32.0	25.8		ug/L		81	61 - 120
Caprolactam	32.0	16.5		ug/L		52	25 - 100
Atrazine	32.0	26.8		ug/L		84	57 - 128
1,1'-Biphenyl	32.0	20.9		ug/L		65	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*73*		*30 - 123*
2-Fluorophenol (Surr)	*79*		*30 - 110*
Nitrobenzene-d5 (Surr)	*88*		*33 - 139*
Phenol-d5 (Surr)	*63*		*20 - 100*
Terphenyl-d14 (Surr)	*109*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*85*		*30 - 150*

Lab Sample ID: LCSD 500-347168/3-A
Matrix: Water
Analysis Batch: 347248

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347168

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	22.8		ug/L		71	41 - 112	10	20
Acenaphthylene	32.0	26.3		ug/L		82	48 - 110	9	20
Acetophenone	32.0	26.7		ug/L		83	54 - 116	5	20
Anthracene	32.0	33.0		ug/L		103	65 - 118	5	20
Benzo[a]anthracene	32.0	33.5		ug/L		105	69 - 121	6	20
Benzo[a]pyrene	32.0	37.2		ug/L		116	69 - 130	5	20
Benzo[b]fluoranthene	32.0	37.0		ug/L		115	66 - 133	5	20
Benzo[g,h,i]perylene	32.0	38.9		ug/L		122	47 - 145	5	20
Benzo[k]fluoranthene	32.0	35.2		ug/L		110	64 - 134	2	20
Bis(2-chloroethoxy)methane	32.0	29.9		ug/L		93	55 - 115	4	20
Bis(2-chloroethyl)ether	32.0	26.8		ug/L		84	46 - 110	3	20
Bis(2-ethylhexyl) phthalate	32.0	37.2		ug/L		116	60 - 132	5	20
4-Bromophenyl phenyl ether	32.0	30.8		ug/L		96	60 - 124	9	20
Butyl benzyl phthalate	32.0	38.1		ug/L		119	63 - 127	4	20
Carbazole	32.0	40.3		ug/L		126	71 - 132	5	20
4-Chloroaniline	32.0	13.0	*	ug/L		41	15 - 125	28	20
4-Chloro-3-methylphenol	32.0	32.5		ug/L		102	63 - 120	5	20
2-Chloronaphthalene	32.0	23.3		ug/L		73	38 - 110	11	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-347168/3-A
Matrix: Water
Analysis Batch: 347248

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347168

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chlorophenol	32.0	28.9		ug/L		90	49 - 110	7	20
4-Chlorophenyl phenyl ether	32.0	25.6		ug/L		80	55 - 115	9	20
Chrysene	32.0	34.9		ug/L		109	70 - 126	3	20
Dibenz(a,h)anthracene	32.0	40.0		ug/L		125	59 - 145	5	20
Dibenzofuran	32.0	25.9		ug/L		81	54 - 111	7	20
3,3'-Dichlorobenzidine	32.0	32.6		ug/L		102	57 - 145	5	20
2,4-Dichlorophenol	32.0	30.2		ug/L		94	53 - 123	4	20
Diethyl phthalate	32.0	29.8		ug/L		93	64 - 126	6	20
2,4-Dimethylphenol	32.0	26.6		ug/L		83	42 - 115	2	20
Dimethyl phthalate	32.0	30.0		ug/L		94	66 - 120	5	20
Di-n-butyl phthalate	32.0	35.3		ug/L		110	67 - 125	5	20
4,6-Dinitro-2-methylphenol	64.0	63.8		ug/L		100	34 - 152	9	20
2,4-Dinitrophenol	64.0	50.6		ug/L		79	20 - 140	10	20
2,4-Dinitrotoluene	32.0	34.2		ug/L		107	67 - 131	6	20
2,6-Dinitrotoluene	32.0	30.6		ug/L		96	66 - 125	3	20
Di-n-octyl phthalate	32.0	38.9		ug/L		121	63 - 133	5	20
Fluoranthene	32.0	34.3		ug/L		107	68 - 127	5	20
Fluorene	32.0	27.1		ug/L		85	54 - 113	6	20
Hexachlorobenzene	32.0	32.7		ug/L		102	63 - 127	6	20
Hexachlorobutadiene	32.0	21.1		ug/L		66	20 - 110	18	20
Hexachlorocyclopentadiene	32.0	<16	*	ug/L		1	10 - 110	51	20
Hexachloroethane	32.0	21.7		ug/L		68	20 - 110	16	20
Indeno[1,2,3-cd]pyrene	32.0	42.4		ug/L		133	52 - 150	4	20
Isophorone	32.0	29.5		ug/L		92	55 - 120	5	20
2-Methylnaphthalene	32.0	25.0		ug/L		78	32 - 110	13	20
2-Methylphenol	32.0	27.3		ug/L		85	49 - 113	5	20
3 & 4 Methylphenol	32.0	29.9		ug/L		93	49 - 114	6	20
Naphthalene	32.0	24.5		ug/L		77	32 - 110	11	20
2-Nitroaniline	32.0	33.2		ug/L		104	61 - 126	3	20
3-Nitroaniline	32.0	18.9		ug/L		59	42 - 134	9	20
4-Nitroaniline	32.0	29.2		ug/L		91	40 - 142	5	20
Nitrobenzene	32.0	30.9		ug/L		97	49 - 116	5	20
2-Nitrophenol	32.0	31.4		ug/L		98	51 - 120	5	20
4-Nitrophenol	64.0	24.2		ug/L		38	21 - 110	0	20
N-Nitrosodi-n-propylamine	32.0	29.5		ug/L		92	52 - 122	5	20
N-Nitrosodiphenylamine	32.0	32.7		ug/L		102	63 - 117	5	20
2,2'-oxybis[1-chloropropane]	32.0	25.5		ug/L		80	34 - 110	8	20
Pentachlorophenol	64.0	34.9		ug/L		55	29 - 138	3	20
Phenanthrene	32.0	32.8		ug/L		103	63 - 121	6	20
Phenol	32.0	18.5		ug/L		58	33 - 100	11	20
Pyrene	32.0	34.3		ug/L		107	65 - 122	4	20
2,4,5-Trichlorophenol	32.0	26.5		ug/L		83	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	26.4		ug/L		82	61 - 120	2	20
Caprolactam	32.0	18.5		ug/L		58	25 - 100	11	20
Atrazine	32.0	27.5		ug/L		86	57 - 128	2	20
1,1'-Biphenyl	32.0	23.5		ug/L		73	42 - 110	11	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-347168/3-A
Matrix: Water
Analysis Batch: 347248

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347168

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*77*		*30 - 123*
2-Fluorophenol (Surr)	*92*		*30 - 110*
Nitrobenzene-d5 (Surr)	*92*		*33 - 139*
Phenol-d5 (Surr)	*69*		*20 - 100*
Terphenyl-d14 (Surr)	*114*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*91*		*30 - 150*

Lab Sample ID: MB 500-347480/1-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347480

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		08/11/16 16:33	08/12/16 16:05	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		08/11/16 16:33	08/12/16 16:05	1
Acetophenone	<4.0		4.0	0.53	ug/L		08/11/16 16:33	08/12/16 16:05	1
Anthracene	<0.80		0.80	0.27	ug/L		08/11/16 16:33	08/12/16 16:05	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		08/11/16 16:33	08/12/16 16:05	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		08/11/16 16:33	08/12/16 16:05	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		08/11/16 16:33	08/12/16 16:05	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		08/11/16 16:33	08/12/16 16:05	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		08/11/16 16:33	08/12/16 16:05	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		08/11/16 16:33	08/12/16 16:05	1
Bis(2-chloroethyl)ether	<1.6	^	1.6	0.23	ug/L		08/11/16 16:33	08/12/16 16:05	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		08/11/16 16:33	08/12/16 16:05	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		08/11/16 16:33	08/12/16 16:05	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		08/11/16 16:33	08/12/16 16:05	1
Carbazole	<4.0		4.0	0.28	ug/L		08/11/16 16:33	08/12/16 16:05	1
4-Chloroaniline	<8.0	^	8.0	1.6	ug/L		08/11/16 16:33	08/12/16 16:05	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		08/11/16 16:33	08/12/16 16:05	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		08/11/16 16:33	08/12/16 16:05	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		08/11/16 16:33	08/12/16 16:05	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		08/11/16 16:33	08/12/16 16:05	1
Chrysene	<0.40		0.40	0.055	ug/L		08/11/16 16:33	08/12/16 16:05	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		08/11/16 16:33	08/12/16 16:05	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		08/11/16 16:33	08/12/16 16:05	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		08/11/16 16:33	08/12/16 16:05	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		08/11/16 16:33	08/12/16 16:05	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		08/11/16 16:33	08/12/16 16:05	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		08/11/16 16:33	08/12/16 16:05	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,6-Dinitrotoluene	<0.40		0.40	0.059	ug/L		08/11/16 16:33	08/12/16 16:05	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		08/11/16 16:33	08/12/16 16:05	1
Fluoranthene	<0.80		0.80	0.36	ug/L		08/11/16 16:33	08/12/16 16:05	1
Fluorene	<0.80		0.80	0.20	ug/L		08/11/16 16:33	08/12/16 16:05	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-347480/1-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347480

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		08/11/16 16:33	08/12/16 16:05	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		08/11/16 16:33	08/12/16 16:05	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		08/11/16 16:33	08/12/16 16:05	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		08/11/16 16:33	08/12/16 16:05	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		08/11/16 16:33	08/12/16 16:05	1
Isophorone	<1.6		1.6	0.30	ug/L		08/11/16 16:33	08/12/16 16:05	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		08/11/16 16:33	08/12/16 16:05	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		08/11/16 16:33	08/12/16 16:05	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		08/11/16 16:33	08/12/16 16:05	1
Naphthalene	<0.80		0.80	0.25	ug/L		08/11/16 16:33	08/12/16 16:05	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		08/11/16 16:33	08/12/16 16:05	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		08/11/16 16:33	08/12/16 16:05	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		08/11/16 16:33	08/12/16 16:05	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		08/11/16 16:33	08/12/16 16:05	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		08/11/16 16:33	08/12/16 16:05	1
4-Nitrophenol	<16		16	5.9	ug/L		08/11/16 16:33	08/12/16 16:05	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		08/11/16 16:33	08/12/16 16:05	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		08/11/16 16:33	08/12/16 16:05	1
Pentachlorophenol	<16		16	3.2	ug/L		08/11/16 16:33	08/12/16 16:05	1
Phenanthrene	<0.80		0.80	0.24	ug/L		08/11/16 16:33	08/12/16 16:05	1
Phenol	<4.0		4.0	0.54	ug/L		08/11/16 16:33	08/12/16 16:05	1
Pyrene	<0.80		0.80	0.34	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		08/11/16 16:33	08/12/16 16:05	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		08/11/16 16:33	08/12/16 16:05	1
Benzaldehyde	<32		32	12	ug/L		08/11/16 16:33	08/12/16 16:05	1
Caprolactam	<8.0		8.0	1.2	ug/L		08/11/16 16:33	08/12/16 16:05	1
Atrazine	<4.0		4.0	0.50	ug/L		08/11/16 16:33	08/12/16 16:05	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		08/11/16 16:33	08/12/16 16:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*91*		*30 - 123*	*08/11/16 16:33*	*08/12/16 16:05*	*1*
2-Fluorophenol (Surr)	*101*		*30 - 110*	*08/11/16 16:33*	*08/12/16 16:05*	*1*
Nitrobenzene-d5 (Surr)	*102*		*33 - 139*	*08/11/16 16:33*	*08/12/16 16:05*	*1*
Phenol-d5 (Surr)	*70*		*20 - 100*	*08/11/16 16:33*	*08/12/16 16:05*	*1*
Terphenyl-d14 (Surr)	*129*		*42 - 150*	*08/11/16 16:33*	*08/12/16 16:05*	*1*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*08/11/16 16:33*	*08/12/16 16:05*	*1*

Lab Sample ID: LCS 500-347480/2-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	26.1		ug/L		81	41 - 112
Acenaphthylene	32.0	27.5		ug/L		86	48 - 110
Acetophenone	32.0	26.9		ug/L		84	54 - 116
Anthracene	32.0	31.9		ug/L		100	65 - 118
Benzo[a]anthracene	32.0	34.1		ug/L		107	69 - 121

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347480/2-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	32.0	37.1		ug/L		116	69 - 130
Benzo[b]fluoranthene	32.0	36.5		ug/L		114	66 - 133
Benzo[g,h,i]perylene	32.0	39.4		ug/L		123	47 - 145
Benzo[k]fluoranthene	32.0	34.4		ug/L		107	64 - 134
Bis(2-chloroethoxy)methane	32.0	28.4		ug/L		89	55 - 115
Bis(2-chloroethyl)ether	32.0	22.4	^	ug/L		70	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	29.4		ug/L		92	60 - 132
4-Bromophenyl phenyl ether	32.0	32.2		ug/L		101	60 - 124
Butyl benzyl phthalate	32.0	31.7		ug/L		99	63 - 127
Carbazole	32.0	42.3		ug/L		132	71 - 132
4-Chloroaniline	32.0	28.2	^	ug/L		88	15 - 125
4-Chloro-3-methylphenol	32.0	30.5		ug/L		95	63 - 120
2-Chloronaphthalene	32.0	25.1		ug/L		78	38 - 110
2-Chlorophenol	32.0	27.7		ug/L		87	49 - 110
4-Chlorophenyl phenyl ether	32.0	26.7		ug/L		83	55 - 115
Chrysene	32.0	35.7		ug/L		112	70 - 126
Dibenz(a,h)anthracene	32.0	38.7		ug/L		121	59 - 145
Dibenzofuran	32.0	27.3		ug/L		85	54 - 111
3,3'-Dichlorobenzidine	32.0	45.9		ug/L		143	57 - 145
2,4-Dichlorophenol	32.0	32.5		ug/L		102	53 - 123
Diethyl phthalate	32.0	27.7		ug/L		86	64 - 126
2,4-Dimethylphenol	32.0	27.8		ug/L		87	42 - 115
Dimethyl phthalate	32.0	31.0		ug/L		97	66 - 120
Di-n-butyl phthalate	32.0	30.8		ug/L		96	67 - 125
4,6-Dinitro-2-methylphenol	64.0	66.1		ug/L		103	34 - 152
2,4-Dinitrophenol	64.0	70.0		ug/L		109	20 - 140
2,4-Dinitrotoluene	32.0	33.3		ug/L		104	67 - 131
2,6-Dinitrotoluene	32.0	33.2		ug/L		104	66 - 125
Di-n-octyl phthalate	32.0	33.4		ug/L		104	63 - 133
Fluoranthene	32.0	34.6		ug/L		108	68 - 127
Fluorene	32.0	27.6		ug/L		86	54 - 113
Hexachlorobenzene	32.0	37.0		ug/L		116	63 - 127
Hexachlorobutadiene	32.0	25.1		ug/L		78	20 - 110
Hexachlorocyclopentadiene	32.0	12.7	J	ug/L		40	10 - 110
Hexachloroethane	32.0	21.4		ug/L		67	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	48.4	*	ug/L		151	52 - 150
Isophorone	32.0	25.4		ug/L		79	55 - 120
2-Methylnaphthalene	32.0	26.9		ug/L		84	32 - 110
2-Methylphenol	32.0	29.0		ug/L		91	49 - 113
3 & 4 Methylphenol	32.0	27.5		ug/L		86	49 - 114
Naphthalene	32.0	25.5		ug/L		80	32 - 110
2-Nitroaniline	32.0	27.8		ug/L		87	61 - 126
3-Nitroaniline	32.0	33.5		ug/L		105	42 - 134
4-Nitroaniline	32.0	31.8		ug/L		99	40 - 142
Nitrobenzene	32.0	27.3		ug/L		85	49 - 116
2-Nitrophenol	32.0	33.6		ug/L		105	51 - 120
4-Nitrophenol	64.0	30.8		ug/L		48	21 - 110
N-Nitrosodi-n-propylamine	32.0	26.5		ug/L		83	52 - 122

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347480/2-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Nitrosodiphenylamine	32.0	32.1		ug/L		100	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	21.0		ug/L		66	34 - 110
Pentachlorophenol	64.0	64.0		ug/L		100	29 - 138
Phenanthrene	32.0	31.6		ug/L		99	63 - 121
Phenol	32.0	19.5		ug/L		61	33 - 100
Pyrene	32.0	33.9		ug/L		106	65 - 122
2,4,5-Trichlorophenol	32.0	32.3		ug/L		101	63 - 121
2,4,6-Trichlorophenol	32.0	31.0		ug/L		97	61 - 120
Caprolactam	32.0	25.5		ug/L		80	25 - 100
Atrazine	32.0	27.3		ug/L		85	57 - 128
1,1'-Biphenyl	32.0	24.7		ug/L		77	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*90*		*30 - 123*
2-Fluorophenol (Surr)	*98*		*30 - 110*
Nitrobenzene-d5 (Surr)	*102*		*33 - 139*
Phenol-d5 (Surr)	*65*		*20 - 100*
Terphenyl-d14 (Surr)	*120*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*128*		*30 - 150*

Lab Sample ID: LCSD 500-347480/3-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347480

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	24.5		ug/L		77	41 - 112	6	20
Acenaphthylene	32.0	25.8		ug/L		81	48 - 110	6	20
Acetophenone	32.0	25.2		ug/L		79	54 - 116	7	20
Anthracene	32.0	30.5		ug/L		95	65 - 118	4	20
Benzo[a]anthracene	32.0	33.1		ug/L		104	69 - 121	3	20
Benzo[a]pyrene	32.0	36.8		ug/L		115	69 - 130	1	20
Benzo[b]fluoranthene	32.0	33.7		ug/L		105	66 - 133	8	20
Benzo[g,h,i]perylene	32.0	39.9		ug/L		125	47 - 145	1	20
Benzo[k]fluoranthene	32.0	36.9		ug/L		115	64 - 134	7	20
Bis(2-chloroethoxy)methane	32.0	26.4		ug/L		83	55 - 115	7	20
Bis(2-chloroethyl)ether	32.0	21.7	^	ug/L		68	46 - 110	3	20
Bis(2-ethylhexyl) phthalate	32.0	29.3		ug/L		92	60 - 132	0	20
4-Bromophenyl phenyl ether	32.0	31.1		ug/L		97	60 - 124	3	20
Butyl benzyl phthalate	32.0	31.2		ug/L		97	63 - 127	2	20
Carbazole	32.0	43.1	*	ug/L		135	71 - 132	2	20
4-Chloroaniline	32.0	26.8	^	ug/L		84	15 - 125	5	20
4-Chloro-3-methylphenol	32.0	30.3		ug/L		95	63 - 120	1	20
2-Chloronaphthalene	32.0	23.7		ug/L		74	38 - 110	6	20
2-Chlorophenol	32.0	27.1		ug/L		85	49 - 110	2	20
4-Chlorophenyl phenyl ether	32.0	25.3		ug/L		79	55 - 115	6	20
Chrysene	32.0	35.0		ug/L		109	70 - 126	2	20
Dibenz(a,h)anthracene	32.0	38.6		ug/L		121	59 - 145	0	20
Dibenzofuran	32.0	25.9		ug/L		81	54 - 111	5	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-347480/3-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347480

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
3,3'-Dichlorobenzidine			32.0	40.1		ug/L		125	57 - 145	13	20
2,4-Dichlorophenol			32.0	31.6		ug/L		99	53 - 123	3	20
Diethyl phthalate			32.0	27.2		ug/L		85	64 - 126	2	20
2,4-Dimethylphenol			32.0	29.3		ug/L		92	42 - 115	5	20
Dimethyl phthalate			32.0	30.5		ug/L		95	66 - 120	2	20
Di-n-butyl phthalate			32.0	29.5		ug/L		92	67 - 125	4	20
4,6-Dinitro-2-methylphenol			64.0	63.3		ug/L		99	34 - 152	4	20
2,4-Dinitrophenol			64.0	70.2		ug/L		110	20 - 140	0	20
2,4-Dinitrotoluene			32.0	32.0		ug/L		100	67 - 131	4	20
2,6-Dinitrotoluene			32.0	32.2		ug/L		101	66 - 125	3	20
Di-n-octyl phthalate			32.0	32.9		ug/L		103	63 - 133	1	20
Fluoranthene			32.0	33.9		ug/L		106	68 - 127	2	20
Fluorene			32.0	26.3		ug/L		82	54 - 113	5	20
Hexachlorobenzene			32.0	35.9		ug/L		112	63 - 127	3	20
Hexachlorobutadiene			32.0	23.7		ug/L		74	20 - 110	6	20
Hexachlorocyclopentadiene			32.0	12.0	J	ug/L		38	10 - 110	6	20
Hexachloroethane			32.0	20.4		ug/L		64	20 - 110	5	20
Indeno[1,2,3-cd]pyrene			32.0	48.6	*	ug/L		152	52 - 150	0	20
Isophorone			32.0	24.1		ug/L		75	55 - 120	5	20
2-Methylnaphthalene			32.0	25.6		ug/L		80	32 - 110	5	20
2-Methylphenol			32.0	28.1		ug/L		88	49 - 113	3	20
3 & 4 Methylphenol			32.0	27.0		ug/L		84	49 - 114	2	20
Naphthalene			32.0	24.4		ug/L		76	32 - 110	4	20
2-Nitroaniline			32.0	26.9		ug/L		84	61 - 126	3	20
3-Nitroaniline			32.0	33.5		ug/L		105	42 - 134	0	20
4-Nitroaniline			32.0	27.7		ug/L		87	40 - 142	14	20
Nitrobenzene			32.0	26.2		ug/L		82	49 - 116	4	20
2-Nitrophenol			32.0	32.2		ug/L		101	51 - 120	4	20
4-Nitrophenol			64.0	31.9		ug/L		50	21 - 110	3	20
N-Nitrosodi-n-propylamine			32.0	24.5		ug/L		77	52 - 122	8	20
N-Nitrosodiphenylamine			32.0	31.0		ug/L		97	63 - 117	3	20
2,2'-oxybis[1-chloropropane]			32.0	19.9		ug/L		62	34 - 110	5	20
Pentachlorophenol			64.0	68.4		ug/L		107	29 - 138	7	20
Phenanthrene			32.0	31.1		ug/L		97	63 - 121	2	20
Phenol			32.0	19.2		ug/L		60	33 - 100	1	20
Pyrene			32.0	32.9		ug/L		103	65 - 122	3	20
2,4,5-Trichlorophenol			32.0	31.7		ug/L		99	63 - 121	2	20
2,4,6-Trichlorophenol			32.0	30.1		ug/L		94	61 - 120	3	20
Caprolactam			32.0	24.9		ug/L		78	25 - 100	3	20
Atrazine			32.0	25.4		ug/L		79	57 - 128	7	20
1,1'-Biphenyl			32.0	23.1		ug/L		72	42 - 110	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*85*		*30 - 123*
2-Fluorophenol (Surr)	*95*		*30 - 110*
Nitrobenzene-d5 (Surr)	*96*		*33 - 139*
Phenol-d5 (Surr)	*64*		*20 - 100*
Terphenyl-d14 (Surr)	*118*		*42 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-347480/3-A
Matrix: Water
Analysis Batch: 347565

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347480

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*126*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-347128/1-A
Matrix: Water
Analysis Batch: 348276

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		08/09/16 12:29	08/18/16 12:48	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		08/09/16 12:29	08/18/16 12:48	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		08/09/16 12:29	08/18/16 12:48	1
beta-BHC	<0.040		0.040	0.010	ug/L		08/09/16 12:29	08/18/16 12:48	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		08/09/16 12:29	08/18/16 12:48	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		08/09/16 12:29	08/18/16 12:48	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		08/09/16 12:29	08/18/16 12:48	1
delta-BHC	<0.040		0.040	0.010	ug/L		08/09/16 12:29	08/18/16 12:48	1
Dieldrin	<0.040		0.040	0.013	ug/L		08/09/16 12:29	08/18/16 12:48	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		08/09/16 12:29	08/18/16 12:48	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		08/09/16 12:29	08/18/16 12:48	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		08/09/16 12:29	08/18/16 12:48	1
Endrin	<0.040		0.040	0.014	ug/L		08/09/16 12:29	08/18/16 12:48	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		08/09/16 12:29	08/18/16 12:48	1
Endrin ketone	<0.040		0.040	0.017	ug/L		08/09/16 12:29	08/18/16 12:48	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		08/09/16 12:29	08/18/16 12:48	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		08/09/16 12:29	08/18/16 12:48	1
Heptachlor	<0.040		0.040	0.014	ug/L		08/09/16 12:29	08/18/16 12:48	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		08/09/16 12:29	08/18/16 12:48	1
Methoxychlor	<0.080		0.080	0.023	ug/L		08/09/16 12:29	08/18/16 12:48	1
Toxaphene	<0.40		0.40	0.20	ug/L		08/09/16 12:29	08/18/16 12:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*108*		*30 - 143*	*08/09/16 12:29*	*08/18/16 12:48*	*1*
Tetrachloro-m-xylene	*61*		*30 - 120*	*08/09/16 12:29*	*08/18/16 12:48*	*1*

Lab Sample ID: LCS 500-347128/2-A
Matrix: Water
Analysis Batch: 348276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.156		ug/L		49	40 - 130
alpha-BHC	0.320	0.233		ug/L		73	70 - 130
alpha-Chlordane	0.320	0.281		ug/L		88	70 - 130
beta-BHC	0.320	0.242		ug/L		76	70 - 130
4,4'-DDD	0.320	0.258		ug/L		81	70 - 130
4,4'-DDE	0.320	0.239		ug/L		75	56 - 130
4,4'-DDT	0.320	0.286		ug/L		89	50 - 137

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-347128/2-A
Matrix: Water
Analysis Batch: 348276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
delta-BHC	0.320	0.248		ug/L		78	70 - 130
Dieldrin	0.320	0.253		ug/L		79	70 - 130
Endosulfan I	0.320	0.169		ug/L		53	40 - 130
Endosulfan II	0.320	0.215		ug/L		67	49 - 130
Endosulfan sulfate	0.320	0.317		ug/L		99	70 - 130
Endrin	0.320	0.252		ug/L		79	69 - 130
Endrin aldehyde	0.320	0.276		ug/L		86	63 - 130
Endrin ketone	0.320	0.276		ug/L		86	54 - 141
gamma-BHC (Lindane)	0.320	0.250		ug/L		78	70 - 130
gamma-Chlordane	0.320	0.224		ug/L		70	63 - 130
Heptachlor	0.320	0.185		ug/L		58	40 - 130
Heptachlor epoxide	0.320	0.249		ug/L		78	70 - 130
Methoxychlor	0.320	0.287		ug/L		90	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*93*		*30 - 143*
Tetrachloro-m-xylene	*54*		*30 - 120*

Lab Sample ID: LCSD 500-347128/3-A
Matrix: Water
Analysis Batch: 348276

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.189		ug/L		59	40 - 130	19	20
alpha-BHC	0.320	0.299	*	ug/L		93	70 - 130	24	20
alpha-Chlordane	0.320	0.329		ug/L		103	70 - 130	16	20
beta-BHC	0.320	0.292		ug/L		91	70 - 130	19	20
4,4'-DDD	0.320	0.313		ug/L		98	70 - 130	19	20
4,4'-DDE	0.320	0.289		ug/L		90	56 - 130	19	20
4,4'-DDT	0.320	0.332		ug/L		104	50 - 137	15	20
delta-BHC	0.320	0.308	*	ug/L		96	70 - 130	22	20
Dieldrin	0.320	0.304		ug/L		95	70 - 130	19	20
Endosulfan I	0.320	0.204		ug/L		64	40 - 130	19	20
Endosulfan II	0.320	0.256		ug/L		80	49 - 130	17	20
Endosulfan sulfate	0.320	0.366		ug/L		114	70 - 130	14	20
Endrin	0.320	0.305		ug/L		95	69 - 130	19	20
Endrin aldehyde	0.320	0.313		ug/L		98	63 - 130	13	20
Endrin ketone	0.320	0.320		ug/L		100	54 - 141	15	20
gamma-BHC (Lindane)	0.320	0.313	*	ug/L		98	70 - 130	23	20
gamma-Chlordane	0.320	0.259		ug/L		81	63 - 130	14	20
Heptachlor	0.320	0.223		ug/L		70	40 - 130	18	20
Heptachlor epoxide	0.320	0.300		ug/L		94	70 - 130	19	20
Methoxychlor	0.320	0.324		ug/L		101	47 - 153	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*106*		*30 - 143*
Tetrachloro-m-xylene	*66*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-347128/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347264 — **Prep Batch: 347128**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		08/09/16 12:29	08/10/16 09:18	1
PCB-1221	<0.40		0.40	0.20	ug/L		08/09/16 12:29	08/10/16 09:18	1
PCB-1232	<0.40		0.40	0.20	ug/L		08/09/16 12:29	08/10/16 09:18	1
PCB-1242	<0.40		0.40	0.20	ug/L		08/09/16 12:29	08/10/16 09:18	1
PCB-1248	<0.40		0.40	0.20	ug/L		08/09/16 12:29	08/10/16 09:18	1
PCB-1254	<0.40		0.40	0.20	ug/L		08/09/16 12:29	08/10/16 09:18	1
PCB-1260	<0.40		0.40	0.070	ug/L		08/09/16 12:29	08/10/16 09:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*08/09/16 12:29*	*08/10/16 09:18*	*1*
DCB Decachlorobiphenyl	*103*		*30 - 150*	*08/09/16 12:29*	*08/10/16 09:18*	*1*

Lab Sample ID: LCS 500-347128/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347264 — **Prep Batch: 347128**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.11		ug/L		78	58 - 121
PCB-1260	4.00	3.90		ug/L		98	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*58*		*30 - 127*
DCB Decachlorobiphenyl	*79*		*30 - 150*

Lab Sample ID: LCSD 500-347128/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347264 — **Prep Batch: 347128**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.01		ug/L		75	58 - 121	3	20
PCB-1260	4.00	3.31		ug/L		83	62 - 137	16	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*59*		*30 - 127*
DCB Decachlorobiphenyl	*50*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-347157/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347377 — **Prep Batch: 347157**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 15:25	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 15:25	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 15:25	1
Barium	<0.010		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 15:25	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-347157/1-A
Matrix: Water
Analysis Batch: 347377

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 15:25	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 15:25	1
Calcium	<0.20		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 15:25	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 15:25	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 15:25	1
Copper	<0.010		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 15:25	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 15:25	1
Magnesium	<0.10		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 15:25	1
Manganese	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 15:25	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 15:25	1
Potassium	<0.50		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 15:25	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 15:25	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 15:25	1
Sodium	<1.0		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 15:25	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 15:25	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 15:25	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 15:25	1

Lab Sample ID: MB 500-347157/1-A
Matrix: Water
Analysis Batch: 347664

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.20		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 16:39	1

Lab Sample ID: LCS 500-347157/2-A
Matrix: Water
Analysis Batch: 347377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.93		mg/L		97	80 - 120
Antimony	0.500	0.487		mg/L		97	80 - 120
Arsenic	0.100	0.0939		mg/L		94	80 - 120
Barium	2.00	2.01		mg/L		100	80 - 120
Beryllium	0.0500	0.0496		mg/L		99	80 - 120
Cadmium	0.0500	0.0475		mg/L		95	80 - 120
Calcium	10.0	9.54		mg/L		95	80 - 120
Chromium	0.200	0.198		mg/L		99	80 - 120
Cobalt	0.500	0.486		mg/L		97	80 - 120
Copper	0.250	0.254		mg/L		102	80 - 120
Lead	0.100	0.0928		mg/L		93	80 - 120
Magnesium	10.0	9.31		mg/L		93	80 - 120
Manganese	0.500	0.493		mg/L		99	80 - 120
Nickel	0.500	0.485		mg/L		97	80 - 120
Potassium	10.0	9.63		mg/L		96	80 - 120
Selenium	0.100	0.0889		mg/L		89	80 - 120
Silver	0.0500	0.0462		mg/L		92	80 - 120
Sodium	10.0	9.89		mg/L		99	80 - 120
Thallium	0.100	0.0918		mg/L		92	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-347157/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347377 — **Prep Batch: 347157**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	0.500	0.510		mg/L		102	80 - 120
Zinc	0.500	0.468		mg/L		94	80 - 120

Lab Sample ID: LCS 500-347157/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347664 — **Prep Batch: 347157**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	1.02		mg/L		102	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-347132/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347294 — **Prep Batch: 347132**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 08:45	1

Lab Sample ID: LCS 500-347132/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347294 — **Prep Batch: 347132**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00188		mg/L		94	80 - 120

Lab Sample ID: 500-115433-1 MS — **Client Sample ID: MW-01-GW-08082016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347294 — **Prep Batch: 347132**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.000913		mg/L		91	75 - 125

Lab Sample ID: 500-115433-1 MSD — **Client Sample ID: MW-01-GW-08082016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347294 — **Prep Batch: 347132**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.000918		mg/L		92	75 - 125	1	20

Lab Sample ID: 500-115433-1 DU — **Client Sample ID: MW-01-GW-08082016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347294 — **Prep Batch: 347132**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	<0.00020		<0.00020		mg/L		NC	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-347254/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347254

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/10/16 08:31	1

Lab Sample ID: LCS 500-347254/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347254

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.85	6.28		mg/L		92	80 - 120

Lab Sample ID: 500-115433-1 MS — **Client Sample ID: MW-01-GW-08082016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347254

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	2.8		6.85	10.8		mg/L		117	75 - 125

Lab Sample ID: 500-115433-1 MSD — **Client Sample ID: MW-01-GW-08082016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347254

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	2.8		6.85	10.9		mg/L		119	75 - 125	1	20

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-347937/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347937

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.22	J	5.0	1.5	mg/L			08/16/16 09:09	1

Lab Sample ID: LCS 500-347937/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347937

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.2		mg/L		101	80 - 120

Lab Sample ID: 500-115433-2 MS — **Client Sample ID: MW-02-GW-08082016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347937

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<5.0		20.0	16.7		mg/L		84	75 - 125

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: 500-115433-2 MSD — **Client Sample ID: MW-02-GW-08082016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347937

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<5.0		20.0	18.4		mg/L		92	75 - 125	10	20

Lab Sample ID: MB 500-348065/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.11	J	5.0	1.5	mg/L			08/17/16 06:41	1

Lab Sample ID: LCS 500-348065/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348065

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.2		mg/L		96	80 - 120

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-348022/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			08/15/16 22:33	1

Lab Sample ID: LCS 500-348022/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.4		mg/L		104	80 - 120
TOC Result 1	10.0	10.3		mg/L		103	80 - 120
TOC Result 2	10.0	10.5		mg/L		105	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-347120/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347120

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			08/09/16 10:40	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 500-347120/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347120

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	207		mg/L		104	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-347976/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348153 — **Prep Batch: 347976**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0370	J	0.20	0.028	mg/L		08/16/16 12:55	08/17/16 11:11	1

Lab Sample ID: LCS 500-347976/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348153 — **Prep Batch: 347976**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.64		mg/L		105	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-348031/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348031

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:21	1

Lab Sample ID: LCS 500-348031/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348031

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.100		mg/L		100	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-347719/12 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347719

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/12/16 20:14	1

Method: SM 4500 NO3 F - Nitrogen, Nitrate (Continued)

Lab Sample ID: LCS 500-347719/13
Matrix: Water
Analysis Batch: 347719

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.907		mg/L		91	80 - 120

Lab Sample ID: MB 500-348058/12
Matrix: Water
Analysis Batch: 348058

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 19:52	1

Lab Sample ID: LCS 500-348058/13
Matrix: Water
Analysis Batch: 348058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.881		mg/L		88	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Date Collected: 08/08/16 11:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	347370	08/11/16 19:48	TCT	TAL CHI
Total/NA	Prep	3510C			347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347565	08/12/16 18:47	AJD	TAL CHI
Total/NA	Prep	3510C	DL		347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D	DL	5	348460	08/19/16 11:17	AJD	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348276	08/18/16 15:03	PJG	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347264	08/10/16 10:05	BJH	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347377	08/10/16 16:11	PJ1	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347664	08/12/16 17:14	KML	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347377	08/10/16 16:05	PJ1	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347664	08/12/16 17:08	KML	TAL CHI
Dissolved	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347294	08/10/16 09:06	MJD	TAL CHI
Total/NA	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347294	08/10/16 08:56	MJD	TAL CHI
Total/NA	Analysis	9034		1	347254		CLB	TAL CHI
					(Start)	08/10/16 08:46		
					(End)	08/10/16 08:49		
Total/NA	Analysis	9038		1	347937		CLB	TAL CHI
					(Start)	08/16/16 09:12		
					(End)	08/16/16 09:13		
Total/NA	Analysis	9060A		2	348022	08/15/16 23:06	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348194	08/17/16 17:15	CRB	TAL CHI
Total/NA	Analysis	SM 2540D		1	347120		MTB	TAL CHI
					(Start)	08/09/16 11:10		
					(End)	08/09/16 11:12		
Total/NA	Prep	SM 4500 NH3 B			347976	08/16/16 12:55	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	348153	08/17/16 11:44	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	348031		JBJ	TAL CHI
					(Start)	08/09/16 21:31		
					(End)	08/09/16 21:32		
Total/NA	Analysis	SM 4500 NO3 F		1	347719	08/12/16 20:28	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Date Collected: 08/08/16 13:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347370	08/11/16 20:16	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	5	347520	08/12/16 10:09	TCT	TAL CHI
Total/NA	Prep	3510C			347480	08/11/16 16:33	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347565	08/12/16 18:20	AJD	TAL CHI
Total/NA	Prep	3510C	DL		347480	08/11/16 16:33	JP1	TAL CHI
Total/NA	Analysis	8270D	DL	5	348460	08/19/16 15:17	AJD	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348276	08/18/16 15:22	PJG	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347264	08/10/16 10:20	BJH	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347377	08/10/16 16:20	PJ1	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347664	08/12/16 17:31	KML	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347377	08/10/16 16:16	PJ1	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347664	08/12/16 17:19	KML	TAL CHI
Dissolved	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347294	08/10/16 09:09	MJD	TAL CHI
Total/NA	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347294	08/10/16 09:07	MJD	TAL CHI
Total/NA	Analysis	9034		1	347254		CLB	TAL CHI
					(Start)	08/10/16 08:57		
					(End)	08/10/16 09:00		
Total/NA	Analysis	9038		1	347937		CLB	TAL CHI
					(Start)	08/16/16 09:13		
					(End)	08/16/16 09:14		
Total/NA	Analysis	9060A		1	348022	08/15/16 23:22	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348194	08/17/16 17:15	CRB	TAL CHI
Total/NA	Analysis	SM 2540D		1	347120		MTB	TAL CHI
					(Start)	08/09/16 11:12		
					(End)	08/09/16 11:14		
Total/NA	Prep	SM 4500 NH3 B			347976	08/16/16 12:55	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	348153	08/17/16 11:47	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	348031		JBJ	TAL CHI
					(Start)	08/09/16 21:33		
					(End)	08/09/16 21:33		
Total/NA	Analysis	SM 4500 NO3 F		1	347719	08/12/16 20:31	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016

Date Collected: 08/08/16 13:30
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	347370	08/11/16 20:45	TCT	TAL CHI
Total/NA	Prep	3510C	DL2		347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D	DL2	25	348460	08/19/16 13:57	AJD	TAL CHI
Total/NA	Prep	3510C	DL		347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D	DL	5	348460	08/19/16 14:24	AJD	TAL CHI
Total/NA	Prep	3510C	DL3		347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D	DL3	50	348460	08/19/16 14:51	AJD	TAL CHI
Total/NA	Prep	3510C			347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347248	08/10/16 17:06	AJD	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348276	08/18/16 15:41	PJG	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347264	08/10/16 10:35	BJH	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347377	08/10/16 16:38	PJ1	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347664	08/12/16 17:40	KML	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347377	08/10/16 16:32	PJ1	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347664	08/12/16 17:35	KML	TAL CHI
Dissolved	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347294	08/10/16 09:11	MJD	TAL CHI
Total/NA	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347294	08/10/16 09:10	MJD	TAL CHI
Total/NA	Analysis	9034		1	347254		CLB	TAL CHI
					(Start)	08/10/16 09:00		
					(End)	08/10/16 09:04		
Total/NA	Analysis	9038		1	347937		CLB	TAL CHI
					(Start)	08/16/16 09:17		
					(End)	08/16/16 09:18		
Total/NA	Analysis	9060A		1	348022	08/16/16 05:58	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348194	08/17/16 17:15	CRB	TAL CHI
Total/NA	Analysis	SM 2540D		1	347120		MTB	TAL CHI
					(Start)	08/09/16 11:14		
					(End)	08/09/16 11:16		
Total/NA	Prep	SM 4500 NH3 B			347976	08/16/16 12:55	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	348153	08/17/16 11:50	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	348031		JBJ	TAL CHI
					(Start)	08/09/16 21:33		
					(End)	08/09/16 21:34		
Total/NA	Analysis	SM 4500 NO3 F		1	347719	08/12/16 20:33	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20

Matrix: Water

Date Received: 08/08/16 17:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347370	08/11/16 21:14	TCT	TAL CHI
Total/NA	Analysis	8260B	DL	10	347370	08/11/16 21:42	TCT	TAL CHI
Total/NA	Prep	3510C			347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347248	08/10/16 17:34	AJD	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348276	08/18/16 16:19	PJG	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347264	08/10/16 16:02	BJH	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347377	08/10/16 16:48	PJ1	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347664	08/12/16 17:51	KML	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347377	08/10/16 16:43	PJ1	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347664	08/12/16 17:46	KML	TAL CHI
Dissolved	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347294	08/10/16 09:15	MJD	TAL CHI
Total/NA	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347294	08/10/16 09:13	MJD	TAL CHI
Total/NA	Analysis	9034		1	347254		CLB	TAL CHI
					(Start)	08/10/16 09:04		
					(End)	08/10/16 09:08		
Total/NA	Analysis	9038		10	348065		CLB	TAL CHI
					(Start)	08/17/16 06:47		
					(End)	08/17/16 06:48		
Total/NA	Analysis	9060A		1	348022	08/15/16 23:55	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348194	08/17/16 17:15	CRB	TAL CHI
Total/NA	Analysis	SM 2540D		1	347120		MTB	TAL CHI
					(Start)	08/09/16 11:16		
					(End)	08/09/16 11:18		
Total/NA	Prep	SM 4500 NH3 B			347976	08/16/16 12:55	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	348153	08/17/16 11:53	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	348031		JBJ	TAL CHI
					(Start)	08/09/16 21:34		
					(End)	08/09/16 21:34		
Total/NA	Analysis	SM 4500 NO3 F		1	348058	08/16/16 20:07	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Date Collected: 08/08/16 15:40
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347370	08/11/16 22:10	TCT	TAL CHI
Total/NA	Prep	3510C			347168	08/09/16 15:52	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347565	08/12/16 19:13	AJD	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348276	08/18/16 16:00	PJG	TAL CHI
Total/NA	Prep	3510C			347128	08/09/16 12:29	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347264	08/10/16 11:06	BJH	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347377	08/10/16 16:58	PJ1	TAL CHI
Dissolved	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Dissolved	Analysis	6010C		1	347664	08/12/16 18:00	KML	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347377	08/10/16 16:53	PJ1	TAL CHI
Total/NA	Prep	3010A			347157	08/09/16 15:09	JNH	TAL CHI
Total/NA	Analysis	6010C		1	347664	08/12/16 17:56	KML	TAL CHI
Dissolved	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347294	08/10/16 09:17	MJD	TAL CHI
Total/NA	Prep	7470A			347132	08/09/16 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347294	08/10/16 09:16	MJD	TAL CHI
Total/NA	Analysis	9034		1	347254		CLB	TAL CHI
					(Start)	08/10/16 09:08		
					(End)	08/10/16 09:11		
Total/NA	Analysis	9038		1	348065		CLB	TAL CHI
					(Start)	08/17/16 06:48		
					(End)	08/17/16 06:49		
Total/NA	Analysis	9060A		1	348022	08/16/16 00:11	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348194	08/17/16 17:15	CRB	TAL CHI
Total/NA	Analysis	SM 2540D		1	347120		MTB	TAL CHI
					(Start)	08/09/16 11:18		
					(End)	08/09/16 11:20		
Total/NA	Prep	SM 4500 NH3 B			347976	08/16/16 12:55	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	348153	08/17/16 12:54	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	348031		JBJ	TAL CHI
					(Start)	08/09/16 21:34		
					(End)	08/09/16 21:35		
Total/NA	Analysis	SM 4500 NO3 F		1	348058	08/16/16 20:08	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-115433 COC

(optional)
Report To
Contact: Jack Kratkmeyer
Company: Arcadis
Address: 120 S. LaSalle St
Address: Ste 1350 Chicago IL
Phone: 312-575-3700
Fax:
E-Mail: jack.kratkmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job # 500-115433
Chain of Custody Number:
Page 1 of 1
Temperature °C of Cooler: 2.8, 3.1, 2.4

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 50011099
Sampler: M. Schettler / B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCB, Pesticide (None)	Total metals (Nitric)	Diss Metals (Nitric)	Ammonia, NO3, NO2 (Sulfuric)	Sulfide (Zinc *)	VOCs (1)	TOC (Sulfuric)	TSS, SO4, NO2 (None)	Diss. Gas (Trisodium phosphate)	Comments
1		MW-01-GW-08082016	8/8/16	1100	18	W										See order
2		MW-02-GW-08082016	↓	1300	18	W										for Methods
3		MW-03-GW-08082016		1330	18	W										+ Modified
4		[redacted]-GW-08082016		1520	18	W										TCL lists.
5		MW-05-GW-08082016		1540	18	W										

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: STANDARD

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Megan Schettler	Arcadis	08/08/2016	1650	Ben Thurnhoffer	Arcadis	8-8-16	1600
Ben Thurnhoffer	Arcadis	8-8-2016	1705	[illegible]	TA	8/8/16	1705
[illegible]	TA	8/8/16	1745	[illegible]	TA-CHI	8/9/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Level IV data package
* Zinc acetate + Sodium hydroxide

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-115433-1

Login Number: 115433
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8,3.1,2.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-115433-2
Client Project/Site: Lake Calumet Cluster Site
Revision: 1

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
8/25/2016 11:24:52 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-2

Job ID: 500-115433-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-115433-2

Comments
No additional comments.

Receipt
The samples were received on 8/8/2016 5:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.8º C and 3.1º C.

Receipt Exceptions

Revised Report - Removed TA Detection Summary.

Dissolved gas vials were ordered from Pace Analytical Energy Services (formerly Microseeps) for the analysis of methane, oxygen, carbon dioxide and nitrogen and shipped to TestAmerica, and then delivered to the job site by TestAmerica. Upon shipping the collected samples back to Pace it was determined that Pace had shipped the wrong vials to TestAmerica. The correct vials should have been 40 ml vials with Benzylakonium Chloride as a preservative. Instead, the lab had shipped 40 ml vials with Trisodium Phosphate as a preservative.

Based on the recommendation of the Pace Technical Director, it was determined that analysis for methanol, oxygen and nitrogen would not be affected by the presence of trisodium phosphate, and the submitted vials could be tested for 3 out of the 4 dissolved gases. However, the trisodium phosphate would affect on the carbon dioxide result since it would lower the pH of the vial, and CO2 would be lost. TestAmerica was advised to ship an extra unopened 250 ml amber glass unpreserved sample to Pace for analysis for carbon dioxide.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

August 24, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-115433-2**

Pace Workorder: 19878

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, August 10, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 08/24/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages ____

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 19878 500-115433-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
198780001	MW-01-GW-08082016	Water	8/8/2016 11:00	8/10/2016 11:00
198780002	MW-02-GW-08082016	Water	8/8/2016 13:00	8/10/2016 11:00
198780003	MW-03-GW-08082016	Water	8/8/2016 13:30	8/10/2016 11:00
198780004	MW-04-GW-08082016	Water	8/8/2016 15:20	8/10/2016 11:00
198780005	MW-05-GW-08082016	Water	8/8/2016 15:40	8/10/2016 11:00

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PROJECT SUMMARY

Workorder: 19878 500-115433-2

Workorder Comments

The methane, oxygen and nitrogen analyses were performed from samples collected in trisodium phospate vials and the carbon dioxide analyses were performed from a sample collected in an unpreserved amber bottle.

The container pH for samples 19878 (0005) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

On August 14 the laboratory experienced a failure of a walk in cooler. This project contained samples stored in that cooler. As soon as we became aware of the issue the samples were moved to other operational coolers. Our bottles and preservation techniques are the primary mode of protecting sample integrity and temperature is a secondary line of protection. Based on our in lab sample preservation studies we believe there were no adverse impacts on sample results.

This report is being re-issued following corrections made to process the available results based upon the before mentioned container preservation designations; 08/24/2016.

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780001** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-01-GW-08082016** Date Collected: 8/8/2016 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**11000**	ug/l	0.50	0.027	1	8/17/2016 05:31	TD	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	8/13/2016 14:38	TD	n
Oxygen	**4.1**	mg/l	0.50	0.13	1	8/17/2016 05:31	TD	n
Nitrogen	**9.5**	mg/l	2.0	0.24	1	8/17/2016 05:31	TD	n

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780002** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-02-GW-08082016** Date Collected: 8/8/2016 13:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	8/17/2016 05:44	TD	n
Carbon Dioxide	**240**	mg/l	5.0	0.24	1	8/13/2016 14:51	TD	n
Oxygen	**1.4**	mg/l	0.50	0.13	1	8/17/2016 05:44	TD	n
Nitrogen	**4.1**	mg/l	2.0	0.24	1	8/17/2016 05:44	TD	n

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780003** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-03-GW-08082016** Date Collected: 8/8/2016 13:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX)			Analytical Method: AM20GAX					
Methane	**24000**	ug/l	0.50	0.027	1	8/17/2016 05:58	TD	n
Carbon Dioxide	**36**	mg/l	5.0	0.24	1	8/13/2016 15:05	TD	n
Oxygen	**1.3**	mg/l	0.50	0.13	1	8/17/2016 05:58	TD	n
Nitrogen	**4.8**	mg/l	2.0	0.24	1	8/17/2016 05:58	TD	n

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780004** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-04-GW-08082016** Date Collected: 8/8/2016 15:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**17000**	ug/l	0.50	0.027	1	8/17/2016 06:11	TD	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	8/13/2016 15:19	TD	n
Oxygen	**0.99**	mg/l	0.50	0.13	1	8/17/2016 06:11	TD	n
Nitrogen	**8.2**	mg/l	2.0	0.24	1	8/17/2016 06:11	TD	n

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780005** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-05-GW-08082016** Date Collected: 8/8/2016 15:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	8/17/2016 06:24	TD	n
Carbon Dioxide	**270**	mg/l	5.0	0.24	1	8/13/2016 15:33	TD	n
Oxygen	**1.2**	mg/l	0.50	0.13	1	8/17/2016 06:24	TD	n
Nitrogen	**4.6**	mg/l	2.0	0.24	1	8/17/2016 06:24	TD	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 19878 500-115433-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 19878 500-115433-2

QC Batch: DISG/5547 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 198780001, 198780002, 198780003, 198780004, 198780005

METHOD BLANK: 43572

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n

LABORATORY CONTROL SAMPLE & LCSD: 43573 43574

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	120	111	103	80-120	7.5	20	n

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QUALITY CONTROL DATA

Workorder: 19878 500-115433-2

QC Batch: DISG/5552 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 198780001, 198780002, 198780003, 198780004, 198780005

METHOD BLANK: 43606

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 43607

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 43608 43610

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	880	860	117	116	80-120	0.86	20	n

LABORATORY CONTROL SAMPLE & LCSD: 43609 43611

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Oxygen	mg/l	11	12	12	108	107	80-120	0.93	20	n
Nitrogen	mg/l	140	140	130	99	91	80-120	8.4	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 19878 500-115433-2

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 19878 500-115433-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
198780001	MW-01-GW-08082016			AM20GAX	DISG/5547
198780002	MW-02-GW-08082016			AM20GAX	DISG/5547
198780003	MW-03-GW-08082016			AM20GAX	DISG/5547
198780004	MW-04-GW-08082016			AM20GAX	DISG/5547
198780005	MW-05-GW-08082016			AM20GAX	DISG/5547
198780001	MW-01-GW-08082016			AM20GAX	DISG/5552
198780002	MW-02-GW-08082016			AM20GAX	DISG/5552
198780003	MW-03-GW-08082016			AM20GAX	DISG/5552
198780004	MW-04-GW-08082016			AM20GAX	DISG/5552
198780005	MW-05-GW-08082016			AM20GAX	DISG/5552

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TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19878

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8/25/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76560.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115433-2
Address: 220 William Pitt Way, ,	Due Date Requested: 8/18/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-01-GW-08082016 (500-115433-1)	8/8/16	11:00 Central		Water			X	2	
MW-02-GW-08082016 (500-115433-2)	8/8/16	13:00 Central		Water			X	2	
MW-03-GW-08082016 (500-115433-3)	8/8/16	13:30 Central		Water			X	2	
MW-04-GW-08082016 (500-115433-4)	8/8/16	15:20 Central		Water			X	2	
MW-05-GW-08082016 (500-115433-5)	8/8/16	15:40 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

1.2°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 08/09/16 1400	Company TA	Received by:	Date/Time: 8.10.16 1100	Company PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19878

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8/25/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76651.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115433-2
Address: 220 William Pitt Way, ,	Due Date Requested: 8/18/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - ~~Methane~~, Carbon Dioxide, ~~Oxygen~~ and ~~Nitrogen~~)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-01-GW-08082016 (500-115433-1)	8/8/16	11:00 Central		Water			X	1	
MW-02-GW-08082016 (500-115433-2)	8/8/16	13:00 Central		Water			X	1	
MW-03-GW-08082016 (500-115433-3)	8/8/16	13:30 Central		Water			X	1	
MW-04-GW-08082016 (500-115433-4)	8/8/16	15:20 Central		Water			X	1	
MW-05-GW-08082016 (500-115433-5)	8/8/16	15:40 Central		Water			X	1	

Possible Hazard Identification
Unconfirmed 0.5°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	08/10/16 1600	TA	[signature]	8.11.16 1100	PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

NON-CONFORMANCE FORM

PAES Work Order #: 19878

Date: 8.10.16 Time of Receipt: 11:00 Receiver: LJ

Client: TA Chicago.

REASON FOR NON-CONFORMANCE:

Requested Permanent Gases also.
Samples were in TSP vials.

ACTION TAKEN:

Client name: Date: Time:

Client provided unpreserved bottle for CO_2
Methane, oxygen & nitrogen should be analyzed
from TSP vials per discussion w P. McLoughlin

Customer Service Initials: RW Date: 8-11-16

F-PAE-Q-014-rev.00, 20 Nov2014

1
2
3
4
5
6

Mark Mikesell - IMPORTANT - Arcadis Lake Calumet Cluster - Dissolved Gases - - Please call

---

From: "Hargraves, Therese" <Therese.Hargraves@testamericainc.com>
To: "Patrick McLoughlin" <Patrick.McLoughlin@pacelabs.com>
Date: 8/23/2016 5:52 PM
Subject: IMPORTANT - Arcadis Lake Calumet Cluster - Dissolved Gases - - Please call
Cc: "Ruth Welsh" <Ruth.Welsh@pacelabs.com>

19870, 19879
Signed:
✓ 08/24/16

Ruth and Patrick,

Based on our conference call on 8/10/16 to discuss how to analyze for the 4 dissolved gases methane, oxygen, carbon dioxide and nitrogen from the incorrectly shipped trisodium phosphate vials, it was agreed to analyze the samples in the following manner:

1. Methane, oxygen and nitrogen (3 out of 4) would be analyzed out of the 40 ml vial with trisodium phosphate vial since Patrick McLoughlin indicated that these vials would not affect these 3 gases.
2. Carbon dioxide could not be analyzed from the trisodium phosphate vials since it would lower the pH too much and CO would be lost. You recommended that TestAmerica send an unopened 250ml amber unpreserved bottle to perform the CO2 analysis from.

From looking at the raw data, it appears that methane has one time of analysis, and CO2, oxygen and nitrogen all have another time of analysis. This could not be possible if only the CO2 was analyzed from a differerit container.

Please call me first thing in the morning to discuss since you did not appear to do what we discussed in the conference call.

SHIPPING ALERT: Labor Day, Monday September 5th 2016

For the upcoming Labor Day holiday (observed Monday, September 5th) FedEx and UPS will not have scheduled service on Monday September 5th.

If you have BODs sampled August 29th, 30th or 31st, or short hold samples arriving Friday, September 2nd or on the weekend, we ask that you contact your Project Manager in advance to ensure your samples meet all holding time criteria.

We are thankful for your business and hope that you have a wonderful and safe holiday!

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback.

THERESE HARGRAVES
Project Manager

TestAmerica

Cooler Receipt Form

Client Name: TA Chicago Project: 500-115433-2 Lab Work Order: 19878

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 6514 8426 2439

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 1.2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)		✓		
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LO Date: 8.10.16

Project Manager Review: RW Date: 8-12-16

F-PAE-Q-009-rev.00, 20 Nov2014

Sample Tracking Record

Client Name: Test America

Page _____ of _____

Client Project Number: 500-115433-2

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas TSP/ unpreserved				
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
198781/1-5				see above	LJ	8.10.16	11:00
↓	TD	8-17-16	330	↓ TSP	TD	8-17-16	1330
198782/1-5	TD/mh.	08/31/16	10:00	unpres.	TD/mh.	08/31/16	15:00

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-115433 COC

(optional)
Report To
Contact: Jack Kratkmeyer
Company: Arcadis
Address: 120 S. LaSalle St
Address: Ste 1350 Chicago IL
Phone: 312-575-3700
Fax:
E-Mail: jack.kratkmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job # 500-115433
Chain of Custody Number:
Page 1 of 1
Temperature °C of Cooler 2.8, 3.1, 2.4

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 50011099
Sampler: M. Schettler / B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCB, Pesticide (None)	Total metals (Nitric)	Diss Metals (Nitric)	Ammonia, NO3, NO2 (Sulfuric)	Sulfide (Zinc *)	VOCs (1)	TOC (Sulfuric)	TSS, SO4, NO2 (None)	Diss. Gas (Trisodium phosphate)	Comments
1		MW-01-GW-08082016	8/8/16	1100	18	W										See order
2		MW-02-GW-08082016	↓	1300	18	W										for Methods
3		MW-03-GW-08082016		1330	18	W										+ Modified
4		[redacted]-GW-08082016		1520	18	W										TCL lists.
5		MW-05-GW-08082016		1540	18	W										

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Megan Schettler	Arcadis	08/08/2016	1650	Ben Thurnhoffer	Arcadis	8-8-16	1600
Ben Thurnhoffer	Arcadis	8-8-2016	1705	[illegible]	TA	8/8/16	1705
[illegible]	TA	8/8/16	1745	[illegible]	TA-CHI	8/9/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Level IV data package
* Zinc acetate + Sodium hydroxide

Lab Comments:

TAL-4124-500 (1209)
8/25/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-115433-2

Login Number: 115433
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8,3.1,2.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-115474-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
8/24/2016 1:38:44 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-115474-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-115474-1

Comments
No additional comments.

Receipt
The samples were received on 8/9/2016 5:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 2.3º C, 2.4º C, 2.7º C, 2.8º C, 3.1º C and 3.3º C.

GC/MS VOA
Method(s) 8260B: The initial calibration verification (ICV) result for Dichlorodifluoromethane was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

Method(s) 8260B: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-13-GW-08092016 (500-115474-7) and DUP-1(08092016) (500-115474-8). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-06-GW-08092016 (500-115474-1), MW-07-GW-08092016 (500-115474-2) and DUP-2(08092016) (500-115474-9). The samples were analyzed within 7 days per EPA recommendation therefore no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following samples were diluted due to the nature of the sample matrix: MW-06-GW-08092016 (500-115474-1), MW-07-GW-08092016 (500-115474-2), MW-13-GW-08092016 (500-115474-7), DUP-1(08092016) (500-115474-8) and DUP-2(08092016) (500-115474-9). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: Perylene-d12 (ISTD6) responses fell below the QC limit for the following samples:MW-06-GW-08092016 (500-115474-1) and DUP-2(08092016) (500-115474-9). For the associated analytes, the chromatograms and mass spectra have been evaluated. Re-analysis of the sample yielded similar results and the both analysis have been reported. The results for the affected analytes should be considered estimated and have been flagged accordingly.

Method(s) 8270D: The following samples contained one acid and/or one base/neutral surrogate outside acceptance limits: MW-06-GW-08092016 (500-115474-1), MW-07-GW-08092016 (500-115474-2) and DUP-2(08092016) (500-115474-9). The laboratory's SOP allows one acid and one base/neutral surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS associated with batch 500-348028 had 1 analyte outside control limits: 4-Nitrophenol. The LCSD was in control for all analytes. (LCS 500-348028/2-A)

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. ICV 500-346390/13 had Benzaldehyde at 85.4%D, low. ICV 500-347575/13 had Benzaldehyde at 78.2%D, low. All other analytes were in control.(ICV 500-346390/13) and (ICV 500-347575/13)

Method(s) 8270D: CCVIS 500-347729/2 was outside the method criteria for Benzaldehyde (38.6%D, low); N-Nitrosodi-n-propylamine (29.7%D, low); Acetophenone (25.2%D, low); Hexachlorocyclopentadiene (25.9%D, low); Pentachlorophenol (21.0%D, low); and Indeno]1,2,3-cd]pyrene (24.6%D, high). CCVIS 500-347999/2 was outside the method criteria for Benzaldehyde (38.4%D, low); 2-Methylphenol (25.1%D, low); N-Nitrosodi-n-propylamine (24.1%D, low); Acetophenone (22.0%D, low); Hexachlorocyclopentadiene (30.2%D, low); Pentachlorophenol (22.1%D, low); and Indeno]1,2,3-cd]pyrene (26.5%D, high). CCVIS 500-348088/2 was outside the method criteria for Benzaldehyde (29.1%D, high) and 2,4,5-Trichlorophenol (22.1%D, high). A CCV standard at or below the reporting

Job ID: 500-115474-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.(CCVIS 500-347729/2), (CCVIS 500-347999/2) and (CCVIS 500-348088/2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8082A: The initial calibration verification (ICV) result for batch 347013 was above the upper control limit for AR1660 peak3 on the ZB CLP2 column. Sample results were non-detects, and have been reported as qualified data.

Method(s) 8082A: The initial calibration verification (ICV) result for batch 347013 was above the upper control limit on the ZB-5 column. No further action was taken.

Method(s) 8082A: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-06-GW-08092016 (500-115474-1), MW-10-GW-08092016 (500-115474-5), MW-13-GW-08092016 (500-115474-7), DUP-1(08092016) (500-115474-8) and DUP-2(08092016) (500-115474-9). The reagent lot number used was: 142098.

Method(s) 8081B: The following samples were diluted due to the nature of the sample matrix: MW-07-GW-08092016 (500-115474-2), MW-13-GW-08092016 (500-115474-7), DUP-1(08092016) (500-115474-8) and DUP-2(08092016) (500-115474-9). Elevated reporting limits (RLs) are provided.

Method(s) 8081B: Tetrachloro-m-xylene surrogate recovery for the following samples were outside the upper control limit: MW-13-GW-08092016 (500-115474-7) and DUP-1(08092016) (500-115474-8). This sample did not contain any target analytes; therefore, re-extraction and re-analysis was not performed.

Method(s) 8081B: DCB Decachlorobiphenyl surrogate recovery for the following samples were outside control limits: MW-06-GW-08092016 (500-115474-1), MW-07-GW-08092016 (500-115474-2) and DUP-2(08092016) (500-115474-9). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed. Also, Tetrachloro-m-xylene was in control.

Method(s) 608, 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-06-GW-08092016 (500-115474-1), MW-07-GW-08092016 (500-115474-2), MW-08-GW-08092016 (500-115474-3), MW-09-GW-08092016 (500-115474-4), MW-10-GW-08092016 (500-115474-5), MW-11-GW-08092016 (500-115474-6), MW-13-GW-08092016 (500-115474-7), DUP-1(08092016) (500-115474-8) and DUP-2(08092016) (500-115474-9). The reagent lot number used was: 142098.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 500-347806 recovered above the upper control limit for PCB-1016, PCB-1260 and DCB Decachlorobiphenyl. The sample associated with this CCV was non-detect for the affected analytes; therefore, the data have been reported.

Method(s) 8082A: DCB Decachlorobiphenyl surrogate recovery for the following samples were outside control limits: MW-06-GW-08092016 (500-115474-1) and DUP-2(08092016) (500-115474-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8082A: DCB Decachlorobiphenyl and/or Tetrachloro-m-xylene surrogate recovery for the following sample was outside control limits: MW-07-GW-08092016 (500-115474-2). Re-extraction (RE) and re-analysis was performed with concurring results. Both sets of data have been reported.

Method(s) 8082A: The %RPD between the primary and confirmation column exceeded 40% for PCB-1242 for the following sample: MW-07-GW-08092016 (500-115474-2). The higher value has been reported and qualified in accordance with the laboratory's SOP.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The continuing calibration blank (CCB) contained Cadmium, Selenium, and Thallium above the reporting limit (RL). The sample DUP-2(08092016) (500-115474-9) associated with this CCB did not contain the target compound; therefore, re-analysis of

Job ID: 500-115474-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

samples was not performed.

Method(s) 6010C: The low-level CCV at line 8 in 6010C batch 500-347665 was above the method acceptance limits of 70-130% recovery for Lead. The sample DUP-2(08092016) (500-115474-9) was bracketed. A low level standard (MRL) at the reporting limit was run prior to the samples was within control limits. The mid-range bracketing the data were all within the 90-110% recovery limits. The sample was reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method(s) 9060A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for TOC batch 348022 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 NO2 B: Due to their matrices, the following samples in Nitrite batch 347287 were diluted and the results were reported with an elevated reporting limit: MW-06-GW-08092016 (500-115474-1), MW-07-GW-08092016 (500-115474-2), MW-11-GW-08092016 (500-115474-6) and DUP-2(08092016) (500-115474-9).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016 — Lab Sample ID: 500-115474-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	66		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.0		0.50	0.15	ug/L	1		8260B	Total/NA
Carbon disulfide	1.1	J	2.0	0.45	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.3		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.1		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	13		1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.6		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	86		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	5.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	25		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	28		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	160		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	3.6		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	340		10	2.2	ug/L	10		8260B	Total/NA
Acetophenone	6.3	J	18	2.4	ug/L	5		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	69		37	6.3	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	2.8	J	7.3	0.24	ug/L	5		8270D	Total/NA
2-Methylphenol	17		7.3	1.1	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	130		7.3	1.6	ug/L	5		8270D	Total/NA
Naphthalene	17		3.7	1.1	ug/L	5		8270D	Total/NA
Phenanthrene	1.1	J	3.7	1.1	ug/L	5		8270D	Total/NA
Phenol	44		18	2.5	ug/L	5		8270D	Total/NA
PCB-1242	3.8		0.36	0.18	ug/L	1		8082A	Total/NA
Aluminum	0.34		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.028		0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.34		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0019	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	34		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.10		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.030		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.011		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	1.2		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.096		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	29		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.011		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.12		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	530		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0069	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	2800		5.0	2.2	mg/L	5		6010C	Total/NA
Vanadium	0.062		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.13		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.16	J	0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.0070	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.027		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.33		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	34		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.097		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.030		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0046	J	0.010	0.0022	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016 (Continued) — Lab Sample ID: 500-115474-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.96		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.021		0.0050	0.0025	mg/L	1		6010C	Dissolved
Magnesium	29		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.0093	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.12		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	530		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0073	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	2700		5.0	2.2	mg/L	5		6010C	Dissolved
Vanadium	0.056		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.039		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00026	B	0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	5.4		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	49	B	20	5.9	mg/L	4		9038	Total/NA
Total Organic Carbon - Duplicates	280		10	2.7	mg/L	10		9060A	Total/NA
Total Suspended Solids	7.0		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	490	B	40	5.7	mg/L	50		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.035	J	0.040	0.018	mg/L	2		SM 4500 NO2 B	Total/NA

Client Sample ID: MW-07-GW-08092016 — Lab Sample ID: 500-115474-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	46		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	12		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	8.9		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	0.73	J	1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	8.9		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	15		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	160		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	10		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.4		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	24		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	100		5.0	2.2	ug/L	1		8260B	Total/NA
Vinyl chloride	12		0.50	0.20	ug/L	1		8260B	Total/NA
Toluene - DL	420		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	760		10	2.2	ug/L	10		8260B	Total/NA
Anthracene	3.3	J	7.5	2.5	ug/L	10		8270D	Total/NA
Benzo[a]pyrene	3.2		1.5	0.74	ug/L	10		8270D	Total/NA
Benzo[b]fluoranthene	3.6		1.5	0.61	ug/L	10		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	270		75	13	ug/L	10		8270D	Total/NA
Carbazole	5.7	J	38	2.7	ug/L	10		8270D	Total/NA
Chrysene	3.3	J	3.8	0.51	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	370		75	14	ug/L	10		8270D	Total/NA
Fluoranthene	12		7.5	3.4	ug/L	10		8270D	Total/NA
Indeno[1,2,3-cd]pyrene	2.0		1.5	0.56	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	6.0	J	15	0.49	ug/L	10		8270D	Total/NA
2-Methylphenol	75		15	2.3	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	290		15	3.4	ug/L	10		8270D	Total/NA
Naphthalene	38		7.5	2.3	ug/L	10		8270D	Total/NA
Phenanthrene	16		7.5	2.3	ug/L	10		8270D	Total/NA
Pyrene	9.7		7.5	3.2	ug/L	10		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-07-GW-08092016 (Continued) — Lab Sample ID: 500-115474-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1242	7.0		0.39	0.19	ug/L	1		8082A	Total/NA
Aluminum	1.8		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.017	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.058		0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.56		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0076		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	11		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.48		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.043		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.082		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	4.3		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.70		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	20		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.017		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.16		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	620		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.011		0.010	0.0051	mg/L	1		6010C	Total/NA
Silver	0.0018	J	0.0050	0.0013	mg/L	1		6010C	Total/NA
Sodium	3400		5.0	2.2	mg/L	5		6010C	Total/NA
Vanadium	0.081		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	1.1		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	1.0		0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.0099	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.052		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.51		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0032		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	11		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.45		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.045		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.028		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	3.8		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.15		0.0050	0.0025	mg/L	1		6010C	Dissolved
Magnesium	21		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.014		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.17		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	660		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.012		0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	3500		5.0	2.2	mg/L	5		6010C	Dissolved
Vanadium	0.072		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.41		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.0013	B	0.00020	0.00011	mg/L	1		7470A	Total/NA
Mercury	0.00050	B	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	5.8		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	36	J B	50	15	mg/L	10		9038	Total/NA
Total Organic Carbon - Duplicates	650		40	11	mg/L	40		9060A	Total/NA
Nitrogen, Nitrate	0.12		0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	12		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	630	B	40	5.7	mg/L	50		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.12		0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016 — Lab Sample ID: 500-115474-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	10		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	82		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	37		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	230		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.71		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	10		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	91		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	41		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	250		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00017	J B	0.00020	0.00011	mg/L	1		7470A	Total/NA
Mercury	0.00011	J B	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfate	2.4	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	16	F1	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	23		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	41	B	4.0	0.57	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-09-GW-08092016 — Lab Sample ID: 500-115474-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.6		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	15		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.8		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.5		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.4		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.4		1.0	0.32	ug/L	1		8260B	Total/NA
Acenaphthene	1.0		0.78	0.24	ug/L	1		8270D	Total/NA
Dibenzofuran	0.22	J	1.6	0.20	ug/L	1		8270D	Total/NA
Fluorene	0.49	J	0.78	0.19	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.5		1.6	0.051	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	2.5		1.6	0.35	ug/L	1		8270D	Total/NA
Naphthalene	0.33	J	0.78	0.24	ug/L	1		8270D	Total/NA
Phenanthrene	0.55	J	0.78	0.23	ug/L	1		8270D	Total/NA
Barium	0.83		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0044	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	25		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	83		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	76		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	200		1.0	0.43	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016 (Continued) — Lab Sample ID: 500-115474-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.81		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0039	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	25		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	82		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.17		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	75		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00012	J B	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfate	3.9	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	27		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	52		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	74	B	4.0	0.57	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-10-GW-08092016 — Lab Sample ID: 500-115474-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.56		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	1.6		1.0	0.39	ug/L	1		8260B	Total/NA
Diethyl phthalate	0.34	J	1.5	0.26	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.96		0.73	0.27	ug/L	1		8270D	Total/NA
Barium	0.46		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0033	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	7.0		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0035	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	60		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.56		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	56		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	160		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.032		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.47		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0010	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	7.4		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	64		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.61		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	58		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	170		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00014	J B	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	0.57	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	75	B	20	5.9	mg/L	4		9038	Total/NA
Total Organic Carbon - Duplicates	17		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	17		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	14	B	1.0	0.14	mg/L	5		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-11-GW-08092016 — Lab Sample ID: 500-115474-6

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016 (Continued) — Lab Sample ID: 500-115474-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	16		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	100		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	10		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	4.6		1.0	0.51	ug/L	1		8260B	Total/NA
Cyclohexane	100		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.1		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.2		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	11		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	51		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	110		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	8.2		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	67		1.0	0.22	ug/L	1		8260B	Total/NA
Acetophenone	0.57	J	3.7	0.49	ug/L	1		8270D	Total/NA
Diethyl phthalate	0.62	J	1.5	0.27	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.3		1.5	0.048	ug/L	1		8270D	Total/NA
Naphthalene	2.4		0.74	0.23	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	1.3		0.74	0.27	ug/L	1		8270D	Total/NA
Phenanthrene	0.36	J	0.74	0.22	ug/L	1		8270D	Total/NA
Phenol	0.97	J	3.7	0.50	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	2.6	J	3.7	0.27	ug/L	1		8270D	Total/NA
Barium	0.85		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0088	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0014	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0026	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	29		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0043	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.24		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.017		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	110		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	350		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0058		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.011	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.82		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0081	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0013	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0028	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	110		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.23		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	110		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	350		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0050		0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	0.46	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	5.9	B	5.0	1.5	mg/L	1		9038	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016 (Continued) — Lab Sample ID: 500-115474-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	67		4.0	1.1	mg/L	4		9060A	Total/NA
Total Suspended Solids	73		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	60	B	4.0	0.57	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-13-GW-08092016 — Lab Sample ID: 500-115474-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	30		25	8.7	ug/L	5		8260B	Total/NA
Benzene	430		2.5	0.73	ug/L	5		8260B	Total/NA
Chlorobenzene	3.1	J	5.0	1.9	ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	43		5.0	2.0	ug/L	5		8260B	Total/NA
1,2-Dichlorobenzene	12		5.0	1.7	ug/L	5		8260B	Total/NA
1,1-Dichloroethane	19		5.0	2.1	ug/L	5		8260B	Total/NA
Isopropylbenzene	75		5.0	1.9	ug/L	5		8260B	Total/NA
Trichloroethene	3.7		2.5	0.82	ug/L	5		8260B	Total/NA
Vinyl chloride	10		2.5	1.0	ug/L	5		8260B	Total/NA
Ethylbenzene - DL	1200		25	9.2	ug/L	50		8260B	Total/NA
Toluene - DL	2800		25	7.6	ug/L	50		8260B	Total/NA
Xylenes, Total - DL	8200		50	11	ug/L	50		8260B	Total/NA
Acenaphthylene	2.7	J	3.7	1.0	ug/L	5		8270D	Total/NA
Diethyl phthalate	9.0		7.4	1.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	34	J	37	6.7	ug/L	5		8270D	Total/NA
Di-n-butyl phthalate	4.4	J	19	2.7	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	11		7.4	0.24	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	54		7.4	1.7	ug/L	5		8270D	Total/NA
Naphthalene	170		3.7	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	10		3.7	1.4	ug/L	5		8270D	Total/NA
Phenol	37		19	2.5	ug/L	5		8270D	Total/NA
Aluminum	0.096	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0068	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.21		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.00096	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	83		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0013	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Iron	6.1		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0032	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	42		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.31		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0087	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	58		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	200		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0037	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.011	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Arsenic	0.0095	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.20		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	91		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0016	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	3.3		0.20	0.10	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-13-GW-08092016 (Continued) — Lab Sample ID: 500-115474-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	39		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.27		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0098	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	56		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0040	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00014	J B	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	0.61	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	86	B	20	5.9	mg/L	4		9038	Total/NA
Total Organic Carbon - Duplicates	54		4.0	1.1	mg/L	4		9060A	Total/NA
Total Suspended Solids	28		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	56	B	4.0	0.57	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: DUP-1(08092016) — Lab Sample ID: 500-115474-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	38		25	8.7	ug/L	5		8260B	Total/NA
Benzene	390		2.5	0.73	ug/L	5		8260B	Total/NA
Chlorobenzene	3.2	J	5.0	1.9	ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	34		5.0	2.0	ug/L	5		8260B	Total/NA
1,2-Dichlorobenzene	13		5.0	1.7	ug/L	5		8260B	Total/NA
1,1-Dichloroethane	16		5.0	2.1	ug/L	5		8260B	Total/NA
Isopropylbenzene	100		5.0	1.9	ug/L	5		8260B	Total/NA
Trichloroethene	3.6		2.5	0.82	ug/L	5		8260B	Total/NA
Vinyl chloride	11		2.5	1.0	ug/L	5		8260B	Total/NA
Ethylbenzene - DL	1400		25	9.2	ug/L	50		8260B	Total/NA
Toluene - DL	2700		25	7.6	ug/L	50		8260B	Total/NA
Xylenes, Total - DL	9800		50	11	ug/L	50		8260B	Total/NA
Acenaphthylene	2.5	J	3.7	0.99	ug/L	5		8270D	Total/NA
Diethyl phthalate	8.8		7.4	1.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	32	J	37	6.7	ug/L	5		8270D	Total/NA
Di-n-butyl phthalate	4.2	J	18	2.7	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	11		7.4	0.24	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	54		7.4	1.7	ug/L	5		8270D	Total/NA
Naphthalene	160		3.7	1.1	ug/L	5		8270D	Total/NA
Phenol	36		18	2.5	ug/L	5		8270D	Total/NA
Aluminum	0.12	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0096	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.21		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	93		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0039	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0015	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0029	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	5.6		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	40		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.29		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.011		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	59		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0045	J	0.0050	0.0019	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-1(08092016) (Continued) — Lab Sample ID: 500-115474-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0062	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.22		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	86		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0037	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	5.9		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	45		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.31		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0092	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	62		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	210		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0031	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Mercury	0.00012	J B	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	1.7		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	96	B	20	5.9	mg/L	4		9038	Total/NA
Total Organic Carbon - Duplicates	56		4.0	1.1	mg/L	4		9060A	Total/NA
Total Suspended Solids	22		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	66	B	4.0	0.57	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: DUP-2(08092016) — Lab Sample ID: 500-115474-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	46		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.0		0.50	0.15	ug/L	1		8260B	Total/NA
Carbon disulfide	0.71	J	2.0	0.45	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.3		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.9		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	13		1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.5		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	85		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	5.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	21		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	27		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	160		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	3.3		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	310		10	2.2	ug/L	10		8260B	Total/NA
Bis(2-ethylhexyl) phthalate	66		36	6.2	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	2.8	J	7.3	0.24	ug/L	5		8270D	Total/NA
2-Methylphenol	17		7.3	1.1	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	120		7.3	1.6	ug/L	5		8270D	Total/NA
Naphthalene	18		3.6	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	1.9	J	3.6	1.3	ug/L	5		8270D	Total/NA
Phenol	47		18	2.4	ug/L	5		8270D	Total/NA
PCB-1242	3.9		0.38	0.19	ug/L	1		8082A	Total/NA
Aluminum	0.38		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.028		0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.35		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0019	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	35		0.20	0.059	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016) (Continued) — Lab Sample ID: 500-115474-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.10		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.031		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.012		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	1.4		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.10		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	29		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.012		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.12		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	530		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0053	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	2700		5.0	2.2	mg/L	5		6010C	Total/NA
Vanadium	0.064		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.14		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.21		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.025		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.30		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J ^	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	30		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.089		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.026		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0060	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	1.0		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.044	^	0.0050	0.0025	mg/L	1		6010C	Dissolved
Magnesium	26		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.0077	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.097		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	470		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0057	J ^	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	2400		5.0	2.2	mg/L	5		6010C	Dissolved
Vanadium	0.053		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.061		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00018	J B	0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	6.5		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	12	J B	20	5.9	mg/L	4		9038	Total/NA
Total Organic Carbon - Duplicates	370		20	5.3	mg/L	20		9060A	Total/NA
Nitrogen, Nitrate	0.038	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	4.5	J	5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	490	B	40	5.7	mg/L	50		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.038	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: Composite Drum Sample — Lab Sample ID: 500-115474-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.4		0.50	0.20	ug/L	1		8260B	Total/NA
Acetone	44		5.0	1.7	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.6		1.0	0.41	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5.4		1.0	0.41	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	17		5.0	2.1	ug/L	1		8260B	Total/NA
Cyclohexane	3.3		1.0	0.49	ug/L	1		8260B	Total/NA
Benzene	55		0.50	0.15	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: Composite Drum Sample (Continued) — Lab Sample ID: 500-115474-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.42	J	0.50	0.16	ug/L	1		8260B	Total/NA
Methylcyclohexane	3.0		1.0	0.32	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	16		5.0	2.2	ug/L	1		8260B	Total/NA
Chlorobenzene	3.6		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	110		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	7.4		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	0.73	J	1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.5		1.0	0.33	ug/L	1		8260B	Total/NA
Toluene - DL	270		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	560		10	2.2	ug/L	10		8260B	Total/NA
Flashpoint	>176		40.0	40.0	Degrees F	1		1010A	Total/NA
pH	8.0	HF	0.2	0.2	SU	1		9040C	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
1010A	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9040C	pH	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-115474-1	MW-06-GW-08092016	Water	08/09/16 09:30	08/09/16 17:55
500-115474-2	MW-07-GW-08092016	Water	08/09/16 11:45	08/09/16 17:55
500-115474-3	MW-08-GW-08092016	Water	08/09/16 13:45	08/09/16 17:55
500-115474-4	MW-09-GW-08092016	Water	08/09/16 15:30	08/09/16 17:55
500-115474-5	MW-10-GW-08092016	Water	08/09/16 14:10	08/09/16 17:55
500-115474-6	MW-11-GW-08092016	Water	08/09/16 12:10	08/09/16 17:55
500-115474-7	MW-13-GW-08092016	Water	08/09/16 09:20	08/09/16 17:55
500-115474-8	DUP-1(08092016)	Water	08/09/16 00:00	08/09/16 17:55
500-115474-9	DUP-2(08092016)	Water	08/09/16 00:00	08/09/16 17:55
500-115474-10	Composite Drum Sample	Water	08/09/16 16:00	08/09/16 17:55

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**66**		5.0	1.7	ug/L			08/12/16 01:17	1
Benzene	**6.0**		0.50	0.15	ug/L			08/12/16 01:17	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 01:17	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 01:17	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 01:17	1
Carbon disulfide	**1.1**	**J**	2.0	0.45	ug/L			08/12/16 01:17	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 01:17	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 01:17	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 01:17	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 01:17	1
cis-1,2-Dichloroethene	**4.3**		1.0	0.41	ug/L			08/12/16 01:17	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 01:17	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 01:17	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 01:17	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 01:17	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
1,2-Dichlorobenzene	**2.1**		1.0	0.33	ug/L			08/12/16 01:17	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 01:17	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			08/12/16 01:17	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 01:17	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 01:17	1
1,2-Dichloroethane	**1.6**		1.0	0.39	ug/L			08/12/16 01:17	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 01:17	1
Ethylbenzene	**86**		0.50	0.18	ug/L			08/12/16 01:17	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 01:17	1
Isopropylbenzene	**5.0**		1.0	0.39	ug/L			08/12/16 01:17	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 01:17	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 01:17	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 01:17	1
Methyl Ethyl Ketone	**25**		5.0	2.1	ug/L			08/12/16 01:17	1
methyl isobutyl ketone	**28**		5.0	2.2	ug/L			08/12/16 01:17	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 01:17	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 01:17	1
Toluene	**160**		0.50	0.15	ug/L			08/12/16 01:17	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 01:17	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 01:17	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 01:17	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 01:17	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 01:17	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 01:17	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 01:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 01:17	1
Vinyl chloride	**3.6**		0.50	0.20	ug/L			08/12/16 01:17	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Date Collected: 08/09/16 09:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 01:17*	*1*
Dibromofluoromethane	*88*		*70 - 120*		*08/12/16 01:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*08/12/16 01:17*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 01:17*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**340**		10	2.2	ug/L			08/12/16 01:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 01:44*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 01:44*	*10*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 01:44*	*10*
Toluene-d8 (Surr)	*102*		*75 - 120*		*08/12/16 01:44*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Acenaphthylene	<3.7		3.7	0.98	ug/L		08/10/16 16:28	08/15/16 17:57	5
Acetophenone	**6.3**	**J**	18	2.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Anthracene	<3.7		3.7	1.2	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[a]pyrene	<0.73	*	0.73	0.36	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[b]fluoranthene	<0.73	*	0.73	0.30	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[g,h,i]perylene	<3.7	*	3.7	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[k]fluoranthene	<0.73	*	0.73	0.23	ug/L		08/10/16 16:28	08/15/16 17:57	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		08/10/16 16:28	08/15/16 17:57	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Bis(2-ethylhexyl) phthalate	**69**		37	6.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:57	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		08/10/16 16:28	08/15/16 17:57	5
Carbazole	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Chloroaniline	<37		37	7.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Chloro-3-methylphenol	<37		37	8.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Chlorophenol	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
Chrysene	<1.8		1.8	0.25	ug/L		08/10/16 16:28	08/15/16 17:57	5
Dibenz(a,h)anthracene	<1.1	*	1.1	0.19	ug/L		08/10/16 16:28	08/15/16 17:57	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		08/10/16 16:28	08/15/16 17:57	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dichlorophenol	<37		37	9.5	ug/L		08/10/16 16:28	08/15/16 17:57	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dimethylphenol	<37		37	6.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		08/10/16 16:28	08/15/16 17:57	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dinitrophenol	<73		73	31	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/10/16 16:28	08/15/16 17:57	5
Di-n-octyl phthalate	<37		37	3.8	ug/L		08/10/16 16:28	08/15/16 17:57	5

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.7		3.7	1.7	ug/L		08/10/16 16:28	08/15/16 17:57	5
Fluorene	<3.7		3.7	0.89	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachloroethane	<18		18	2.2	ug/L		08/10/16 16:28	08/15/16 17:57	5
Indeno[1,2,3-cd]pyrene	<0.73	*	0.73	0.27	ug/L		08/10/16 16:28	08/15/16 17:57	5
Isophorone	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Methylnaphthalene	**2.8**	**J**	7.3	0.24	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Methylphenol	**17**		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
3 & 4 Methylphenol	**130**		7.3	1.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
Naphthalene	**17**		3.7	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Nitroaniline	<18		18	4.7	ug/L		08/10/16 16:28	08/15/16 17:57	5
3-Nitroaniline	<37		37	6.5	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Nitroaniline	<37		37	6.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Nitrobenzene	<3.7		3.7	1.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Nitrophenol	<37		37	9.2	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Nitrophenol	<73		73	27	ug/L		08/10/16 16:28	08/15/16 17:57	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		08/10/16 16:28	08/15/16 17:57	5
N-Nitrosodiphenylamine	<3.7		3.7	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Pentachlorophenol	<73		73	14	ug/L		08/10/16 16:28	08/15/16 17:57	5
Phenanthrene	**1.1**	**J**	3.7	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Phenol	**44**		18	2.5	ug/L		08/10/16 16:28	08/15/16 17:57	5
Pyrene	<3.7		3.7	1.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzaldehyde	<150	^	150	55	ug/L		08/10/16 16:28	08/15/16 17:57	5
Caprolactam	<37		37	5.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Atrazine	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*30 - 123*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
Phenol-d5 (Surr)	*71*		*20 - 100*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
Terphenyl-d14 (Surr)	*154*	*X*	*42 - 150*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
2,4,6-Tribromophenol (Surr)	*75*		*30 - 150*	*08/10/16 16:28*	*08/15/16 17:57*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		08/10/16 09:43	08/19/16 13:54	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		08/10/16 09:43	08/19/16 13:54	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		08/10/16 09:43	08/19/16 13:54	1
beta-BHC	<0.036		0.036	0.0093	ug/L		08/10/16 09:43	08/19/16 13:54	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		08/10/16 09:43	08/19/16 13:54	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		08/10/16 09:43	08/19/16 13:54	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		08/10/16 09:43	08/19/16 13:54	1
delta-BHC	<0.036		0.036	0.0094	ug/L		08/10/16 09:43	08/19/16 13:54	1

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.036		0.036	0.012	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endrin	<0.036		0.036	0.013	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endrin ketone	<0.036		0.036	0.015	ug/L		08/10/16 09:43	08/19/16 13:54	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		08/10/16 09:43	08/19/16 13:54	1
gamma-Chlordane	<0.036		0.036	0.0065	ug/L		08/10/16 09:43	08/19/16 13:54	1
Heptachlor	<0.036		0.036	0.012	ug/L		08/10/16 09:43	08/19/16 13:54	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		08/10/16 09:43	08/19/16 13:54	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/10/16 09:43	08/19/16 13:54	1
Toxaphene	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/19/16 13:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*24*	*X*	*30 - 143*	*08/10/16 09:43*	*08/19/16 13:54*	*1*
Tetrachloro-m-xylene	*81*		*30 - 120*	*08/10/16 09:43*	*08/19/16 13:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1221	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1232	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1242	**3.8**		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1248	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1254	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1260	<0.36		0.36	0.064	ug/L		08/10/16 09:43	08/12/16 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*43*		*30 - 127*	*08/10/16 09:43*	*08/12/16 15:57*	*1*
DCB Decachlorobiphenyl	*28*	*X*	*30 - 150*	*08/10/16 09:43*	*08/12/16 15:57*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.34**		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:10	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:10	1
Arsenic	**0.028**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:10	1
Barium	**0.34**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:10	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:10	1
Cadmium	**0.0019**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:10	1
Calcium	**34**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:10	1
Chromium	**0.10**		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:10	1
Cobalt	**0.030**		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:10	1
Copper	**0.011**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:10	1
Iron	**1.2**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:10	1
Lead	**0.096**		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:10	1
Magnesium	**29**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:10	1
Manganese	**0.011**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:10	1
Nickel	**0.12**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:10	1
Potassium	**530**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0069	J	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:10	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:10	1
Sodium	2800		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:00	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:10	1
Vanadium	0.062		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:10	1
Zinc	0.13		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:10	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.16	J	0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:02	1
Antimony	0.0070	J	0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:02	1
Arsenic	0.027		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:02	1
Barium	0.33		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:02	1
Cadmium	0.0013	J	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:02	1
Calcium	34		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:02	1
Chromium	0.097		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:02	1
Cobalt	0.030		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:02	1
Copper	0.0046	J	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:02	1
Iron	0.96		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:02	1
Lead	0.021		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:02	1
Magnesium	29		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:02	1
Manganese	0.0093	J	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:02	1
Nickel	0.12		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:02	1
Potassium	530		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:02	1
Selenium	0.0073	J	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:02	1
Sodium	2700		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:16	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:02	1
Vanadium	0.056		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:02	1
Zinc	0.039		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00026	B	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:08	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	5.4		1.0	0.18	mg/L			08/11/16 09:15	1
Sulfate	49	B	20	5.9	mg/L			08/17/16 06:49	4
Total Organic Carbon - Duplicates	280		10	2.7	mg/L			08/16/16 00:33	10
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	7.0		5.0	2.5	mg/L			08/11/16 12:20	1
Ammonia	490	B	40	5.7	mg/L		08/16/16 21:15	08/18/16 22:33	50
Nitrogen, Nitrite	0.035	J	0.040	0.018	mg/L			08/10/16 11:11	2
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 23:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**46**		5.0	1.7	ug/L			08/12/16 02:11	1
Benzene	**12**		0.50	0.15	ug/L			08/12/16 02:11	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 02:11	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 02:11	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 02:11	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 02:11	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 02:11	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 02:11	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 02:11	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 02:11	1
cis-1,2-Dichloroethene	**8.9**		1.0	0.41	ug/L			08/12/16 02:11	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 02:11	1
Cyclohexane	**0.73**	**J**	1.0	0.49	ug/L			08/12/16 02:11	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 02:11	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 02:11	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,2-Dichlorobenzene	**8.9**		1.0	0.33	ug/L			08/12/16 02:11	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 02:11	1
1,4-Dichlorobenzene	**15**		1.0	0.36	ug/L			08/12/16 02:11	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 02:11	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 02:11	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 02:11	1
Ethylbenzene	**160**		0.50	0.18	ug/L			08/12/16 02:11	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 02:11	1
Isopropylbenzene	**10**		1.0	0.39	ug/L			08/12/16 02:11	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 02:11	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			08/12/16 02:11	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 02:11	1
Methyl Ethyl Ketone	**24**		5.0	2.1	ug/L			08/12/16 02:11	1
methyl isobutyl ketone	**100**		5.0	2.2	ug/L			08/12/16 02:11	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 02:11	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 02:11	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 02:11	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 02:11	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 02:11	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 02:11	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 02:11	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 02:11	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 02:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 02:11	1
Vinyl chloride	**12**		0.50	0.20	ug/L			08/12/16 02:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 02:11*	*1*

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 02:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 02:11*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*08/12/16 02:11*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**420**		5.0	1.5	ug/L			08/12/16 02:38	10
Xylenes, Total	**760**		10	2.2	ug/L			08/12/16 02:38	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 02:38*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 02:38*	*10*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 02:38*	*10*
Toluene-d8 (Surr)	*104*		*75 - 120*		*08/12/16 02:38*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.5		7.5	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
Acenaphthylene	<7.5		7.5	2.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
Acetophenone	<38		38	5.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
Anthracene	**3.3**	**J**	7.5	2.5	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[a]anthracene	<1.5		1.5	0.43	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[a]pyrene	**3.2**		1.5	0.74	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[b]fluoranthene	**3.6**		1.5	0.61	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[g,h,i]perylene	<7.5		7.5	2.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[k]fluoranthene	<1.5		1.5	0.48	ug/L		08/10/16 16:28	08/16/16 19:47	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		08/10/16 16:28	08/16/16 19:47	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
Bis(2-ethylhexyl) phthalate	**270**		75	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Bromophenyl phenyl ether	<38		38	4.1	ug/L		08/10/16 16:28	08/16/16 19:47	10
Butyl benzyl phthalate	<15		15	3.6	ug/L		08/10/16 16:28	08/16/16 19:47	10
Carbazole	**5.7**	**J**	38	2.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Chloroaniline	<75		75	15	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Chloro-3-methylphenol	<75		75	17	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Chloronaphthalene	<15		15	1.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Chlorophenol	<38		38	4.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Chlorophenyl phenyl ether	<38		38	4.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
Chrysene	**3.3**	**J**	3.8	0.51	ug/L		08/10/16 16:28	08/16/16 19:47	10
Dibenz(a,h)anthracene	<2.3		2.3	0.38	ug/L		08/10/16 16:28	08/16/16 19:47	10
Dibenzofuran	<15		15	2.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
3,3'-Dichlorobenzidine	<38		38	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dichlorophenol	<75		75	20	ug/L		08/10/16 16:28	08/16/16 19:47	10
Diethyl phthalate	<15		15	2.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dimethylphenol	**370**		75	14	ug/L		08/10/16 16:28	08/16/16 19:47	10
Dimethyl phthalate	<15		15	2.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Di-n-butyl phthalate	<38		38	5.5	ug/L		08/10/16 16:28	08/16/16 19:47	10
4,6-Dinitro-2-methylphenol	<150		150	44	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dinitrophenol	<150		150	65	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dinitrotoluene	<7.5		7.5	1.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,6-Dinitrotoluene	<3.8		3.8	0.55	ug/L		08/10/16 16:28	08/16/16 19:47	10

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<75		75	7.9	ug/L		08/10/16 16:28	08/16/16 19:47	10
Fluoranthene	**12**		7.5	3.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Fluorene	<7.5		7.5	1.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachlorobenzene	<3.8		3.8	0.60	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachlorobutadiene	<38		38	3.9	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachlorocyclopentadiene	<150		150	48	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachloroethane	<38		38	4.5	ug/L		08/10/16 16:28	08/16/16 19:47	10
Indeno[1,2,3-cd]pyrene	**2.0**		1.5	0.56	ug/L		08/10/16 16:28	08/16/16 19:47	10
Isophorone	<15		15	2.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Methylnaphthalene	**6.0**	**J**	15	0.49	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Methylphenol	**75**		15	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
3 & 4 Methylphenol	**290**		15	3.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Naphthalene	**38**		7.5	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Nitroaniline	<38		38	9.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
3-Nitroaniline	<75		75	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Nitroaniline	<75		75	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
Nitrobenzene	<7.5		7.5	3.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Nitrophenol	<75		75	19	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Nitrophenol	<150		150	56	ug/L		08/10/16 16:28	08/16/16 19:47	10
N-Nitrosodi-n-propylamine	<3.8		3.8	1.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
N-Nitrosodiphenylamine	<7.5		7.5	2.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,2'-oxybis[1-chloropropane]	<15		15	2.9	ug/L		08/10/16 16:28	08/16/16 19:47	10
Pentachlorophenol	<150		150	30	ug/L		08/10/16 16:28	08/16/16 19:47	10
Phenanthrene	**16**		7.5	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
Phenol	<38		38	5.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
Pyrene	**9.7**		7.5	3.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4,5-Trichlorophenol	<75		75	19	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4,6-Trichlorophenol	<38		38	5.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzaldehyde	<300	^	300	110	ug/L		08/10/16 16:28	08/16/16 19:47	10
Caprolactam	<75		75	11	ug/L		08/10/16 16:28	08/16/16 19:47	10
Atrazine	<38		38	4.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
1,1'-Biphenyl	<38		38	2.7	ug/L		08/10/16 16:28	08/16/16 19:47	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*98*		*30 - 123*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
2-Fluorophenol (Surr)	*104*		*30 - 110*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
Nitrobenzene-d5 (Surr)	*105*		*33 - 139*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
Phenol-d5 (Surr)	*105*	*X*	*20 - 100*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
Terphenyl-d14 (Surr)	*154*	*X*	*42 - 150*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
2,4,6-Tribromophenol (Surr)	*102*		*30 - 150*	*08/10/16 16:28*	*08/16/16 19:47*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.19		0.19	0.026	ug/L		08/10/16 09:43	08/19/16 14:13	5
alpha-BHC	<0.19		0.19	0.013	ug/L		08/10/16 09:43	08/19/16 14:13	5
alpha-Chlordane	<0.19		0.19	0.021	ug/L		08/10/16 09:43	08/19/16 14:13	5
beta-BHC	<0.19		0.19	0.049	ug/L		08/10/16 09:43	08/19/16 14:13	5
4,4'-DDD	<0.19		0.19	0.064	ug/L		08/10/16 09:43	08/19/16 14:13	5
4,4'-DDE	<0.19		0.19	0.018	ug/L		08/10/16 09:43	08/19/16 14:13	5
4,4'-DDT	<0.19		0.19	0.016	ug/L		08/10/16 09:43	08/19/16 14:13	5

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.19		0.19	0.050	ug/L		08/10/16 09:43	08/19/16 14:13	5
Dieldrin	<0.19		0.19	0.063	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endosulfan I	<0.19		0.19	0.020	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endosulfan II	<0.19		0.19	0.014	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endosulfan sulfate	<0.19		0.19	0.057	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endrin	<0.19		0.19	0.069	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endrin aldehyde	<0.19		0.19	0.040	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endrin ketone	<0.19		0.19	0.082	ug/L		08/10/16 09:43	08/19/16 14:13	5
gamma-BHC (Lindane)	<0.19		0.19	0.027	ug/L		08/10/16 09:43	08/19/16 14:13	5
gamma-Chlordane	<0.19		0.19	0.035	ug/L		08/10/16 09:43	08/19/16 14:13	5
Heptachlor	<0.19		0.19	0.065	ug/L		08/10/16 09:43	08/19/16 14:13	5
Heptachlor epoxide	<0.19		0.19	0.067	ug/L		08/10/16 09:43	08/19/16 14:13	5
Methoxychlor	<0.39		0.39	0.11	ug/L		08/10/16 09:43	08/19/16 14:13	5
Toxaphene	<1.9		1.9	0.97	ug/L		08/10/16 09:43	08/19/16 14:13	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*3*	*X*	*30 - 143*	*08/10/16 09:43*	*08/19/16 14:13*	*5*
Tetrachloro-m-xylene	*116*		*30 - 120*	*08/10/16 09:43*	*08/19/16 14:13*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.39		0.39	0.065	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1221	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1232	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1242	**7.0**		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1248	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1254	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1260	<0.39		0.39	0.068	ug/L		08/10/16 09:43	08/10/16 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*20*	*X*	*30 - 127*	*08/10/16 09:43*	*08/10/16 17:19*	*1*
DCB Decachlorobiphenyl	*7*	*X*	*30 - 150*	*08/10/16 09:43*	*08/10/16 17:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.8**		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:16	1
Antimony	**0.017**	**J**	0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:16	1
Arsenic	**0.058**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:16	1
Barium	**0.56**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:16	1
Cadmium	**0.0076**		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:16	1
Calcium	**11**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:16	1
Chromium	**0.48**		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:16	1
Cobalt	**0.043**		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:16	1
Copper	**0.082**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:16	1
Iron	**4.3**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:16	1
Lead	**0.70**		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:16	1
Magnesium	**20**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:16	1
Manganese	**0.017**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:16	1
Nickel	**0.16**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2
Date Collected: 08/09/16 11:45
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	620		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:16	1
Selenium	0.011		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:16	1
Silver	0.0018	J	0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:16	1
Sodium	3400		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:05	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:16	1
Vanadium	0.081		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:16	1
Zinc	1.1		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.0		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:08	1
Antimony	0.0099	J	0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:08	1
Arsenic	0.052		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:08	1
Barium	0.51		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:08	1
Cadmium	0.0032		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:08	1
Calcium	11		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:08	1
Chromium	0.45		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:08	1
Cobalt	0.045		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:08	1
Copper	0.028		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:08	1
Iron	3.8		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:08	1
Lead	0.15		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:08	1
Magnesium	21		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:08	1
Manganese	0.014		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:08	1
Nickel	0.17		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:08	1
Potassium	660		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:08	1
Selenium	0.012		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:08	1
Sodium	3500		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:21	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:08	1
Vanadium	0.072		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:08	1
Zinc	0.41		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0013	B	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:26	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00050	B	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	5.8		1.0	0.18	mg/L			08/11/16 09:27	1
Sulfate	36	J B	50	15	mg/L			08/17/16 06:57	10
Total Organic Carbon - Duplicates	650		40	11	mg/L			08/16/16 00:49	40
Nitrogen, Nitrate	0.12		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	12		5.0	2.5	mg/L			08/11/16 12:24	1
Ammonia	630	B	40	5.7	mg/L		08/16/16 21:15	08/18/16 22:36	50
Nitrogen, Nitrite	<0.10		0.10	0.044	mg/L			08/10/16 11:12	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45

Matrix: Water

Date Received: 08/09/16 17:55

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	0.12		0.10	0.035	mg/L			08/16/16 23:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 03:05	1
Benzene	<0.50		0.50	0.15	ug/L			08/12/16 03:05	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 03:05	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 03:05	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 03:05	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 03:05	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 03:05	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 03:05	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 03:05	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 03:05	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 03:05	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 03:05	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 03:05	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 03:05	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 03:05	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 03:05	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 03:05	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/12/16 03:05	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 03:05	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 03:05	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 03:05	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 03:05	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 03:05	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 03:05	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 03:05	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 03:05	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 03:05	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 03:05	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 03:05	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 03:05	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 03:05	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 03:05	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 03:05	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 03:05	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 03:05	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 03:05	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 03:05	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 03:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 03:05	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 03:05	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 03:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45

Matrix: Water

Date Received: 08/09/16 17:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 03:05*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 03:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 03:05*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 03:05*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.76		0.76	0.24	ug/L		08/10/16 16:28	08/15/16 14:56	1
Acenaphthylene	<0.76		0.76	0.20	ug/L		08/10/16 16:28	08/15/16 14:56	1
Acetophenone	<3.8		3.8	0.51	ug/L		08/10/16 16:28	08/15/16 14:56	1
Anthracene	<0.76		0.76	0.25	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[g,h,i]perylene	<0.76		0.76	0.29	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		08/10/16 16:28	08/15/16 14:56	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 14:56	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 14:56	1
Bis(2-ethylhexyl) phthalate	<7.6		7.6	1.3	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		08/10/16 16:28	08/15/16 14:56	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		08/10/16 16:28	08/15/16 14:56	1
Carbazole	<3.8		3.8	0.27	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Chloroaniline	<7.6		7.6	1.5	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Chloro-3-methylphenol	<7.6		7.6	1.8	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		08/10/16 16:28	08/15/16 14:56	1
Chrysene	<0.38		0.38	0.052	ug/L		08/10/16 16:28	08/15/16 14:56	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		08/10/16 16:28	08/15/16 14:56	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		08/10/16 16:28	08/15/16 14:56	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dichlorophenol	<7.6		7.6	2.0	ug/L		08/10/16 16:28	08/15/16 14:56	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dimethylphenol	<7.6		7.6	1.4	ug/L		08/10/16 16:28	08/15/16 14:56	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		08/10/16 16:28	08/15/16 14:56	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		08/10/16 16:28	08/15/16 14:56	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dinitrotoluene	<0.76		0.76	0.19	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,6-Dinitrotoluene	<0.38		0.38	0.056	ug/L		08/10/16 16:28	08/15/16 14:56	1
Di-n-octyl phthalate	<7.6		7.6	0.80	ug/L		08/10/16 16:28	08/15/16 14:56	1
Fluoranthene	<0.76		0.76	0.35	ug/L		08/10/16 16:28	08/15/16 14:56	1
Fluorene	<0.76		0.76	0.19	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachlorocyclopentadiene	<15		15	4.9	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		08/10/16 16:28	08/15/16 14:56	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		08/10/16 16:28	08/15/16 14:56	1
Isophorone	<1.5		1.5	0.29	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Methylnaphthalene	<1.5		1.5	0.050	ug/L		08/10/16 16:28	08/15/16 14:56	1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 14:56	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		08/10/16 16:28	08/15/16 14:56	1
Naphthalene	<0.76		0.76	0.24	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Nitroaniline	<3.8		3.8	0.98	ug/L		08/10/16 16:28	08/15/16 14:56	1
3-Nitroaniline	<7.6		7.6	1.4	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Nitroaniline	<7.6		7.6	1.3	ug/L		08/10/16 16:28	08/15/16 14:56	1
Nitrobenzene	<0.76		0.76	0.34	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Nitrophenol	<7.6		7.6	1.9	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Nitrophenol	<15		15	5.7	ug/L		08/10/16 16:28	08/15/16 14:56	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		08/10/16 16:28	08/15/16 14:56	1
N-Nitrosodiphenylamine	<0.76		0.76	0.28	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		08/10/16 16:28	08/15/16 14:56	1
Pentachlorophenol	<15		15	3.0	ug/L		08/10/16 16:28	08/15/16 14:56	1
Phenanthrene	<0.76		0.76	0.23	ug/L		08/10/16 16:28	08/15/16 14:56	1
Phenol	<3.8		3.8	0.51	ug/L		08/10/16 16:28	08/15/16 14:56	1
Pyrene	<0.76		0.76	0.32	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4,5-Trichlorophenol	<7.6		7.6	2.0	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzaldehyde	<30	^	30	12	ug/L		08/10/16 16:28	08/15/16 14:56	1
Caprolactam	<7.6		7.6	1.1	ug/L		08/10/16 16:28	08/15/16 14:56	1
Atrazine	<3.8		3.8	0.48	ug/L		08/10/16 16:28	08/15/16 14:56	1
1,1'-Biphenyl	<3.8		3.8	0.28	ug/L		08/10/16 16:28	08/15/16 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*30 - 123*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
Nitrobenzene-d5 (Surr)	*62*		*33 - 139*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
Phenol-d5 (Surr)	*45*		*20 - 100*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
Terphenyl-d14 (Surr)	*88*		*42 - 150*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*08/10/16 16:28*	*08/15/16 14:56*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0050	ug/L		08/10/16 09:43	08/19/16 14:32	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		08/10/16 09:43	08/19/16 14:32	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/10/16 09:43	08/19/16 14:32	1
beta-BHC	<0.037		0.037	0.0096	ug/L		08/10/16 09:43	08/19/16 14:32	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 14:32	1
4,4'-DDE	<0.037		0.037	0.0036	ug/L		08/10/16 09:43	08/19/16 14:32	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/10/16 09:43	08/19/16 14:32	1
delta-BHC	<0.037		0.037	0.0096	ug/L		08/10/16 09:43	08/19/16 14:32	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endrin	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endrin aldehyde	<0.037		0.037	0.0077	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/10/16 09:43	08/19/16 14:32	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		08/10/16 09:43	08/19/16 14:32	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		08/10/16 09:43	08/19/16 14:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3
Date Collected: 08/09/16 13:45
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 14:32	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 14:32	1
Methoxychlor	<0.075		0.075	0.022	ug/L		08/10/16 09:43	08/19/16 14:32	1
Toxaphene	<0.37		0.37	0.19	ug/L		08/10/16 09:43	08/19/16 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*89*		*30 - 143*	*08/10/16 09:43*	*08/19/16 14:32*	*1*
Tetrachloro-m-xylene	*58*		*30 - 120*	*08/10/16 09:43*	*08/19/16 14:32*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/15/16 09:16	08/15/16 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*85*		*30 - 127*	*08/15/16 09:16*	*08/15/16 17:48*	*1*
DCB Decachlorobiphenyl	*140*		*30 - 150*	*08/15/16 09:16*	*08/15/16 17:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:21	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:21	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:21	1
Barium	**0.65**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:21	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:21	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:21	1
Calcium	**110**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:21	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:21	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:21	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:21	1
Iron	**10**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:21	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:21	1
Magnesium	**82**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:21	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:21	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:21	1
Potassium	**37**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:21	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:21	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:21	1
Sodium	**230**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:21	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:21	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:21	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:21	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:13	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:13	1
Barium	**0.71**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:13	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:13	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:13	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:13	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:13	1
Iron	**10**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:13	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:13	1
Magnesium	**91**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:13	1
Manganese	**0.18**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:13	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:13	1
Potassium	**41**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:13	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:13	1
Sodium	**250**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:13	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:13	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00017**	**J B**	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00011**	**J B**	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/11/16 09:30	1
Sulfate	**2.4**	**J B**	5.0	1.5	mg/L			08/17/16 06:50	1
Total Organic Carbon - Duplicates	**16**	**F1**	1.0	0.27	mg/L			08/16/16 01:06	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**23**		5.0	2.5	mg/L			08/11/16 12:25	1
Ammonia	**41**	**B**	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 20:58	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:12	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 03:31	1
Benzene	**1.6**		0.50	0.15	ug/L			08/12/16 03:31	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 03:31	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 03:31	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 03:31	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 03:31	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 03:31	1
Chlorobenzene	**15**		1.0	0.39	ug/L			08/12/16 03:31	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 03:31	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 03:31	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 03:31	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 03:31	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 03:31	1
Cyclohexane	**1.8**		1.0	0.49	ug/L			08/12/16 03:31	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 03:31	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 03:31	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 03:31	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 03:31	1
1,4-Dichlorobenzene	**1.5**		1.0	0.36	ug/L			08/12/16 03:31	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 03:31	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 03:31	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 03:31	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 03:31	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 03:31	1
Isopropylbenzene	**3.4**		1.0	0.39	ug/L			08/12/16 03:31	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 03:31	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			08/12/16 03:31	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 03:31	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 03:31	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 03:31	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 03:31	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 03:31	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 03:31	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 03:31	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 03:31	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 03:31	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 03:31	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 03:31	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 03:31	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 03:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 03:31	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 03:31	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 03:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30
Matrix: Water
Date Received: 08/09/16 17:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*71 - 120*		*08/12/16 03:31*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 03:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*08/12/16 03:31*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*08/12/16 03:31*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.0**		0.78	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
Acenaphthylene	<0.78		0.78	0.21	ug/L		08/10/16 16:28	08/15/16 15:22	1
Acetophenone	<3.9		3.9	0.51	ug/L		08/10/16 16:28	08/15/16 15:22	1
Anthracene	<0.78		0.78	0.26	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[a]anthracene	<0.16		0.16	0.044	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[a]pyrene	<0.16		0.16	0.077	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[b]fluoranthene	<0.16		0.16	0.063	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[g,h,i]perylene	<0.78		0.78	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[k]fluoranthene	<0.16		0.16	0.050	ug/L		08/10/16 16:28	08/15/16 15:22	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.22	ug/L		08/10/16 16:28	08/15/16 15:22	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		08/10/16 16:28	08/15/16 15:22	1
Bis(2-ethylhexyl) phthalate	<7.8		7.8	1.3	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Bromophenyl phenyl ether	<3.9		3.9	0.42	ug/L		08/10/16 16:28	08/15/16 15:22	1
Butyl benzyl phthalate	<1.6		1.6	0.37	ug/L		08/10/16 16:28	08/15/16 15:22	1
Carbazole	<3.9		3.9	0.27	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Chloroaniline	<7.8		7.8	1.6	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Chloro-3-methylphenol	<7.8		7.8	1.8	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Chloronaphthalene	<1.6		1.6	0.18	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Chlorophenol	<3.9		3.9	0.43	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Chlorophenyl phenyl ether	<3.9		3.9	0.49	ug/L		08/10/16 16:28	08/15/16 15:22	1
Chrysene	<0.39		0.39	0.053	ug/L		08/10/16 16:28	08/15/16 15:22	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		08/10/16 16:28	08/15/16 15:22	1
Dibenzofuran	**0.22**	**J**	1.6	0.20	ug/L		08/10/16 16:28	08/15/16 15:22	1
3,3'-Dichlorobenzidine	<3.9		3.9	1.3	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dichlorophenol	<7.8		7.8	2.0	ug/L		08/10/16 16:28	08/15/16 15:22	1
Diethyl phthalate	<1.6		1.6	0.28	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dimethylphenol	<7.8		7.8	1.4	ug/L		08/10/16 16:28	08/15/16 15:22	1
Dimethyl phthalate	<1.6		1.6	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
Di-n-butyl phthalate	<3.9		3.9	0.57	ug/L		08/10/16 16:28	08/15/16 15:22	1
4,6-Dinitro-2-methylphenol	<16		16	4.6	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dinitrophenol	<16		16	6.7	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dinitrotoluene	<0.78		0.78	0.19	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,6-Dinitrotoluene	<0.39		0.39	0.057	ug/L		08/10/16 16:28	08/15/16 15:22	1
Di-n-octyl phthalate	<7.8		7.8	0.81	ug/L		08/10/16 16:28	08/15/16 15:22	1
Fluoranthene	<0.78		0.78	0.35	ug/L		08/10/16 16:28	08/15/16 15:22	1
Fluorene	**0.49**	**J**	0.78	0.19	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachlorobenzene	<0.39		0.39	0.062	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachlorobutadiene	<3.9		3.9	0.40	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachlorocyclopentadiene	<16		16	4.9	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachloroethane	<3.9		3.9	0.46	ug/L		08/10/16 16:28	08/15/16 15:22	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.058	ug/L		08/10/16 16:28	08/15/16 15:22	1
Isophorone	<1.6		1.6	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Methylnaphthalene	**2.5**		1.6	0.051	ug/L		08/10/16 16:28	08/15/16 15:22	1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.6		1.6	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
3 & 4 Methylphenol	**2.5**		1.6	0.35	ug/L		08/10/16 16:28	08/15/16 15:22	1
Naphthalene	**0.33**	**J**	0.78	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Nitroaniline	<3.9		3.9	1.0	ug/L		08/10/16 16:28	08/15/16 15:22	1
3-Nitroaniline	<7.8		7.8	1.4	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Nitroaniline	<7.8		7.8	1.3	ug/L		08/10/16 16:28	08/15/16 15:22	1
Nitrobenzene	<0.78		0.78	0.35	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Nitrophenol	<7.8		7.8	1.9	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Nitrophenol	<16		16	5.8	ug/L		08/10/16 16:28	08/15/16 15:22	1
N-Nitrosodi-n-propylamine	<0.39		0.39	0.12	ug/L		08/10/16 16:28	08/15/16 15:22	1
N-Nitrosodiphenylamine	<0.78		0.78	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
Pentachlorophenol	<16		16	3.1	ug/L		08/10/16 16:28	08/15/16 15:22	1
Phenanthrene	**0.55**	**J**	0.78	0.23	ug/L		08/10/16 16:28	08/15/16 15:22	1
Phenol	<3.9		3.9	0.52	ug/L		08/10/16 16:28	08/15/16 15:22	1
Pyrene	<0.78		0.78	0.33	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4,5-Trichlorophenol	<7.8		7.8	2.0	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4,6-Trichlorophenol	<3.9		3.9	0.56	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzaldehyde	<31	^	31	12	ug/L		08/10/16 16:28	08/15/16 15:22	1
Caprolactam	<7.8		7.8	1.2	ug/L		08/10/16 16:28	08/15/16 15:22	1
Atrazine	<3.9		3.9	0.48	ug/L		08/10/16 16:28	08/15/16 15:22	1
1,1'-Biphenyl	<3.9		3.9	0.28	ug/L		08/10/16 16:28	08/15/16 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*56*		*30 - 123*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
2-Fluorophenol (Surr)	*43*		*30 - 110*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
Nitrobenzene-d5 (Surr)	*47*		*33 - 139*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
Terphenyl-d14 (Surr)	*92*		*42 - 150*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*30 - 150*	*08/10/16 16:28*	*08/15/16 15:22*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		08/10/16 09:43	08/19/16 14:51	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		08/10/16 09:43	08/19/16 14:51	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		08/10/16 09:43	08/19/16 14:51	1
beta-BHC	<0.038		0.038	0.0097	ug/L		08/10/16 09:43	08/19/16 14:51	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		08/10/16 09:43	08/19/16 14:51	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		08/10/16 09:43	08/19/16 14:51	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		08/10/16 09:43	08/19/16 14:51	1
delta-BHC	<0.038		0.038	0.0098	ug/L		08/10/16 09:43	08/19/16 14:51	1
Dieldrin	<0.038		0.038	0.012	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endrin	<0.038		0.038	0.014	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endrin ketone	<0.038		0.038	0.016	ug/L		08/10/16 09:43	08/19/16 14:51	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		08/10/16 09:43	08/19/16 14:51	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		08/10/16 09:43	08/19/16 14:51	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.038		0.038	0.013	ug/L		08/10/16 09:43	08/19/16 14:51	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		08/10/16 09:43	08/19/16 14:51	1
Methoxychlor	<0.076		0.076	0.022	ug/L		08/10/16 09:43	08/19/16 14:51	1
Toxaphene	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/19/16 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*08/10/16 09:43*	*08/19/16 14:51*	*1*
Tetrachloro-m-xylene	*61*		*30 - 120*	*08/10/16 09:43*	*08/19/16 14:51*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1221	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1232	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1242	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1248	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1254	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1260	<0.38		0.38	0.067	ug/L		08/10/16 09:43	08/10/16 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*65*		*30 - 127*	*08/10/16 09:43*	*08/10/16 17:49*	*1*
DCB Decachlorobiphenyl	*80*		*30 - 150*	*08/10/16 09:43*	*08/10/16 17:49*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:26	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:26	1
Barium	**0.83**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:26	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:26	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:26	1
Chromium	**0.0044**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:26	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:26	1
Iron	**25**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:26	1
Magnesium	**83**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:26	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:26	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:26	1
Potassium	**76**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:26	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:26	1
Sodium	**200**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:26	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:26	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:26	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:18	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:18	1
Barium	**0.81**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:18	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:18	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:18	1
Chromium	**0.0039**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:18	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:18	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:18	1
Iron	**25**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:18	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:18	1
Magnesium	**82**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:18	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:18	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:18	1
Potassium	**75**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:18	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:18	1
Sodium	**200**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:18	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:18	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:18	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J B**	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/11/16 09:34	1
Sulfate	**3.9**	**J B**	5.0	1.5	mg/L			08/17/16 06:58	1
Total Organic Carbon - Duplicates	**27**		1.0	0.27	mg/L			08/16/16 02:02	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**52**		5.0	2.5	mg/L			08/11/16 12:27	1
Ammonia	**74**	**B**	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:01	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:12	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 03:58	1
Benzene	**0.56**		0.50	0.15	ug/L			08/12/16 03:58	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 03:58	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 03:58	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 03:58	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 03:58	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 03:58	1
Chlorobenzene	**1.6**		1.0	0.39	ug/L			08/12/16 03:58	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 03:58	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 03:58	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 03:58	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 03:58	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 03:58	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 03:58	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 03:58	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 03:58	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 03:58	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 03:58	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/12/16 03:58	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 03:58	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 03:58	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 03:58	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 03:58	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 03:58	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 03:58	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 03:58	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 03:58	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 03:58	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 03:58	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 03:58	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 03:58	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 03:58	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 03:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 03:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 03:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 03:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 03:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 03:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 03:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 03:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 03:58	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 03:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10
Matrix: Water
Date Received: 08/09/16 17:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*08/12/16 03:58*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 03:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*08/12/16 03:58*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 03:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		08/10/16 16:28	08/15/16 15:48	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/10/16 16:28	08/15/16 15:48	1
Acetophenone	<3.6		3.6	0.48	ug/L		08/10/16 16:28	08/15/16 15:48	1
Anthracene	<0.73		0.73	0.24	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		08/10/16 16:28	08/15/16 15:48	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/10/16 16:28	08/15/16 15:48	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		08/10/16 16:28	08/15/16 15:48	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.2	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		08/10/16 16:28	08/15/16 15:48	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/10/16 16:28	08/15/16 15:48	1
Carbazole	<3.6		3.6	0.26	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Chlorophenol	<3.6		3.6	0.41	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		08/10/16 16:28	08/15/16 15:48	1
Chrysene	<0.36		0.36	0.050	ug/L		08/10/16 16:28	08/15/16 15:48	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		08/10/16 16:28	08/15/16 15:48	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		08/10/16 16:28	08/15/16 15:48	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/10/16 16:28	08/15/16 15:48	1
Diethyl phthalate	**0.34**	**J**	1.5	0.26	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 15:48	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		08/10/16 16:28	08/15/16 15:48	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,6-Dinitrotoluene	<0.36		0.36	0.054	ug/L		08/10/16 16:28	08/15/16 15:48	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/10/16 16:28	08/15/16 15:48	1
Fluoranthene	<0.73		0.73	0.33	ug/L		08/10/16 16:28	08/15/16 15:48	1
Fluorene	<0.73		0.73	0.18	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachlorobutadiene	<3.6		3.6	0.38	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachlorocyclopentadiene	<15		15	4.6	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachloroethane	<3.6		3.6	0.44	ug/L		08/10/16 16:28	08/15/16 15:48	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		08/10/16 16:28	08/15/16 15:48	1
Isophorone	<1.5		1.5	0.27	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		08/10/16 16:28	08/15/16 15:48	1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 15:48	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		08/10/16 16:28	08/15/16 15:48	1
Naphthalene	<0.73		0.73	0.23	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		08/10/16 16:28	08/15/16 15:48	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		08/10/16 16:28	08/15/16 15:48	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Nitrophenol	<15		15	5.4	ug/L		08/10/16 16:28	08/15/16 15:48	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		08/10/16 16:28	08/15/16 15:48	1
N-Nitrosodiphenylamine	**0.96**		0.73	0.27	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 15:48	1
Pentachlorophenol	<15		15	2.9	ug/L		08/10/16 16:28	08/15/16 15:48	1
Phenanthrene	<0.73		0.73	0.22	ug/L		08/10/16 16:28	08/15/16 15:48	1
Phenol	<3.6		3.6	0.49	ug/L		08/10/16 16:28	08/15/16 15:48	1
Pyrene	<0.73		0.73	0.31	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzaldehyde	<29	^	29	11	ug/L		08/10/16 16:28	08/15/16 15:48	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 15:48	1
Atrazine	<3.6		3.6	0.46	ug/L		08/10/16 16:28	08/15/16 15:48	1
1,1'-Biphenyl	<3.6		3.6	0.26	ug/L		08/10/16 16:28	08/15/16 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*30 - 123*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
Phenol-d5 (Surr)	*50*		*20 - 100*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
Terphenyl-d14 (Surr)	*94*		*42 - 150*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*30 - 150*	*08/10/16 16:28*	*08/15/16 15:48*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/10/16 09:43	08/19/16 15:10	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		08/10/16 09:43	08/19/16 15:10	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/10/16 09:43	08/19/16 15:10	1
beta-BHC	<0.037		0.037	0.0094	ug/L		08/10/16 09:43	08/19/16 15:10	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:10	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/10/16 09:43	08/19/16 15:10	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/10/16 09:43	08/19/16 15:10	1
delta-BHC	<0.037		0.037	0.0095	ug/L		08/10/16 09:43	08/19/16 15:10	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endrin	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/10/16 09:43	08/19/16 15:10	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		08/10/16 09:43	08/19/16 15:10	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/10/16 09:43	08/19/16 15:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5
Date Collected: 08/09/16 14:10
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:10	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:10	1
Methoxychlor	<0.074		0.074	0.021	ug/L		08/10/16 09:43	08/19/16 15:10	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/19/16 15:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*08/10/16 09:43*	*08/19/16 15:10*	*1*
Tetrachloro-m-xylene	*56*		*30 - 120*	*08/10/16 09:43*	*08/19/16 15:10*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/10/16 09:43	08/12/16 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*08/10/16 09:43*	*08/12/16 16:12*	*1*
DCB Decachlorobiphenyl	*78*		*30 - 150*	*08/10/16 09:43*	*08/12/16 16:12*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:31	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:31	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:31	1
Barium	**0.46**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:31	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:31	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:31	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:31	1
Copper	**0.0033**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:31	1
Iron	**7.0**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:31	1
Lead	**0.0035**	**J**	0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:31	1
Magnesium	**60**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:31	1
Manganese	**0.56**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:31	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:31	1
Potassium	**56**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:31	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:31	1
Sodium	**160**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:31	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:31	1
Zinc	**0.032**		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:22	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:22	1
Barium	**0.47**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:22	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:22	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:22	1
Calcium	**130**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:22	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:22	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:22	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:22	1
Iron	**7.4**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:22	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:22	1
Magnesium	**64**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:22	1
Manganese	**0.61**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:22	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:22	1
Potassium	**58**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:22	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:22	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:22	1
Sodium	**170**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:22	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:22	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:22	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00014**	**J B**	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.57**	**J**	1.0	0.18	mg/L			08/11/16 09:38	1
Sulfate	**75**	**B**	20	5.9	mg/L			08/17/16 06:59	4
Total Organic Carbon - Duplicates	**17**		1.0	0.27	mg/L			08/16/16 02:18	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**17**		5.0	2.5	mg/L			08/11/16 12:29	1
Ammonia	**14**	**B**	1.0	0.14	mg/L		08/16/16 21:15	08/18/16 21:04	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:13	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			08/12/16 04:25	1
Benzene	**100**		0.50	0.15	ug/L			08/12/16 04:25	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 04:25	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 04:25	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 04:25	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 04:25	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 04:25	1
Chlorobenzene	**10**		1.0	0.39	ug/L			08/12/16 04:25	1
Chloroethane	**4.6**		1.0	0.51	ug/L			08/12/16 04:25	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 04:25	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 04:25	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 04:25	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 04:25	1
Cyclohexane	**100**		1.0	0.49	ug/L			08/12/16 04:25	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 04:25	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 04:25	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,2-Dichlorobenzene	**1.1**		1.0	0.33	ug/L			08/12/16 04:25	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 04:25	1
1,4-Dichlorobenzene	**3.2**		1.0	0.36	ug/L			08/12/16 04:25	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 04:25	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 04:25	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 04:25	1
Ethylbenzene	**11**		0.50	0.18	ug/L			08/12/16 04:25	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 04:25	1
Isopropylbenzene	**51**		1.0	0.39	ug/L			08/12/16 04:25	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 04:25	1
Methylcyclohexane	**110**		1.0	0.32	ug/L			08/12/16 04:25	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 04:25	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 04:25	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 04:25	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 04:25	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 04:25	1
Toluene	**8.2**		0.50	0.15	ug/L			08/12/16 04:25	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 04:25	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 04:25	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 04:25	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 04:25	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 04:25	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 04:25	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 04:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 04:25	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 04:25	1
Xylenes, Total	**67**		1.0	0.22	ug/L			08/12/16 04:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10
Matrix: Water
Date Received: 08/09/16 17:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 04:25*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 04:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*08/12/16 04:25*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 04:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		08/10/16 16:28	08/15/16 16:13	1
Acetophenone	**0.57**	**J**	3.7	0.49	ug/L		08/10/16 16:28	08/15/16 16:13	1
Anthracene	<0.74		0.74	0.25	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		08/10/16 16:28	08/15/16 16:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/10/16 16:28	08/15/16 16:13	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 16:13	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		08/10/16 16:28	08/15/16 16:13	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/10/16 16:28	08/15/16 16:13	1
Carbazole	<3.7		3.7	0.26	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		08/10/16 16:28	08/15/16 16:13	1
Chrysene	<0.37		0.37	0.050	ug/L		08/10/16 16:28	08/15/16 16:13	1
Dibenz(a,h)anthracene	<0.22		0.22	0.038	ug/L		08/10/16 16:28	08/15/16 16:13	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		08/10/16 16:28	08/15/16 16:13	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		08/10/16 16:28	08/15/16 16:13	1
Diethyl phthalate	**0.62**	**J**	1.5	0.27	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		08/10/16 16:28	08/15/16 16:13	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,6-Dinitrotoluene	<0.37		0.37	0.055	ug/L		08/10/16 16:28	08/15/16 16:13	1
Di-n-octyl phthalate	<7.4		7.4	0.78	ug/L		08/10/16 16:28	08/15/16 16:13	1
Fluoranthene	<0.74		0.74	0.34	ug/L		08/10/16 16:28	08/15/16 16:13	1
Fluorene	<0.74		0.74	0.18	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/10/16 16:28	08/15/16 16:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		08/10/16 16:28	08/15/16 16:13	1
Isophorone	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Methylnaphthalene	**2.3**		1.5	0.048	ug/L		08/10/16 16:28	08/15/16 16:13	1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		08/10/16 16:28	08/15/16 16:13	1
Naphthalene	**2.4**		0.74	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		08/10/16 16:28	08/15/16 16:13	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		08/10/16 16:28	08/15/16 16:13	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Nitrophenol	<15		15	5.5	ug/L		08/10/16 16:28	08/15/16 16:13	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		08/10/16 16:28	08/15/16 16:13	1
N-Nitrosodiphenylamine	**1.3**		0.74	0.27	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 16:13	1
Pentachlorophenol	<15		15	2.9	ug/L		08/10/16 16:28	08/15/16 16:13	1
Phenanthrene	**0.36**	**J**	0.74	0.22	ug/L		08/10/16 16:28	08/15/16 16:13	1
Phenol	**0.97**	**J**	3.7	0.50	ug/L		08/10/16 16:28	08/15/16 16:13	1
Pyrene	<0.74		0.74	0.32	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzaldehyde	<30	^	30	11	ug/L		08/10/16 16:28	08/15/16 16:13	1
Caprolactam	<7.4		7.4	1.1	ug/L		08/10/16 16:28	08/15/16 16:13	1
Atrazine	<3.7		3.7	0.46	ug/L		08/10/16 16:28	08/15/16 16:13	1
1,1'-Biphenyl	**2.6**	**J**	3.7	0.27	ug/L		08/10/16 16:28	08/15/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*48*		*30 - 123*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
2-Fluorophenol (Surr)	*42*		*30 - 110*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
Nitrobenzene-d5 (Surr)	*46*		*33 - 139*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
Terphenyl-d14 (Surr)	*79*		*42 - 150*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
2,4,6-Tribromophenol (Surr)	*64*		*30 - 150*	*08/10/16 16:28*	*08/15/16 16:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		08/10/16 09:43	08/19/16 15:30	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		08/10/16 09:43	08/19/16 15:30	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		08/10/16 09:43	08/19/16 15:30	1
beta-BHC	<0.037		0.037	0.0093	ug/L		08/10/16 09:43	08/19/16 15:30	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:30	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/10/16 09:43	08/19/16 15:30	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		08/10/16 09:43	08/19/16 15:30	1
delta-BHC	<0.037		0.037	0.0094	ug/L		08/10/16 09:43	08/19/16 15:30	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endrin	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/10/16 09:43	08/19/16 15:30	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		08/10/16 09:43	08/19/16 15:30	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/10/16 09:43	08/19/16 15:30	1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:30	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:30	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/10/16 09:43	08/19/16 15:30	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/19/16 15:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*45*		*30 - 143*	*08/10/16 09:43*	*08/19/16 15:30*	*1*
Tetrachloro-m-xylene	*76*		*30 - 120*	*08/10/16 09:43*	*08/19/16 15:30*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1221	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1232	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1242	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1248	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1254	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/15/16 09:16	08/15/16 18:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*08/15/16 09:16*	*08/15/16 18:04*	*1*
DCB Decachlorobiphenyl	*77*		*30 - 150*	*08/15/16 09:16*	*08/15/16 18:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:35	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:35	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:35	1
Barium	**0.85**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:35	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:35	1
Calcium	**130**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:35	1
Chromium	**0.0088**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:35	1
Cobalt	**0.0014**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:35	1
Copper	**0.0026**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:35	1
Iron	**29**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:35	1
Lead	**0.0043**	**J**	0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:35	1
Magnesium	**110**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:35	1
Manganese	**0.24**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:35	1
Nickel	**0.017**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:35	1
Potassium	**110**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:35	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:35	1
Sodium	**350**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:35	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:35	1
Vanadium	**0.0058**		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:35	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:27	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:27	1
Barium	**0.82**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:27	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:27	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:27	1
Calcium	**130**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:27	1
Chromium	**0.0081**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:27	1
Cobalt	**0.0013**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:27	1
Copper	**0.0028**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:27	1
Iron	**28**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:27	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:27	1
Magnesium	**110**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:27	1
Manganese	**0.23**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:27	1
Nickel	**0.016**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:27	1
Potassium	**110**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:27	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:27	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:27	1
Sodium	**350**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:27	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:27	1
Vanadium	**0.0050**		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:27	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.46**	**J**	1.0	0.18	mg/L			08/11/16 09:42	1
Sulfate	**5.9**	**B**	5.0	1.5	mg/L			08/18/16 06:38	1
Total Organic Carbon - Duplicates	**67**		4.0	1.1	mg/L			08/16/16 02:35	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**73**		5.0	2.5	mg/L			08/11/16 12:31	1
Ammonia	**60**	**B**	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:07	20
Nitrogen, Nitrite	<0.040		0.040	0.018	mg/L			08/10/16 11:13	2
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		25	8.7	ug/L			08/12/16 04:51	5
Benzene	**430**		2.5	0.73	ug/L			08/12/16 04:51	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
Bromoform	<5.0		5.0	2.4	ug/L			08/12/16 04:51	5
Bromomethane	<10		10	4.0	ug/L			08/12/16 04:51	5
Carbon disulfide	<10		10	2.2	ug/L			08/12/16 04:51	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
Chlorobenzene	**3.1**	**J**	5.0	1.9	ug/L			08/12/16 04:51	5
Chloroethane	<5.0		5.0	2.5	ug/L			08/12/16 04:51	5
Chloroform	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
Chloromethane	<5.0		5.0	1.6	ug/L			08/12/16 04:51	5
cis-1,2-Dichloroethene	**43**		5.0	2.0	ug/L			08/12/16 04:51	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			08/12/16 04:51	5
Cyclohexane	<5.0		5.0	2.4	ug/L			08/12/16 04:51	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			08/12/16 04:51	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			08/12/16 04:51	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
1,2-Dichlorobenzene	**12**		5.0	1.7	ug/L			08/12/16 04:51	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			08/12/16 04:51	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			08/12/16 04:51	5
1,1-Dichloroethane	**19**		5.0	2.1	ug/L			08/12/16 04:51	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			08/12/16 04:51	5
2-Hexanone	<25		25	7.8	ug/L			08/12/16 04:51	5
Isopropylbenzene	**75**		5.0	1.9	ug/L			08/12/16 04:51	5
Methyl acetate	<25		25	10	ug/L			08/12/16 04:51	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			08/12/16 04:51	5
Methylene Chloride	<25		25	8.2	ug/L			08/12/16 04:51	5
Methyl Ethyl Ketone	<25		25	11	ug/L			08/12/16 04:51	5
methyl isobutyl ketone	<25		25	11	ug/L			08/12/16 04:51	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
Styrene	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			08/12/16 04:51	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			08/12/16 04:51	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			08/12/16 04:51	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			08/12/16 04:51	5
Trichloroethene	**3.7**		2.5	0.82	ug/L			08/12/16 04:51	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			08/12/16 04:51	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			08/12/16 04:51	5
Vinyl chloride	**10**		2.5	1.0	ug/L			08/12/16 04:51	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 04:51*	*5*
Dibromofluoromethane	*91*		*70 - 120*		*08/12/16 04:51*	*5*

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*		*08/12/16 04:51*	*5*
Toluene-d8 (Surr)	*104*		*75 - 120*		*08/12/16 04:51*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1200**		25	9.2	ug/L			08/12/16 05:18	50
Toluene	**2800**		25	7.6	ug/L			08/12/16 05:18	50
Xylenes, Total	**8200**		50	11	ug/L			08/12/16 05:18	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 05:18*	*50*
Dibromofluoromethane	*90*		*70 - 120*		*08/12/16 05:18*	*50*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 05:18*	*50*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 05:18*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Acenaphthylene	**2.7**	**J**	3.7	1.0	ug/L		08/16/16 17:36	08/17/16 16:08	5
Acetophenone	<19		19	2.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
Anthracene	<3.7		3.7	1.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[a]pyrene	<0.74		0.74	0.37	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		08/16/16 17:36	08/17/16 16:08	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Bis(2-ethylhexyl) phthalate	<37		37	6.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Bromophenyl phenyl ether	<19		19	2.0	ug/L		08/16/16 17:36	08/17/16 16:08	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		08/16/16 17:36	08/17/16 16:08	5
Carbazole	<19		19	1.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Chloroaniline	<37		37	7.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Chloro-3-methylphenol	<37		37	8.6	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Chloronaphthalene	<7.4		7.4	0.87	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Chlorophenol	<19		19	2.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Chlorophenyl phenyl ether	<19		19	2.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
Chrysene	<1.9		1.9	0.25	ug/L		08/16/16 17:36	08/17/16 16:08	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		08/16/16 17:36	08/17/16 16:08	5
Dibenzofuran	<7.4		7.4	0.98	ug/L		08/16/16 17:36	08/17/16 16:08	5
3,3'-Dichlorobenzidine	<19		19	6.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dichlorophenol	<37		37	9.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Diethyl phthalate	**9.0**		7.4	1.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dimethylphenol	**34**	**J**	37	6.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Di-n-butyl phthalate	**4.4**	**J**	19	2.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
4,6-Dinitro-2-methylphenol	<74		74	22	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dinitrophenol	<74		74	32	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dinitrotoluene	<3.7		3.7	0.91	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,6-Dinitrotoluene	<1.9		1.9	0.27	ug/L		08/16/16 17:36	08/17/16 16:08	5

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<37		37	3.9	ug/L		08/16/16 17:36	08/17/16 16:08	5
Fluoranthene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Fluorene	<3.7		3.7	0.91	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachlorobenzene	<1.9		1.9	0.30	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachlorobutadiene	<19		19	1.9	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachlorocyclopentadiene	<74		74	24	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachloroethane	<19		19	2.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		08/16/16 17:36	08/17/16 16:08	5
Isophorone	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Methylnaphthalene	**11**		7.4	0.24	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Methylphenol	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
3 & 4 Methylphenol	**54**		7.4	1.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Naphthalene	**170**		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Nitroaniline	<19		19	4.8	ug/L		08/16/16 17:36	08/17/16 16:08	5
3-Nitroaniline	<37		37	6.6	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Nitroaniline	<37		37	6.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Nitrophenol	<37		37	9.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Nitrophenol	<74	*	74	28	ug/L		08/16/16 17:36	08/17/16 16:08	5
N-Nitrosodi-n-propylamine	<1.9		1.9	0.57	ug/L		08/16/16 17:36	08/17/16 16:08	5
N-Nitrosodiphenylamine	**10**		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
Pentachlorophenol	<74		74	15	ug/L		08/16/16 17:36	08/17/16 16:08	5
Phenanthrene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Phenol	**37**		19	2.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
Pyrene	<3.7		3.7	1.6	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4,5-Trichlorophenol	<37		37	9.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4,6-Trichlorophenol	<19		19	2.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzaldehyde	<150	^	150	56	ug/L		08/16/16 17:36	08/17/16 16:08	5
Caprolactam	<37		37	5.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
Atrazine	<19		19	2.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
1,1'-Biphenyl	<19		19	1.3	ug/L		08/16/16 17:36	08/17/16 16:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
2-Fluorophenol (Surr)	*59*		*30 - 110*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
Terphenyl-d14 (Surr)	*106*		*42 - 150*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
2,4,6-Tribromophenol (Surr)	*85*		*30 - 150*	*08/16/16 17:36*	*08/17/16 16:08*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.024	ug/L		08/10/16 09:43	08/19/16 15:49	5
alpha-BHC	<0.18		0.18	0.012	ug/L		08/10/16 09:43	08/19/16 15:49	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		08/10/16 09:43	08/19/16 15:49	5
beta-BHC	<0.18		0.18	0.047	ug/L		08/10/16 09:43	08/19/16 15:49	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		08/10/16 09:43	08/19/16 15:49	5
4,4'-DDE	<0.18		0.18	0.017	ug/L		08/10/16 09:43	08/19/16 15:49	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		08/10/16 09:43	08/19/16 15:49	5

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.18		0.18	0.047	ug/L		08/10/16 09:43	08/19/16 15:49	5
Dieldrin	<0.18		0.18	0.059	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endosulfan I	<0.18		0.18	0.019	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endosulfan II	<0.18		0.18	0.013	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endrin	<0.18		0.18	0.065	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endrin ketone	<0.18		0.18	0.078	ug/L		08/10/16 09:43	08/19/16 15:49	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		08/10/16 09:43	08/19/16 15:49	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		08/10/16 09:43	08/19/16 15:49	5
Heptachlor	<0.18		0.18	0.062	ug/L		08/10/16 09:43	08/19/16 15:49	5
Heptachlor epoxide	<0.18		0.18	0.064	ug/L		08/10/16 09:43	08/19/16 15:49	5
Methoxychlor	<0.37		0.37	0.11	ug/L		08/10/16 09:43	08/19/16 15:49	5
Toxaphene	<1.8		1.8	0.92	ug/L		08/10/16 09:43	08/19/16 15:49	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*59*		*30 - 143*	*08/10/16 09:43*	*08/19/16 15:49*	*5*
Tetrachloro-m-xylene	*468*	*X*	*30 - 120*	*08/10/16 09:43*	*08/19/16 15:49*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/10/16 09:43	08/12/16 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*89*		*30 - 127*	*08/10/16 09:43*	*08/12/16 16:27*	*1*
DCB Decachlorobiphenyl	*84*		*30 - 150*	*08/10/16 09:43*	*08/12/16 16:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.096**	**J**	0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:40	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:40	1
Arsenic	**0.0068**	**J**	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:40	1
Barium	**0.21**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:40	1
Cadmium	**0.00096**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:40	1
Calcium	**83**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:40	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:40	1
Cobalt	**0.0013**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:40	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:40	1
Iron	**6.1**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:40	1
Lead	**0.0032**	**J**	0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:40	1
Magnesium	**42**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:40	1
Manganese	**0.31**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:40	1
Nickel	**0.0087**	**J**	0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	58		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:40	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:40	1
Sodium	200		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:40	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:40	1
Vanadium	0.0037	J	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:40	1
Zinc	0.011	J	0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:40	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:32	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:32	1
Arsenic	0.0095	J	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:32	1
Barium	0.20		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:32	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:32	1
Calcium	91		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:32	1
Chromium	0.0032	J	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:32	1
Cobalt	0.0016	J	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:32	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:32	1
Iron	3.3		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:32	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:32	1
Magnesium	39		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:32	1
Manganese	0.27		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:32	1
Nickel	0.0098	J	0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:32	1
Potassium	56		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:32	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:32	1
Sodium	200		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:32	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:32	1
Vanadium	0.0040	J	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:32	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00014	J B	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.61	J	1.0	0.18	mg/L			08/11/16 09:45	1
Sulfate	86	B	20	5.9	mg/L			08/18/16 06:41	4
Total Organic Carbon - Duplicates	54		4.0	1.1	mg/L			08/16/16 02:51	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	28		5.0	2.5	mg/L			08/11/16 12:32	1
Ammonia	56	B	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:09	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-13-GW-08092016
Date Collected: 08/09/16 09:20
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-7
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**38**		25	8.7	ug/L			08/12/16 12:25	5
Benzene	**390**		2.5	0.73	ug/L			08/12/16 12:25	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
Bromoform	<5.0		5.0	2.4	ug/L			08/12/16 12:25	5
Bromomethane	<10		10	4.0	ug/L			08/12/16 12:25	5
Carbon disulfide	<10		10	2.2	ug/L			08/12/16 12:25	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
Chlorobenzene	**3.2**	**J**	5.0	1.9	ug/L			08/12/16 12:25	5
Chloroethane	<5.0		5.0	2.5	ug/L			08/12/16 12:25	5
Chloroform	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
Chloromethane	<5.0		5.0	1.6	ug/L			08/12/16 12:25	5
cis-1,2-Dichloroethene	**34**		5.0	2.0	ug/L			08/12/16 12:25	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			08/12/16 12:25	5
Cyclohexane	<5.0		5.0	2.4	ug/L			08/12/16 12:25	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			08/12/16 12:25	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			08/12/16 12:25	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
1,2-Dichlorobenzene	**13**		5.0	1.7	ug/L			08/12/16 12:25	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			08/12/16 12:25	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			08/12/16 12:25	5
1,1-Dichloroethane	**16**		5.0	2.1	ug/L			08/12/16 12:25	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			08/12/16 12:25	5
2-Hexanone	<25		25	7.8	ug/L			08/12/16 12:25	5
Isopropylbenzene	**100**		5.0	1.9	ug/L			08/12/16 12:25	5
Methyl acetate	<25		25	10	ug/L			08/12/16 12:25	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			08/12/16 12:25	5
Methylene Chloride	<25		25	8.2	ug/L			08/12/16 12:25	5
Methyl Ethyl Ketone	<25		25	11	ug/L			08/12/16 12:25	5
methyl isobutyl ketone	<25		25	11	ug/L			08/12/16 12:25	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
Styrene	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			08/12/16 12:25	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			08/12/16 12:25	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			08/12/16 12:25	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			08/12/16 12:25	5
Trichloroethene	**3.6**		2.5	0.82	ug/L			08/12/16 12:25	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			08/12/16 12:25	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			08/12/16 12:25	5
Vinyl chloride	**11**		2.5	1.0	ug/L			08/12/16 12:25	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*08/12/16 12:25*	*5*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 12:25*	*5*

Client Sample ID: DUP-1(08092016)

Lab Sample ID: 500-115474-8

Date Collected: 08/09/16 00:00

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 12:25*	*5*
Toluene-d8 (Surr)	*104*		*75 - 120*		*08/12/16 12:25*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1400**		25	9.2	ug/L			08/12/16 12:51	50
Toluene	**2700**		25	7.6	ug/L			08/12/16 12:51	50
Xylenes, Total	**9800**		50	11	ug/L			08/12/16 12:51	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*71 - 120*		*08/12/16 12:51*	*50*
Dibromofluoromethane	*88*		*70 - 120*		*08/12/16 12:51*	*50*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*08/12/16 12:51*	*50*
Toluene-d8 (Surr)	*104*		*75 - 120*		*08/12/16 12:51*	*50*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
Acenaphthylene	**2.5**	**J**	3.7	0.99	ug/L		08/16/16 17:36	08/17/16 16:33	5
Acetophenone	<18		18	2.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
Anthracene	<3.7		3.7	1.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[a]pyrene	<0.74		0.74	0.37	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		08/16/16 17:36	08/17/16 16:33	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.0	ug/L		08/16/16 17:36	08/17/16 16:33	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/16/16 17:36	08/17/16 16:33	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		08/16/16 17:36	08/17/16 16:33	5
Carbazole	<18		18	1.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Chloroaniline	<37		37	7.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Chloro-3-methylphenol	<37		37	8.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Chloronaphthalene	<7.4		7.4	0.87	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Chlorophenol	<18		18	2.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
Chrysene	<1.8		1.8	0.25	ug/L		08/16/16 17:36	08/17/16 16:33	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		08/16/16 17:36	08/17/16 16:33	5
Dibenzofuran	<7.4		7.4	0.97	ug/L		08/16/16 17:36	08/17/16 16:33	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dichlorophenol	<37		37	9.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
Diethyl phthalate	**8.8**		7.4	1.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dimethylphenol	**32**	**J**	37	6.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Di-n-butyl phthalate	**4.2**	**J**	18	2.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
4,6-Dinitro-2-methylphenol	<74		74	22	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dinitrophenol	<74		74	32	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dinitrotoluene	<3.7		3.7	0.91	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/16/16 17:36	08/17/16 16:33	5

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<37		37	3.9	ug/L		08/16/16 17:36	08/17/16 16:33	5
Fluoranthene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
Fluorene	<3.7		3.7	0.90	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachlorocyclopentadiene	<74		74	24	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachloroethane	<18		18	2.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		08/16/16 17:36	08/17/16 16:33	5
Isophorone	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Methylnaphthalene	**11**		7.4	0.24	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Methylphenol	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
3 & 4 Methylphenol	**54**		7.4	1.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
Naphthalene	**160**		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Nitroaniline	<18		18	4.8	ug/L		08/16/16 17:36	08/17/16 16:33	5
3-Nitroaniline	<37		37	6.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Nitroaniline	<37		37	6.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Nitrophenol	<37		37	9.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Nitrophenol	<74	*	74	27	ug/L		08/16/16 17:36	08/17/16 16:33	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.57	ug/L		08/16/16 17:36	08/17/16 16:33	5
N-Nitrosodiphenylamine	<3.7		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
Pentachlorophenol	<74		74	15	ug/L		08/16/16 17:36	08/17/16 16:33	5
Phenanthrene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
Phenol	**36**		18	2.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
Pyrene	<3.7		3.7	1.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4,5-Trichlorophenol	<37		37	9.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzaldehyde	<150	^	150	56	ug/L		08/16/16 17:36	08/17/16 16:33	5
Caprolactam	<37		37	5.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
Atrazine	<18		18	2.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/16/16 17:36	08/17/16 16:33	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*58*		*30 - 123*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
Phenol-d5 (Surr)	*48*		*20 - 100*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
2,4,6-Tribromophenol (Surr)	*90*		*30 - 150*	*08/16/16 17:36*	*08/17/16 16:33*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.025	ug/L		08/10/16 09:43	08/19/16 16:08	5
alpha-BHC	<0.18		0.18	0.012	ug/L		08/10/16 09:43	08/19/16 16:08	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		08/10/16 09:43	08/19/16 16:08	5
beta-BHC	<0.18		0.18	0.047	ug/L		08/10/16 09:43	08/19/16 16:08	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		08/10/16 09:43	08/19/16 16:08	5
4,4'-DDE	<0.18		0.18	0.018	ug/L		08/10/16 09:43	08/19/16 16:08	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		08/10/16 09:43	08/19/16 16:08	5

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.18		0.18	0.048	ug/L		08/10/16 09:43	08/19/16 16:08	5
Dieldrin	<0.18		0.18	0.060	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endosulfan I	<0.18		0.18	0.019	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endosulfan II	<0.18		0.18	0.013	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endrin	<0.18		0.18	0.066	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endrin ketone	<0.18		0.18	0.079	ug/L		08/10/16 09:43	08/19/16 16:08	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		08/10/16 09:43	08/19/16 16:08	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		08/10/16 09:43	08/19/16 16:08	5
Heptachlor	<0.18		0.18	0.062	ug/L		08/10/16 09:43	08/19/16 16:08	5
Heptachlor epoxide	<0.18		0.18	0.064	ug/L		08/10/16 09:43	08/19/16 16:08	5
Methoxychlor	<0.37		0.37	0.11	ug/L		08/10/16 09:43	08/19/16 16:08	5
Toxaphene	<1.8		1.8	0.92	ug/L		08/10/16 09:43	08/19/16 16:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*34*		*30 - 143*	*08/10/16 09:43*	*08/19/16 16:08*	*5*
Tetrachloro-m-xylene	*475*	*X*	*30 - 120*	*08/10/16 09:43*	*08/19/16 16:08*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/15/16 09:16	08/22/16 13:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*62*		*30 - 127*	*08/15/16 09:16*	*08/22/16 13:38*	*1*
DCB Decachlorobiphenyl	*45*		*30 - 150*	*08/15/16 09:16*	*08/22/16 13:38*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.12**	**J**	0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:52	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:52	1
Arsenic	**0.0096**	**J**	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:52	1
Barium	**0.21**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:52	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:52	1
Calcium	**93**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:52	1
Chromium	**0.0039**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:52	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:52	1
Copper	**0.0029**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:52	1
Iron	**5.6**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:52	1
Magnesium	**40**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:52	1
Manganese	**0.29**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:52	1
Nickel	**0.011**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	**59**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:52	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:52	1
Sodium	**210**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:52	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:52	1
Vanadium	**0.0045**	**J**	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:52	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:52	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:36	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:36	1
Arsenic	**0.0062**	**J**	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:36	1
Barium	**0.22**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:36	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:36	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:36	1
Calcium	**86**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:36	1
Chromium	**0.0037**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:36	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:36	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:36	1
Iron	**5.9**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:36	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:36	1
Magnesium	**45**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:36	1
Manganese	**0.31**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:36	1
Nickel	**0.0092**	**J**	0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:36	1
Potassium	**62**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:36	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:36	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:36	1
Sodium	**210**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:36	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:36	1
Vanadium	**0.0031**	**J**	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:36	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:51	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J B**	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.7**		1.0	0.18	mg/L			08/11/16 09:49	1
Sulfate	**96**	**B**	20	5.9	mg/L			08/17/16 07:01	4
Total Organic Carbon - Duplicates	**56**		4.0	1.1	mg/L			08/16/16 03:08	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**22**		5.0	2.5	mg/L			08/11/16 12:34	1
Ammonia	**66**	**B**	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:12	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:15	1

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-1(08092016)
Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**46**		5.0	1.7	ug/L			08/12/16 13:18	1
Benzene	**6.0**		0.50	0.15	ug/L			08/12/16 13:18	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 13:18	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 13:18	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 13:18	1
Carbon disulfide	**0.71**	**J**	2.0	0.45	ug/L			08/12/16 13:18	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 13:18	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 13:18	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 13:18	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 13:18	1
cis-1,2-Dichloroethene	**4.3**		1.0	0.41	ug/L			08/12/16 13:18	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 13:18	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 13:18	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 13:18	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 13:18	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
1,2-Dichlorobenzene	**1.9**		1.0	0.33	ug/L			08/12/16 13:18	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 13:18	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			08/12/16 13:18	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 13:18	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 13:18	1
1,2-Dichloroethane	**1.5**		1.0	0.39	ug/L			08/12/16 13:18	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 13:18	1
Ethylbenzene	**85**		0.50	0.18	ug/L			08/12/16 13:18	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 13:18	1
Isopropylbenzene	**5.0**		1.0	0.39	ug/L			08/12/16 13:18	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 13:18	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 13:18	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 13:18	1
Methyl Ethyl Ketone	**21**		5.0	2.1	ug/L			08/12/16 13:18	1
methyl isobutyl ketone	**27**		5.0	2.2	ug/L			08/12/16 13:18	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 13:18	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 13:18	1
Toluene	**160**		0.50	0.15	ug/L			08/12/16 13:18	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 13:18	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 13:18	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 13:18	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 13:18	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 13:18	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 13:18	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 13:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 13:18	1
Vinyl chloride	**3.3**		0.50	0.20	ug/L			08/12/16 13:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*71 - 120*		*08/12/16 13:18*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*08/12/16 13:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 13:18*	*1*
Toluene-d8 (Surr)	*105*		*75 - 120*		*08/12/16 13:18*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**310**		10	2.2	ug/L			08/12/16 13:45	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 13:45*	*10*
Dibromofluoromethane	*90*		*70 - 120*		*08/12/16 13:45*	*10*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 13:45*	*10*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 13:45*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Acenaphthylene	<3.6		3.6	0.97	ug/L		08/10/16 16:28	08/15/16 17:31	5
Acetophenone	<18		18	2.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Anthracene	<3.6		3.6	1.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[a]pyrene	<0.73	*	0.73	0.36	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[b]fluoranthene	<0.73	*	0.73	0.29	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[g,h,i]perylene	<3.6	*	3.6	1.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[k]fluoranthene	<0.73	*	0.73	0.23	ug/L		08/10/16 16:28	08/15/16 17:31	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		08/10/16 16:28	08/15/16 17:31	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Bis(2-ethylhexyl) phthalate	**66**		36	6.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:31	5
Butyl benzyl phthalate	<7.3		7.3	1.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
Carbazole	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Chloroaniline	<36		36	7.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Chlorophenol	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
Chrysene	<1.8		1.8	0.25	ug/L		08/10/16 16:28	08/15/16 17:31	5
Dibenz(a,h)anthracene	<1.1	*	1.1	0.18	ug/L		08/10/16 16:28	08/15/16 17:31	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		08/10/16 16:28	08/15/16 17:31	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		08/10/16 16:28	08/15/16 17:31	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dimethylphenol	<36		36	6.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
4,6-Dinitro-2-methylphenol	<73		73	21	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dinitrophenol	<73		73	31	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/10/16 16:28	08/15/16 17:31	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		08/10/16 16:28	08/15/16 17:31	5

Client Sample ID: DUP-2(08092016)

Lab Sample ID: 500-115474-9

Date Collected: 08/09/16 00:00

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
Fluorene	<3.6		3.6	0.89	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachloroethane	<18		18	2.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
Indeno[1,2,3-cd]pyrene	<0.73	*	0.73	0.27	ug/L		08/10/16 16:28	08/15/16 17:31	5
Isophorone	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Methylnaphthalene	**2.8**	**J**	7.3	0.24	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Methylphenol	**17**		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
3 & 4 Methylphenol	**120**		7.3	1.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
Naphthalene	**18**		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Nitroaniline	<18		18	4.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
3-Nitroaniline	<36		36	6.5	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Nitroaniline	<36		36	6.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Nitrophenol	<36		36	9.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Nitrophenol	<73		73	27	ug/L		08/10/16 16:28	08/15/16 17:31	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		08/10/16 16:28	08/15/16 17:31	5
N-Nitrosodiphenylamine	**1.9**	**J**	3.6	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Pentachlorophenol	<73		73	14	ug/L		08/10/16 16:28	08/15/16 17:31	5
Phenanthrene	<3.6		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Phenol	**47**		18	2.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Pyrene	<3.6		3.6	1.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzaldehyde	<150	^	150	55	ug/L		08/10/16 16:28	08/15/16 17:31	5
Caprolactam	<36		36	5.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Atrazine	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*30 - 123*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
2-Fluorophenol (Surr)	*67*		*30 - 110*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
Phenol-d5 (Surr)	*62*		*20 - 100*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
Terphenyl-d14 (Surr)	*151*	*X*	*42 - 150*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
2,4,6-Tribromophenol (Surr)	*76*		*30 - 150*	*08/10/16 16:28*	*08/15/16 17:31*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.19		0.19	0.025	ug/L		08/10/16 09:43	08/19/16 16:27	5
alpha-BHC	<0.19		0.19	0.012	ug/L		08/10/16 09:43	08/19/16 16:27	5
alpha-Chlordane	<0.19		0.19	0.021	ug/L		08/10/16 09:43	08/19/16 16:27	5
beta-BHC	<0.19		0.19	0.048	ug/L		08/10/16 09:43	08/19/16 16:27	5
4,4'-DDD	<0.19		0.19	0.063	ug/L		08/10/16 09:43	08/19/16 16:27	5
4,4'-DDE	<0.19		0.19	0.018	ug/L		08/10/16 09:43	08/19/16 16:27	5
4,4'-DDT	<0.19		0.19	0.015	ug/L		08/10/16 09:43	08/19/16 16:27	5
delta-BHC	<0.19		0.19	0.049	ug/L		08/10/16 09:43	08/19/16 16:27	5

Client Sample ID: DUP-2(08092016)

Lab Sample ID: 500-115474-9

Date Collected: 08/09/16 00:00

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.19		0.19	0.061	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endosulfan I	<0.19		0.19	0.019	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endosulfan II	<0.19		0.19	0.013	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endosulfan sulfate	<0.19		0.19	0.055	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endrin	<0.19		0.19	0.067	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endrin aldehyde	<0.19		0.19	0.039	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endrin ketone	<0.19		0.19	0.080	ug/L		08/10/16 09:43	08/19/16 16:27	5
gamma-BHC (Lindane)	<0.19		0.19	0.026	ug/L		08/10/16 09:43	08/19/16 16:27	5
gamma-Chlordane	<0.19		0.19	0.034	ug/L		08/10/16 09:43	08/19/16 16:27	5
Heptachlor	<0.19		0.19	0.064	ug/L		08/10/16 09:43	08/19/16 16:27	5
Heptachlor epoxide	<0.19		0.19	0.065	ug/L		08/10/16 09:43	08/19/16 16:27	5
Methoxychlor	<0.38		0.38	0.11	ug/L		08/10/16 09:43	08/19/16 16:27	5
Toxaphene	<1.9		1.9	0.94	ug/L		08/10/16 09:43	08/19/16 16:27	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*2*	*X*	*30 - 143*	*08/10/16 09:43*	*08/19/16 16:27*	*5*
Tetrachloro-m-xylene	*90*		*30 - 120*	*08/10/16 09:43*	*08/19/16 16:27*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.063	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1221	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1232	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1242	**3.9**		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1248	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1254	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1260	<0.38		0.38	0.066	ug/L		08/10/16 09:43	08/23/16 08:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*47*		*30 - 127*	*08/10/16 09:43*	*08/23/16 08:48*	*1*
DCB Decachlorobiphenyl	*19*	*X*	*30 - 150*	*08/10/16 09:43*	*08/23/16 08:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.38**		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:57	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:57	1
Arsenic	**0.028**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:57	1
Barium	**0.35**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:57	1
Cadmium	**0.0019**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:57	1
Calcium	**35**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:57	1
Chromium	**0.10**		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:57	1
Cobalt	**0.031**		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:57	1
Copper	**0.012**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:57	1
Iron	**1.4**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:57	1
Lead	**0.10**		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:57	1
Magnesium	**29**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:57	1
Manganese	**0.012**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:57	1
Nickel	**0.12**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:57	1
Potassium	**530**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0053	J	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:57	1
Sodium	2700		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:10	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:57	1
Vanadium	0.064		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:57	1
Zinc	0.14		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.21		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:49	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/11/16 14:10	1
Arsenic	0.025		0.010	0.0034	mg/L		08/10/16 08:27	08/11/16 14:10	1
Barium	0.30		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:49	1
Cadmium	0.0014	J ^	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:49	1
Calcium	30		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:49	1
Chromium	0.089		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:49	1
Cobalt	0.026		0.0050	0.00096	mg/L		08/10/16 08:27	08/11/16 14:10	1
Copper	0.0060	J	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:49	1
Iron	1.0		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:49	1
Lead	0.044	^	0.0050	0.0025	mg/L		08/10/16 08:27	08/13/16 00:00	1
Magnesium	26		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:49	1
Manganese	0.0077	J	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:49	1
Nickel	0.097		0.010	0.0037	mg/L		08/10/16 08:27	08/11/16 14:10	1
Potassium	470		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:49	1
Selenium	0.0057	J ^	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:49	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:49	1
Sodium	2400		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:26	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:49	1
Vanadium	0.053		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:49	1
Zinc	0.061		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00018	J B	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:54	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	6.5		1.0	0.18	mg/L			08/11/16 09:53	1
Sulfate	12	J B	20	5.9	mg/L			08/17/16 07:00	4
Total Organic Carbon - Duplicates	370		20	5.3	mg/L			08/16/16 03:24	20
Nitrogen, Nitrate	0.038	J	0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	4.5	J	5.0	2.5	mg/L			08/11/16 12:36	1
Ammonia	490	B	40	5.7	mg/L		08/16/16 21:15	08/18/16 22:39	50
Nitrogen, Nitrite	<0.040		0.040	0.018	mg/L			08/10/16 11:15	2
Nitrogen, Nitrate Nitrite	0.038	J	0.10	0.035	mg/L			08/16/16 23:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: Composite Drum Sample

Lab Sample ID: 500-115474-10

Date Collected: 08/09/16 16:00
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 14:12	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 14:12	1
Vinyl chloride	**1.4**		0.50	0.20	ug/L			08/12/16 14:12	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 14:12	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 14:12	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 14:12	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 14:12	1
Acetone	**44**		5.0	1.7	ug/L			08/12/16 14:12	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 14:12	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 14:12	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 14:12	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 14:12	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
1,1-Dichloroethane	**2.6**		1.0	0.41	ug/L			08/12/16 14:12	1
cis-1,2-Dichloroethene	**5.4**		1.0	0.41	ug/L			08/12/16 14:12	1
Methyl Ethyl Ketone	**17**		5.0	2.1	ug/L			08/12/16 14:12	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 14:12	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 14:12	1
Cyclohexane	**3.3**		1.0	0.49	ug/L			08/12/16 14:12	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 14:12	1
Benzene	**55**		0.50	0.15	ug/L			08/12/16 14:12	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
Trichloroethene	**0.42**	**J**	0.50	0.16	ug/L			08/12/16 14:12	1
Methylcyclohexane	**3.0**		1.0	0.32	ug/L			08/12/16 14:12	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 14:12	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 14:12	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 14:12	1
methyl isobutyl ketone	**16**		5.0	2.2	ug/L			08/12/16 14:12	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 14:12	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 14:12	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 14:12	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 14:12	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 14:12	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
Chlorobenzene	**3.6**		1.0	0.39	ug/L			08/12/16 14:12	1
Ethylbenzene	**110**		0.50	0.18	ug/L			08/12/16 14:12	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 14:12	1
Isopropylbenzene	**7.4**		1.0	0.39	ug/L			08/12/16 14:12	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 14:12	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 14:12	1
1,4-Dichlorobenzene	**0.73**	**J**	1.0	0.36	ug/L			08/12/16 14:12	1
1,2-Dichlorobenzene	**1.5**		1.0	0.33	ug/L			08/12/16 14:12	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 14:12	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*		*08/12/16 14:12*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: Composite Drum Sample

Lab Sample ID: 500-115474-10

Date Collected: 08/09/16 16:00
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*75 - 120*		*08/12/16 14:12*	*1*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 14:12*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*08/12/16 14:12*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**270**		5.0	1.5	ug/L			08/12/16 14:38	10
Xylenes, Total	**560**		10	2.2	ug/L			08/12/16 14:38	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 14:38*	*10*
Toluene-d8 (Surr)	*105*		*75 - 120*		*08/12/16 14:38*	*10*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*08/12/16 14:38*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 14:38*	*10*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	**>176**		40.0	40.0	Degrees F			08/19/16 12:39	1
pH	**8.0**	**HF**	0.2	0.2	SU			08/11/16 16:27	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
X	Surrogate is outside control limits
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

GC/MS VOA

Analysis Batch: 347454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	8260B	
500-115474-1 - DL	MW-06-GW-08092016	Total/NA	Water	8260B	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	8260B	
500-115474-2 - DL	MW-07-GW-08092016	Total/NA	Water	8260B	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	8260B	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	8260B	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	8260B	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	8260B	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	8260B	
500-115474-7 - DL	MW-13-GW-08092016	Total/NA	Water	8260B	
MB 500-347454/5	Method Blank	Total/NA	Water	8260B	
LCS 500-347454/4	Lab Control Sample	Total/NA	Water	8260B	
500-115474-3 MS	MW-08-GW-08092016	Total/NA	Water	8260B	
500-115474-3 MSD	MW-08-GW-08092016	Total/NA	Water	8260B	

Analysis Batch: 347516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-8	DUP-1(08092016)	Total/NA	Water	8260B	
500-115474-8 - DL	DUP-1(08092016)	Total/NA	Water	8260B	
500-115474-9	DUP-2(08092016)	Total/NA	Water	8260B	
500-115474-9 - DL	DUP-2(08092016)	Total/NA	Water	8260B	
500-115474-10	Composite Drum Sample	Total/NA	Water	8260B	
500-115474-10 - DL	Composite Drum Sample	Total/NA	Water	8260B	
MB 500-347516/7	Method Blank	Total/NA	Water	8260B	
LCS 500-347516/5	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 347328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	3510C	
500-115474-1 - RA	MW-06-GW-08092016	Total/NA	Water	3510C	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	3510C	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	3510C	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	3510C	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	3510C	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	3510C	
500-115474-9	DUP-2(08092016)	Total/NA	Water	3510C	
500-115474-9 - RA	DUP-2(08092016)	Total/NA	Water	3510C	
MB 500-347328/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-347328/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-347328/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 347422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-347328/1-A	Method Blank	Total/NA	Water	8270D	347328
LCS 500-347328/2-A	Lab Control Sample	Total/NA	Water	8270D	347328
LCSD 500-347328/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	347328

GC/MS Semi VOA (Continued)

Analysis Batch: 347729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	8270D	347328
500-115474-1 - RA	MW-06-GW-08092016	Total/NA	Water	8270D	347328
500-115474-3	MW-08-GW-08092016	Total/NA	Water	8270D	347328
500-115474-4	MW-09-GW-08092016	Total/NA	Water	8270D	347328
500-115474-5	MW-10-GW-08092016	Total/NA	Water	8270D	347328
500-115474-6	MW-11-GW-08092016	Total/NA	Water	8270D	347328
500-115474-9	DUP-2(08092016)	Total/NA	Water	8270D	347328
500-115474-9 - RA	DUP-2(08092016)	Total/NA	Water	8270D	347328

Analysis Batch: 347999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-2	MW-07-GW-08092016	Total/NA	Water	8270D	347328

Prep Batch: 348028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-7	MW-13-GW-08092016	Total/NA	Water	3510C	
500-115474-8	DUP-1(08092016)	Total/NA	Water	3510C	
MB 500-348028/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-348028/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-348028/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 348088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-7	MW-13-GW-08092016	Total/NA	Water	8270D	348028
500-115474-8	DUP-1(08092016)	Total/NA	Water	8270D	348028
MB 500-348028/1-A	Method Blank	Total/NA	Water	8270D	348028
LCS 500-348028/2-A	Lab Control Sample	Total/NA	Water	8270D	348028
LCSD 500-348028/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	348028

GC Semi VOA

Analysis Batch: 347264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-2	MW-07-GW-08092016	Total/NA	Water	8082A	347272
500-115474-4	MW-09-GW-08092016	Total/NA	Water	8082A	347272

Prep Batch: 347272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	3510C	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	3510C	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	3510C	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	3510C	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	3510C	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	3510C	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	3510C	
500-115474-8	DUP-1(08092016)	Total/NA	Water	3510C	
500-115474-9	DUP-2(08092016)	Total/NA	Water	3510C	
MB 500-347272/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-347272/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-347272/4-A	Lab Control Sample	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 347272 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 500-347272/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-347272/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 347618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	8082A	347272
500-115474-5	MW-10-GW-08092016	Total/NA	Water	8082A	347272
500-115474-7	MW-13-GW-08092016	Total/NA	Water	8082A	347272
MB 500-347272/1-A	Method Blank	Total/NA	Water	8082A	347272
LCS 500-347272/4-A	Lab Control Sample	Total/NA	Water	8082A	347272
LCSD 500-347272/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	347272

Prep Batch: 347771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-3	MW-08-GW-08092016	Total/NA	Water	3510C	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	3510C	
500-115474-8	DUP-1(08092016)	Total/NA	Water	3510C	
MB 500-347771/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-347771/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-347771/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 347806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-3	MW-08-GW-08092016	Total/NA	Water	8082A	347771
500-115474-6	MW-11-GW-08092016	Total/NA	Water	8082A	347771
MB 500-347771/1-A	Method Blank	Total/NA	Water	8082A	347771
LCS 500-347771/4-A	Lab Control Sample	Total/NA	Water	8082A	347771
LCSD 500-347771/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	347771

Analysis Batch: 348468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	8081B	347272
500-115474-2	MW-07-GW-08092016	Total/NA	Water	8081B	347272
500-115474-3	MW-08-GW-08092016	Total/NA	Water	8081B	347272
500-115474-4	MW-09-GW-08092016	Total/NA	Water	8081B	347272
500-115474-5	MW-10-GW-08092016	Total/NA	Water	8081B	347272
500-115474-6	MW-11-GW-08092016	Total/NA	Water	8081B	347272
500-115474-7	MW-13-GW-08092016	Total/NA	Water	8081B	347272
500-115474-8	DUP-1(08092016)	Total/NA	Water	8081B	347272
500-115474-9	DUP-2(08092016)	Total/NA	Water	8081B	347272
MB 500-347272/1-A	Method Blank	Total/NA	Water	8081B	347272
LCS 500-347272/2-A	Lab Control Sample	Total/NA	Water	8081B	347272
LCSD 500-347272/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	347272

Analysis Batch: 348729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-8	DUP-1(08092016)	Total/NA	Water	8082A	347771
500-115474-9	DUP-2(08092016)	Total/NA	Water	8082A	347272

GC Semi VOA (Continued)

Prep Batch: 348910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-2 - RE	MW-07-GW-08092016	Total/NA	Water	3510C	
MB 500-348910/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-348910/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-348910/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 348948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-2 - RE	MW-07-GW-08092016	Total/NA	Water	8082A	348910
MB 500-348910/1-A	Method Blank	Total/NA	Water	8082A	348910
LCS 500-348910/4-A	Lab Control Sample	Total/NA	Water	8082A	348910
LCSD 500-348910/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	348910

Metals

Prep Batch: 347256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Dissolved	Water	3010A	
500-115474-1	MW-06-GW-08092016	Total/NA	Water	3010A	
500-115474-2	MW-07-GW-08092016	Dissolved	Water	3010A	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	3010A	
500-115474-3	MW-08-GW-08092016	Dissolved	Water	3010A	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	3010A	
500-115474-4	MW-09-GW-08092016	Dissolved	Water	3010A	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	3010A	
500-115474-5	MW-10-GW-08092016	Dissolved	Water	3010A	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	3010A	
500-115474-6	MW-11-GW-08092016	Dissolved	Water	3010A	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	3010A	
500-115474-7	MW-13-GW-08092016	Dissolved	Water	3010A	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	3010A	
500-115474-8	DUP-1(08092016)	Dissolved	Water	3010A	
500-115474-8	DUP-1(08092016)	Total/NA	Water	3010A	
500-115474-9	DUP-2(08092016)	Dissolved	Water	3010A	
500-115474-9	DUP-2(08092016)	Total/NA	Water	3010A	
MB 500-347256/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-347256/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 500-347256/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Prep Batch: 347302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Dissolved	Water	7470A	
500-115474-1	MW-06-GW-08092016	Total/NA	Water	7470A	
500-115474-2	MW-07-GW-08092016	Dissolved	Water	7470A	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	7470A	
500-115474-3	MW-08-GW-08092016	Dissolved	Water	7470A	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	7470A	
500-115474-4	MW-09-GW-08092016	Dissolved	Water	7470A	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	7470A	
500-115474-5	MW-10-GW-08092016	Dissolved	Water	7470A	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 347302 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-6	MW-11-GW-08092016	Dissolved	Water	7470A	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	7470A	
500-115474-7	MW-13-GW-08092016	Dissolved	Water	7470A	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	7470A	
500-115474-8	DUP-1(08092016)	Dissolved	Water	7470A	
500-115474-8	DUP-1(08092016)	Total/NA	Water	7470A	
500-115474-9	DUP-2(08092016)	Dissolved	Water	7470A	
500-115474-9	DUP-2(08092016)	Total/NA	Water	7470A	
MB 500-347302/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-347302/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-115474-1 MS	MW-06-GW-08092016	Total/NA	Water	7470A	
500-115474-1 MSD	MW-06-GW-08092016	Total/NA	Water	7470A	
500-115474-1 DU	MW-06-GW-08092016	Total/NA	Water	7470A	

Analysis Batch: 347378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Dissolved	Water	6010C	347256
500-115474-1	MW-06-GW-08092016	Total/NA	Water	6010C	347256
500-115474-2	MW-07-GW-08092016	Dissolved	Water	6010C	347256
500-115474-2	MW-07-GW-08092016	Total/NA	Water	6010C	347256
500-115474-3	MW-08-GW-08092016	Dissolved	Water	6010C	347256
500-115474-3	MW-08-GW-08092016	Total/NA	Water	6010C	347256
500-115474-4	MW-09-GW-08092016	Dissolved	Water	6010C	347256
500-115474-4	MW-09-GW-08092016	Total/NA	Water	6010C	347256
500-115474-5	MW-10-GW-08092016	Dissolved	Water	6010C	347256
500-115474-5	MW-10-GW-08092016	Total/NA	Water	6010C	347256
500-115474-6	MW-11-GW-08092016	Dissolved	Water	6010C	347256
500-115474-6	MW-11-GW-08092016	Total/NA	Water	6010C	347256
500-115474-7	MW-13-GW-08092016	Dissolved	Water	6010C	347256
500-115474-7	MW-13-GW-08092016	Total/NA	Water	6010C	347256
500-115474-8	DUP-1(08092016)	Dissolved	Water	6010C	347256
500-115474-8	DUP-1(08092016)	Total/NA	Water	6010C	347256
500-115474-9	DUP-2(08092016)	Dissolved	Water	6010C	347256
500-115474-9	DUP-2(08092016)	Total/NA	Water	6010C	347256
MB 500-347256/1-A	Method Blank	Total/NA	Water	6010C	347256
LCS 500-347256/2-A	Lab Control Sample	Total/NA	Water	6010C	347256
LCSD 500-347256/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	347256

Analysis Batch: 347474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Dissolved	Water	7470A	347302
500-115474-1	MW-06-GW-08092016	Total/NA	Water	7470A	347302
500-115474-2	MW-07-GW-08092016	Dissolved	Water	7470A	347302
500-115474-2	MW-07-GW-08092016	Total/NA	Water	7470A	347302
500-115474-3	MW-08-GW-08092016	Dissolved	Water	7470A	347302
500-115474-3	MW-08-GW-08092016	Total/NA	Water	7470A	347302
500-115474-4	MW-09-GW-08092016	Dissolved	Water	7470A	347302
500-115474-4	MW-09-GW-08092016	Total/NA	Water	7470A	347302
500-115474-5	MW-10-GW-08092016	Dissolved	Water	7470A	347302
500-115474-5	MW-10-GW-08092016	Total/NA	Water	7470A	347302
500-115474-6	MW-11-GW-08092016	Dissolved	Water	7470A	347302

Metals (Continued)

Analysis Batch: 347474 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-6	MW-11-GW-08092016	Total/NA	Water	7470A	347302
500-115474-7	MW-13-GW-08092016	Dissolved	Water	7470A	347302
500-115474-7	MW-13-GW-08092016	Total/NA	Water	7470A	347302
500-115474-8	DUP-1(08092016)	Dissolved	Water	7470A	347302
500-115474-8	DUP-1(08092016)	Total/NA	Water	7470A	347302
500-115474-9	DUP-2(08092016)	Dissolved	Water	7470A	347302
500-115474-9	DUP-2(08092016)	Total/NA	Water	7470A	347302
MB 500-347302/12-A	Method Blank	Total/NA	Water	7470A	347302
LCS 500-347302/13-A	Lab Control Sample	Total/NA	Water	7470A	347302
500-115474-1 MS	MW-06-GW-08092016	Total/NA	Water	7470A	347302
500-115474-1 MSD	MW-06-GW-08092016	Total/NA	Water	7470A	347302
500-115474-1 DU	MW-06-GW-08092016	Total/NA	Water	7470A	347302

Analysis Batch: 347551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Dissolved	Water	6010C	347256
500-115474-1	MW-06-GW-08092016	Total/NA	Water	6010C	347256
500-115474-2	MW-07-GW-08092016	Dissolved	Water	6010C	347256
500-115474-2	MW-07-GW-08092016	Total/NA	Water	6010C	347256
500-115474-9	DUP-2(08092016)	Dissolved	Water	6010C	347256
500-115474-9	DUP-2(08092016)	Dissolved	Water	6010C	347256
500-115474-9	DUP-2(08092016)	Total/NA	Water	6010C	347256

Analysis Batch: 347665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-9	DUP-2(08092016)	Dissolved	Water	6010C	347256
MRL 500-347665/16	Lab Control Sample	Total/NA	Water	6010C	

General Chemistry

Analysis Batch: 347287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	SM 4500 NO2 B	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	SM 4500 NO2 B	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	SM 4500 NO2 B	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	SM 4500 NO2 B	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	SM 4500 NO2 B	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	SM 4500 NO2 B	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	SM 4500 NO2 B	
500-115474-8	DUP-1(08092016)	Total/NA	Water	SM 4500 NO2 B	
500-115474-9	DUP-2(08092016)	Total/NA	Water	SM 4500 NO2 B	
MB 500-347287/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-347287/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 347411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	9034	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	9034	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	9034	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	9034	

General Chemistry (Continued)

Analysis Batch: 347411 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-5	MW-10-GW-08092016	Total/NA	Water	9034	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	9034	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	9034	
500-115474-8	DUP-1(08092016)	Total/NA	Water	9034	
500-115474-9	DUP-2(08092016)	Total/NA	Water	9034	
MB 500-347411/1	Method Blank	Total/NA	Water	9034	
LCS 500-347411/2	Lab Control Sample	Total/NA	Water	9034	
500-115474-1 MS	MW-06-GW-08092016	Total/NA	Water	9034	
500-115474-1 MSD	MW-06-GW-08092016	Total/NA	Water	9034	

Analysis Batch: 347446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	SM 2540D	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	SM 2540D	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	SM 2540D	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	SM 2540D	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	SM 2540D	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	SM 2540D	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	SM 2540D	
500-115474-8	DUP-1(08092016)	Total/NA	Water	SM 2540D	
500-115474-9	DUP-2(08092016)	Total/NA	Water	SM 2540D	
MB 500-347446/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-347446/2	Lab Control Sample	Total/NA	Water	SM 2540D	
500-115474-1 DU	MW-06-GW-08092016	Total/NA	Water	SM 2540D	

Analysis Batch: 347470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-10	Composite Drum Sample	Total/NA	Water	9040C	
500-115474-10 DU	Composite Drum Sample	Total/NA	Water	9040C	

Analysis Batch: 348022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	9060A	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	9060A	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	9060A	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	9060A	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	9060A	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	9060A	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	9060A	
500-115474-8	DUP-1(08092016)	Total/NA	Water	9060A	
500-115474-9	DUP-2(08092016)	Total/NA	Water	9060A	
MB 500-348022/4	Method Blank	Total/NA	Water	9060A	
LCS 500-348022/5	Lab Control Sample	Total/NA	Water	9060A	
500-115474-3 MS	MW-08-GW-08092016	Total/NA	Water	9060A	
500-115474-3 MSD	MW-08-GW-08092016	Total/NA	Water	9060A	

Prep Batch: 348040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	SM 4500 NH3 B	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	SM 4500 NH3 B	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	SM 4500 NH3 B	

General Chemistry (Continued)

Prep Batch: 348040 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-4	MW-09-GW-08092016	Total/NA	Water	SM 4500 NH3 B	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	SM 4500 NH3 B	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	SM 4500 NH3 B	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	SM 4500 NH3 B	
500-115474-8	DUP-1(08092016)	Total/NA	Water	SM 4500 NH3 B	
500-115474-9	DUP-2(08092016)	Total/NA	Water	SM 4500 NH3 B	
MB 500-348040/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-348040/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 348065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	9038	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	9038	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	9038	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	9038	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	9038	
500-115474-8	DUP-1(08092016)	Total/NA	Water	9038	
500-115474-9	DUP-2(08092016)	Total/NA	Water	9038	
MB 500-348065/3	Method Blank	Total/NA	Water	9038	
LCS 500-348065/4	Lab Control Sample	Total/NA	Water	9038	

Analysis Batch: 348230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-6	MW-11-GW-08092016	Total/NA	Water	9038	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	9038	
MB 500-348230/3	Method Blank	Total/NA	Water	9038	
LCS 500-348230/4	Lab Control Sample	Total/NA	Water	9038	
500-115474-6 MS	MW-11-GW-08092016	Total/NA	Water	9038	
500-115474-6 MSD	MW-11-GW-08092016	Total/NA	Water	9038	

Analysis Batch: 348358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	SM 4500 NO3 F	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	SM 4500 NO3 F	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	SM 4500 NO3 F	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	SM 4500 NO3 F	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	SM 4500 NO3 F	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	SM 4500 NO3 F	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	SM 4500 NO3 F	
500-115474-8	DUP-1(08092016)	Total/NA	Water	SM 4500 NO3 F	
500-115474-9	DUP-2(08092016)	Total/NA	Water	SM 4500 NO3 F	
MB 500-348358/12	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-348358/13	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 348425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	SM 4500 NH3 G	348040
500-115474-2	MW-07-GW-08092016	Total/NA	Water	SM 4500 NH3 G	348040
500-115474-3	MW-08-GW-08092016	Total/NA	Water	SM 4500 NH3 G	348040
500-115474-4	MW-09-GW-08092016	Total/NA	Water	SM 4500 NH3 G	348040
500-115474-5	MW-10-GW-08092016	Total/NA	Water	SM 4500 NH3 G	348040

General Chemistry (Continued)

Analysis Batch: 348425 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-6	MW-11-GW-08092016	Total/NA	Water	SM 4500 NH3 G	348040
500-115474-7	MW-13-GW-08092016	Total/NA	Water	SM 4500 NH3 G	348040
500-115474-8	DUP-1(08092016)	Total/NA	Water	SM 4500 NH3 G	348040
500-115474-9	DUP-2(08092016)	Total/NA	Water	SM 4500 NH3 G	348040
MB 500-348040/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	348040
LCS 500-348040/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	348040

Analysis Batch: 348517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-10	Composite Drum Sample	Total/NA	Water	1010A	

Analysis Batch: 348536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-115474-1	MW-06-GW-08092016	Total/NA	Water	Nitrate by calc	
500-115474-2	MW-07-GW-08092016	Total/NA	Water	Nitrate by calc	
500-115474-3	MW-08-GW-08092016	Total/NA	Water	Nitrate by calc	
500-115474-4	MW-09-GW-08092016	Total/NA	Water	Nitrate by calc	
500-115474-5	MW-10-GW-08092016	Total/NA	Water	Nitrate by calc	
500-115474-6	MW-11-GW-08092016	Total/NA	Water	Nitrate by calc	
500-115474-7	MW-13-GW-08092016	Total/NA	Water	Nitrate by calc	
500-115474-8	DUP-1(08092016)	Total/NA	Water	Nitrate by calc	
500-115474-9	DUP-2(08092016)	Total/NA	Water	Nitrate by calc	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-115474-1	MW-06-GW-08092016	101	88	92	103
500-115474-1 - DL	MW-06-GW-08092016	101	89	91	102
500-115474-2	MW-07-GW-08092016	101	89	91	106
500-115474-2 - DL	MW-07-GW-08092016	102	89	91	104
500-115474-3	MW-08-GW-08092016	102	89	91	103
500-115474-3 MS	MW-08-GW-08092016	102	91	91	104
500-115474-3 MSD	MW-08-GW-08092016	103	92	90	103
500-115474-4	MW-09-GW-08092016	104	89	92	106
500-115474-5	MW-10-GW-08092016	103	89	92	103
500-115474-6	MW-11-GW-08092016	102	89	90	103
500-115474-7	MW-13-GW-08092016	102	91	93	104
500-115474-7 - DL	MW-13-GW-08092016	102	90	91	103
500-115474-8	DUP-1(08092016)	100	89	91	104
500-115474-8 - DL	DUP-1(08092016)	104	88	92	104
500-115474-9	DUP-2(08092016)	106	90	91	105
500-115474-9 - DL	DUP-2(08092016)	102	90	91	103
500-115474-10	Composite Drum Sample	101	90	93	105
500-115474-10 - DL	Composite Drum Sample	103	89	91	105
LCS 500-347454/4	Lab Control Sample	103	96	100	101
LCS 500-347516/5	Lab Control Sample	101	88	86	106
MB 500-347454/5	Method Blank	103	93	98	102
MB 500-347516/7	Method Blank	101	88	87	105

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-115474-1	MW-06-GW-08092016	68	72	68	71	154 X	75
500-115474-1 - RA	MW-06-GW-08092016	72	70	64	68	160 X	78
500-115474-2	MW-07-GW-08092016	98	104	105	105 X	154 X	102
500-115474-3	MW-08-GW-08092016	67	58	62	45	88	79
500-115474-4	MW-09-GW-08092016	56	43	47	39	92	77
500-115474-5	MW-10-GW-08092016	71	63	68	50	94	82
500-115474-6	MW-11-GW-08092016	48	42	46	39	79	64
500-115474-7	MW-13-GW-08092016	59	59	69	47	106	85
500-115474-8	DUP-1(08092016)	58	60	72	48	102	90
500-115474-9	DUP-2(08092016)	72	67	72	62	151 X	76
500-115474-9 - RA	DUP-2(08092016)	79	67	64	60	168 X	81
LCS 500-347328/2-A	Lab Control Sample	76	77	84	68	106	98
LCS 500-348028/2-A	Lab Control Sample	76	70	84	52	112	82
LCSD 500-347328/3-A	Lab Control Sample Dup	79	79	92	72	107	103

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
LCSD 500-348028/3-A	Lab Control Sample Dup	74	73	85	54	111	83
MB 500-347328/1-A	Method Blank	75	76	87	67	104	83
MB 500-348028/1-A	Method Blank	63	69	80	48	115	70

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-115474-1	MW-06-GW-08092016	24 X	81
500-115474-2	MW-07-GW-08092016	3 X	116
500-115474-3	MW-08-GW-08092016	89	58
500-115474-4	MW-09-GW-08092016	64	61
500-115474-5	MW-10-GW-08092016	64	56
500-115474-6	MW-11-GW-08092016	45	76
500-115474-7	MW-13-GW-08092016	59	468 X
500-115474-8	DUP-1(08092016)	34	475 X
500-115474-9	DUP-2(08092016)	2 X	90
LCS 500-347272/2-A	Lab Control Sample	85	74
LCSD 500-347272/3-A	Lab Control Sample Dup	96	66
MB 500-347272/1-A	Method Blank	104	68

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-115474-1	MW-06-GW-08092016	39	43	25 X	28 X
500-115474-2	MW-07-GW-08092016	23 X	20 X	8 X	7 X
500-115474-2 - RE	MW-07-GW-08092016	18 X	32	7 X	10 X
500-115474-3	MW-08-GW-08092016		85		140
500-115474-4	MW-09-GW-08092016		65		80
500-115474-5	MW-10-GW-08092016		66		78
500-115474-6	MW-11-GW-08092016		84		77
500-115474-7	MW-13-GW-08092016		89		84
500-115474-8	DUP-1(08092016)		62		45

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	**Client Sample ID**	(30-127)	(30-127)	(30-150)	(30-150)
500-115474-9	DUP-2(08092016)	39	47	17 X	19 X
LCS 500-347272/4-A	Lab Control Sample	68	66	118	115
LCS 500-347771/4-A	Lab Control Sample		74		115
LCS 500-348910/4-A	Lab Control Sample	72	69	92	88
LCSD 500-347272/5-A	Lab Control Sample Dup	65	64	110	116
LCSD 500-347771/5-A	Lab Control Sample Dup		75		107
LCSD 500-348910/5-A	Lab Control Sample Dup	66	64	59	56
MB 500-347272/1-A	Method Blank	77	73	120	124
MB 500-347771/1-A	Method Blank		73		101
MB 500-348910/1-A	Method Blank	71	68	81	81

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-347454/5
Matrix: Water
Analysis Batch: 347454

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 21:04	1
Acetone	<5.0		5.0	1.7	ug/L			08/11/16 21:04	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/11/16 21:04	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/11/16 21:04	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 21:04	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/11/16 21:04	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 21:04	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/11/16 21:04	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 21:04	1
Benzene	<0.50		0.50	0.15	ug/L			08/11/16 21:04	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 21:04	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/11/16 21:04	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/11/16 21:04	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 21:04	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 21:04	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/11/16 21:04	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 21:04	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 21:04	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/11/16 21:04	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 21:04	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 21:04	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 21:04	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 21:04	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 21:04	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/11/16 21:04	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/11/16 21:04	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 21:04	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/11/16 21:04	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 21:04	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 21:04	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 21:04	1
Toluene	<0.50		0.50	0.15	ug/L			08/11/16 21:04	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/11/16 21:04	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 21:04	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 21:04	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/11/16 21:04	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 21:04	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/11/16 21:04	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 21:04	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/11/16 21:04	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 21:04	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 21:04	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 21:04	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/11/16 21:04	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 21:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 21:04	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/11/16 21:04	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/11/16 21:04	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		71 - 127		08/11/16 21:04	1
Toluene-d8 (Surr)	102		75 - 120		08/11/16 21:04	1
4-Bromofluorobenzene (Surr)	103		71 - 120		08/11/16 21:04	1
Dibromofluoromethane	93		70 - 120		08/11/16 21:04	1

Lab Sample ID: LCS 500-347454/4
Matrix: Water
Analysis Batch: 347454

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromomethane	50.0	35.2		ug/L		70	40 - 150
Acetone	50.0	54.1		ug/L		108	37 - 141
Carbon disulfide	50.0	46.8		ug/L		94	68 - 125
Chloroethane	50.0	45.3		ug/L		91	60 - 139
Chloromethane	50.0	55.7		ug/L		111	60 - 140
cis-1,2-Dichloroethene	50.0	50.9		ug/L		102	70 - 125
Chloroform	50.0	50.0		ug/L		100	70 - 125
Cyclohexane	50.0	55.0		ug/L		110	56 - 149
Carbon tetrachloride	50.0	44.0		ug/L		88	70 - 125
Benzene	50.0	49.5		ug/L		99	70 - 125
Dichlorodifluoromethane	50.0	51.7		ug/L		103	51 - 140
1,1-Dichloroethane	50.0	51.4		ug/L		103	70 - 125
1,2-Dichloroethane	50.0	50.7		ug/L		101	70 - 125
1,1-Dichloroethene	50.0	48.4		ug/L		97	70 - 125
Bromodichloromethane	50.0	48.2		ug/L		96	70 - 125
1,2-Dichloropropane	50.0	55.1		ug/L		110	70 - 125
cis-1,3-Dichloropropene	50.0	50.9		ug/L		102	70 - 125
Methyl acetate	250	347		ug/L		139	60 - 148
Methylcyclohexane	50.0	49.6		ug/L		99	70 - 127
2-Hexanone	50.0	61.4		ug/L		123	49 - 139
Methylene Chloride	50.0	52.3		ug/L		105	68 - 125
Dibromochloromethane	50.0	48.2		ug/L		96	66 - 125
Methyl Ethyl Ketone	50.0	59.8		ug/L		120	52 - 142
1,2-Dibromoethane	50.0	54.2		ug/L		108	70 - 125
methyl isobutyl ketone	50.0	63.6		ug/L		127	47 - 140
Chlorobenzene	50.0	48.9		ug/L		98	70 - 125
Methyl tert-butyl ether	50.0	53.6		ug/L		107	67 - 125
Ethylbenzene	50.0	48.4		ug/L		97	70 - 125
Styrene	50.0	47.9		ug/L		96	70 - 125
Tetrachloroethene	50.0	49.4		ug/L		99	70 - 125
Bromoform	50.0	51.2		ug/L		102	54 - 128
Toluene	50.0	48.4		ug/L		97	70 - 125
Isopropylbenzene	50.0	46.2		ug/L		92	70 - 125
1,1,2,2-Tetrachloroethane	50.0	54.2		ug/L		108	68 - 125
trans-1,2-Dichloroethene	50.0	48.8		ug/L		98	70 - 125
1,3-Dichlorobenzene	50.0	49.8		ug/L		100	70 - 125
trans-1,3-Dichloropropene	50.0	50.5		ug/L		101	70 - 125
1,4-Dichlorobenzene	50.0	49.0		ug/L		98	70 - 125
1,1,1-Trichloroethane	50.0	46.3		ug/L		93	70 - 125
1,2-Dichlorobenzene	50.0	51.1		ug/L		102	70 - 125
1,1,2-Trichloroethane	50.0	56.4		ug/L		113	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	48.3		ug/L		97	51 - 125
1,2,4-Trichlorobenzene	50.0	51.1		ug/L		102	64 - 126
Trichloroethene	50.0	50.7		ug/L		101	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347454/4
Matrix: Water
Analysis Batch: 347454

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	38.7		ug/L		77	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	46.7		ug/L		93	57 - 141
Vinyl chloride	50.0	46.7		ug/L		93	70 - 126
Xylenes, Total	100	93.4		ug/L		93	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*
Toluene-d8 (Surr)	*101*		*75 - 120*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*

Lab Sample ID: 500-115474-3 MS
Matrix: Water
Analysis Batch: 347454

Client Sample ID: MW-08-GW-08092016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromomethane	<2.0		50.0	33.4		ug/L		67	40 - 150
Acetone	<5.0		50.0	47.1		ug/L		94	37 - 141
Carbon disulfide	<2.0		50.0	45.3		ug/L		91	68 - 125
Chloroethane	<1.0		50.0	37.5		ug/L		75	60 - 139
Chloromethane	<1.0		50.0	45.5		ug/L		91	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	47.3		ug/L		95	70 - 125
Chloroform	<1.0		50.0	45.9		ug/L		92	70 - 125
Cyclohexane	<1.0		50.0	54.9		ug/L		110	56 - 149
Carbon tetrachloride	<1.0		50.0	42.9		ug/L		86	70 - 125
Benzene	<0.50		50.0	46.2		ug/L		92	70 - 125
Dichlorodifluoromethane	<2.0		50.0	51.7		ug/L		103	51 - 140
1,1-Dichloroethane	<1.0		50.0	47.8		ug/L		96	70 - 125
1,2-Dichloroethane	<1.0		50.0	44.2		ug/L		88	70 - 125
1,1-Dichloroethene	<1.0		50.0	48.5		ug/L		97	70 - 125
Bromodichloromethane	<1.0		50.0	42.3		ug/L		85	70 - 125
1,2-Dichloropropane	<1.0		50.0	49.3		ug/L		99	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	46.2		ug/L		92	70 - 125
Methyl acetate	<5.0		250	281		ug/L		112	60 - 148
Methylcyclohexane	<1.0		50.0	49.5		ug/L		99	70 - 127
2-Hexanone	<5.0		50.0	47.4		ug/L		95	49 - 139
Methylene Chloride	<5.0		50.0	47.5		ug/L		95	68 - 125
Dibromochloromethane	<1.0		50.0	43.3		ug/L		87	66 - 125
Methyl Ethyl Ketone	<5.0		50.0	43.0		ug/L		86	52 - 142
1,2-Dibromoethane	<1.0		50.0	48.6		ug/L		97	70 - 125
methyl isobutyl ketone	<5.0		50.0	47.8		ug/L		96	47 - 140
Chlorobenzene	<1.0		50.0	46.6		ug/L		93	70 - 125
Methyl tert-butyl ether	<1.0		50.0	45.2		ug/L		90	67 - 125
Ethylbenzene	<0.50		50.0	47.7		ug/L		95	70 - 125
Styrene	<1.0		50.0	40.9		ug/L		82	70 - 125
Tetrachloroethene	<1.0		50.0	49.4		ug/L		99	70 - 125
Bromoform	<1.0		50.0	45.2		ug/L		90	54 - 128

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-115474-3 MS
Matrix: Water
Analysis Batch: 347454

Client Sample ID: MW-08-GW-08092016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	<0.50		50.0	46.6		ug/L		93	70 - 125
Isopropylbenzene	<1.0		50.0	46.5		ug/L		93	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	48.0		ug/L		96	68 - 125
trans-1,2-Dichloroethene	<1.0		50.0	47.5		ug/L		95	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	46.9		ug/L		94	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	43.6		ug/L		87	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	46.5		ug/L		93	70 - 125
1,1,1-Trichloroethane	<1.0		50.0	45.5		ug/L		91	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	46.9		ug/L		94	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	47.8		ug/L		96	70 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	43.1		ug/L		86	51 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	47.0		ug/L		94	64 - 126
Trichloroethene	<0.50		50.0	47.8		ug/L		96	70 - 125
Trichlorofluoromethane	<1.0		50.0	40.4		ug/L		81	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	47.4		ug/L		95	57 - 141
Vinyl chloride	<0.50		50.0	46.1		ug/L		92	70 - 126
Xylenes, Total	<1.0		100	91.4		ug/L		91	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*
Toluene-d8 (Surr)	*104*		*75 - 120*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*
Dibromofluoromethane	*91*		*70 - 120*

Lab Sample ID: 500-115474-3 MSD
Matrix: Water
Analysis Batch: 347454

Client Sample ID: MW-08-GW-08092016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromomethane	<2.0		50.0	33.4		ug/L		67	40 - 150	0	20
Acetone	<5.0		50.0	51.7		ug/L		103	37 - 141	9	20
Carbon disulfide	<2.0		50.0	41.1		ug/L		82	68 - 125	10	20
Chloroethane	<1.0		50.0	43.4		ug/L		87	60 - 139	15	20
Chloromethane	<1.0		50.0	44.1		ug/L		88	60 - 140	3	20
cis-1,2-Dichloroethene	<1.0		50.0	43.0		ug/L		86	70 - 125	10	20
Chloroform	<1.0		50.0	41.7		ug/L		83	70 - 125	10	20
Cyclohexane	<1.0		50.0	49.8		ug/L		100	56 - 149	10	20
Carbon tetrachloride	<1.0		50.0	39.2		ug/L		78	70 - 125	9	20
Benzene	<0.50		50.0	41.7		ug/L		83	70 - 125	10	20
Dichlorodifluoromethane	<2.0		50.0	50.1		ug/L		100	51 - 140	3	20
1,1-Dichloroethane	<1.0		50.0	43.9		ug/L		88	70 - 125	8	20
1,2-Dichloroethane	<1.0		50.0	40.7		ug/L		81	70 - 125	8	20
1,1-Dichloroethene	<1.0		50.0	43.7		ug/L		87	70 - 125	10	20
Bromodichloromethane	<1.0		50.0	38.5		ug/L		77	70 - 125	9	20
1,2-Dichloropropane	<1.0		50.0	44.9		ug/L		90	70 - 125	9	20
cis-1,3-Dichloropropene	<1.0		50.0	41.4		ug/L		83	70 - 125	11	20
Methyl acetate	<5.0		250	257		ug/L		103	60 - 148	9	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-115474-3 MSD
Matrix: Water
Analysis Batch: 347454

Client Sample ID: MW-08-GW-08092016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylcyclohexane	<1.0		50.0	45.3		ug/L		91	70 - 127	9	20
2-Hexanone	<5.0		50.0	52.6		ug/L		105	49 - 139	10	20
Methylene Chloride	<5.0		50.0	43.8		ug/L		88	68 - 125	8	20
Dibromochloromethane	<1.0		50.0	38.9		ug/L		78	66 - 125	11	20
Methyl Ethyl Ketone	<5.0		50.0	48.8		ug/L		98	52 - 142	13	20
1,2-Dibromoethane	<1.0		50.0	44.5		ug/L		89	70 - 125	9	20
methyl isobutyl ketone	<5.0		50.0	52.8		ug/L		106	47 - 140	10	20
Chlorobenzene	<1.0		50.0	42.8		ug/L		86	70 - 125	9	20
Methyl tert-butyl ether	<1.0		50.0	41.6		ug/L		83	67 - 125	8	20
Ethylbenzene	<0.50		50.0	43.2		ug/L		86	70 - 125	10	20
Styrene	<1.0		50.0	37.1		ug/L		74	70 - 125	10	20
Tetrachloroethene	<1.0		50.0	45.3		ug/L		91	70 - 125	9	20
Bromoform	<1.0		50.0	41.3		ug/L		83	54 - 128	9	20
Toluene	<0.50		50.0	42.0		ug/L		84	70 - 125	10	20
Isopropylbenzene	<1.0		50.0	42.5		ug/L		85	70 - 125	9	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	42.9		ug/L		86	68 - 125	11	20
trans-1,2-Dichloroethene	<1.0		50.0	42.9		ug/L		86	70 - 125	10	20
1,3-Dichlorobenzene	<1.0		50.0	43.0		ug/L		86	70 - 125	9	20
trans-1,3-Dichloropropene	<1.0		50.0	40.2		ug/L		80	70 - 125	8	20
1,4-Dichlorobenzene	<1.0		50.0	41.4		ug/L		83	70 - 125	12	20
1,1,1-Trichloroethane	<1.0		50.0	41.8		ug/L		84	70 - 125	8	20
1,2-Dichlorobenzene	<1.0		50.0	42.4		ug/L		85	70 - 125	10	20
1,1,2-Trichloroethane	<1.0		50.0	43.9		ug/L		88	70 - 125	9	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	39.5		ug/L		79	51 - 125	9	20
1,2,4-Trichlorobenzene	<1.0		50.0	40.3		ug/L		81	64 - 126	15	20
Trichloroethene	<0.50		50.0	43.1		ug/L		86	70 - 125	10	20
Trichlorofluoromethane	<1.0		50.0	40.5		ug/L		81	60 - 126	0	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	42.7		ug/L		85	57 - 141	10	20
Vinyl chloride	<0.50		50.0	45.0		ug/L		90	70 - 126	3	20
Xylenes, Total	<1.0		100	82.6		ug/L		83	70 - 125	10	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*
Toluene-d8 (Surr)	*103*		*75 - 120*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*
Dibromofluoromethane	*92*		*70 - 120*

Lab Sample ID: MB 500-347516/7
Matrix: Water
Analysis Batch: 347516

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 09:44	1
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 09:44	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 09:44	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 09:44	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 09:44	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-347516/7
Matrix: Water
Analysis Batch: 347516

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 09:44	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 09:44	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 09:44	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 09:44	1
Benzene	<0.50		0.50	0.15	ug/L			08/12/16 09:44	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 09:44	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 09:44	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 09:44	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 09:44	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 09:44	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 09:44	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 09:44	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 09:44	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 09:44	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 09:44	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 09:44	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 09:44	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 09:44	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 09:44	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 09:44	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 09:44	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 09:44	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 09:44	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 09:44	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 09:44	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 09:44	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 09:44	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/12/16 09:44	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 09:44	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 09:44	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 09:44	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 09:44	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/12/16 09:44	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 09:44	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 09:44	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 09:44	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 09:44	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 09:44	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 09:44	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 09:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 09:44	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 09:44	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 09:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*71 - 127*		*08/12/16 09:44*	*1*
Toluene-d8 (Surr)	*105*		*75 - 120*		*08/12/16 09:44*	*1*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 09:44*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-347516/7
Matrix: Water
Analysis Batch: 347516

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*88*		*70 - 120*		*08/12/16 09:44*	*1*

Lab Sample ID: LCS 500-347516/5
Matrix: Water
Analysis Batch: 347516

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromomethane	50.0	39.4		ug/L		79	40 - 150
Acetone	50.0	42.2		ug/L		84	37 - 141
Carbon disulfide	50.0	53.9		ug/L		108	68 - 125
Chloroethane	50.0	48.0		ug/L		96	60 - 139
Chloromethane	50.0	56.3		ug/L		113	60 - 140
cis-1,2-Dichloroethene	50.0	51.9		ug/L		104	70 - 125
Chloroform	50.0	50.0		ug/L		100	70 - 125
Cyclohexane	50.0	63.4		ug/L		127	56 - 149
Carbon tetrachloride	50.0	50.6		ug/L		101	70 - 125
Benzene	50.0	51.5		ug/L		103	70 - 125
Dichlorodifluoromethane	50.0	56.5		ug/L		113	51 - 140
1,1-Dichloroethane	50.0	53.9		ug/L		108	70 - 125
1,2-Dichloroethane	50.0	47.6		ug/L		95	70 - 125
1,1-Dichloroethene	50.0	56.5		ug/L		113	70 - 125
Bromodichloromethane	50.0	46.9		ug/L		94	70 - 125
1,2-Dichloropropane	50.0	54.4		ug/L		109	70 - 125
cis-1,3-Dichloropropene	50.0	52.8		ug/L		106	70 - 125
Methyl acetate	250	310		ug/L		124	60 - 148
Methylcyclohexane	50.0	57.5		ug/L		115	70 - 127
2-Hexanone	50.0	51.7		ug/L		103	49 - 139
Methylene Chloride	50.0	51.9		ug/L		104	68 - 125
Dibromochloromethane	50.0	49.5		ug/L		99	66 - 125
Methyl Ethyl Ketone	50.0	45.2		ug/L		90	52 - 142
1,2-Dibromoethane	50.0	56.8		ug/L		114	70 - 125
methyl isobutyl ketone	50.0	53.5		ug/L		107	47 - 140
Chlorobenzene	50.0	54.3		ug/L		109	70 - 125
Methyl tert-butyl ether	50.0	48.9		ug/L		98	67 - 125
Ethylbenzene	50.0	56.1		ug/L		112	70 - 125
Styrene	50.0	51.9		ug/L		104	70 - 125
Tetrachloroethene	50.0	61.4		ug/L		123	70 - 125
Bromoform	50.0	53.4		ug/L		107	54 - 128
Toluene	50.0	54.4		ug/L		109	70 - 125
Isopropylbenzene	50.0	54.8		ug/L		110	70 - 125
1,1,2,2-Tetrachloroethane	50.0	54.7		ug/L		109	68 - 125
trans-1,2-Dichloroethene	50.0	53.9		ug/L		108	70 - 125
1,3-Dichlorobenzene	50.0	54.8		ug/L		110	70 - 125
trans-1,3-Dichloropropene	50.0	51.2		ug/L		102	70 - 125
1,4-Dichlorobenzene	50.0	53.5		ug/L		107	70 - 125
1,1,1-Trichloroethane	50.0	52.6		ug/L		105	70 - 125
1,2-Dichlorobenzene	50.0	53.8		ug/L		108	70 - 125
1,1,2-Trichloroethane	50.0	55.3		ug/L		111	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347516/5
Matrix: Water
Analysis Batch: 347516

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	50.0	47.6		ug/L		95	51 - 125
1,2,4-Trichlorobenzene	50.0	55.3		ug/L		111	64 - 126
Trichloroethene	50.0	54.1		ug/L		108	70 - 125
Trichlorofluoromethane	50.0	47.9		ug/L		96	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	54.7		ug/L		109	57 - 141
Vinyl chloride	50.0	51.1		ug/L		102	70 - 126
Xylenes, Total	100	106		ug/L		106	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*
Toluene-d8 (Surr)	*106*		*75 - 120*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*
Dibromofluoromethane	*88*		*70 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-347328/1-A
Matrix: Water
Analysis Batch: 347422

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347328

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		08/10/16 16:28	08/11/16 17:03	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		08/10/16 16:28	08/11/16 17:03	1
Acetophenone	<4.0		4.0	0.53	ug/L		08/10/16 16:28	08/11/16 17:03	1
Anthracene	<0.80		0.80	0.27	ug/L		08/10/16 16:28	08/11/16 17:03	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		08/10/16 16:28	08/11/16 17:03	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		08/10/16 16:28	08/11/16 17:03	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		08/10/16 16:28	08/11/16 17:03	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		08/10/16 16:28	08/11/16 17:03	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		08/10/16 16:28	08/11/16 17:03	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		08/10/16 16:28	08/11/16 17:03	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		08/10/16 16:28	08/11/16 17:03	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		08/10/16 16:28	08/11/16 17:03	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		08/10/16 16:28	08/11/16 17:03	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		08/10/16 16:28	08/11/16 17:03	1
Carbazole	<4.0		4.0	0.28	ug/L		08/10/16 16:28	08/11/16 17:03	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		08/10/16 16:28	08/11/16 17:03	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		08/10/16 16:28	08/11/16 17:03	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		08/10/16 16:28	08/11/16 17:03	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		08/10/16 16:28	08/11/16 17:03	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		08/10/16 16:28	08/11/16 17:03	1
Chrysene	<0.40		0.40	0.055	ug/L		08/10/16 16:28	08/11/16 17:03	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		08/10/16 16:28	08/11/16 17:03	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		08/10/16 16:28	08/11/16 17:03	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		08/10/16 16:28	08/11/16 17:03	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		08/10/16 16:28	08/11/16 17:03	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		08/10/16 16:28	08/11/16 17:03	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-347328/1-A
Matrix: Water
Analysis Batch: 347422

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347328

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		08/10/16 16:28	08/11/16 17:03	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		08/10/16 16:28	08/11/16 17:03	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		08/10/16 16:28	08/11/16 17:03	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		08/10/16 16:28	08/11/16 17:03	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		08/10/16 16:28	08/11/16 17:03	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		08/10/16 16:28	08/11/16 17:03	1
2,6-Dinitrotoluene	<0.40		0.40	0.059	ug/L		08/10/16 16:28	08/11/16 17:03	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		08/10/16 16:28	08/11/16 17:03	1
Fluoranthene	<0.80		0.80	0.36	ug/L		08/10/16 16:28	08/11/16 17:03	1
Fluorene	<0.80		0.80	0.20	ug/L		08/10/16 16:28	08/11/16 17:03	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		08/10/16 16:28	08/11/16 17:03	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		08/10/16 16:28	08/11/16 17:03	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		08/10/16 16:28	08/11/16 17:03	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		08/10/16 16:28	08/11/16 17:03	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		08/10/16 16:28	08/11/16 17:03	1
Isophorone	<1.6		1.6	0.30	ug/L		08/10/16 16:28	08/11/16 17:03	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		08/10/16 16:28	08/11/16 17:03	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		08/10/16 16:28	08/11/16 17:03	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		08/10/16 16:28	08/11/16 17:03	1
Naphthalene	<0.80		0.80	0.25	ug/L		08/10/16 16:28	08/11/16 17:03	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		08/10/16 16:28	08/11/16 17:03	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		08/10/16 16:28	08/11/16 17:03	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		08/10/16 16:28	08/11/16 17:03	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		08/10/16 16:28	08/11/16 17:03	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		08/10/16 16:28	08/11/16 17:03	1
4-Nitrophenol	<16		16	5.9	ug/L		08/10/16 16:28	08/11/16 17:03	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		08/10/16 16:28	08/11/16 17:03	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		08/10/16 16:28	08/11/16 17:03	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		08/10/16 16:28	08/11/16 17:03	1
Pentachlorophenol	<16		16	3.2	ug/L		08/10/16 16:28	08/11/16 17:03	1
Phenanthrene	<0.80		0.80	0.24	ug/L		08/10/16 16:28	08/11/16 17:03	1
Phenol	<4.0		4.0	0.54	ug/L		08/10/16 16:28	08/11/16 17:03	1
Pyrene	<0.80		0.80	0.34	ug/L		08/10/16 16:28	08/11/16 17:03	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		08/10/16 16:28	08/11/16 17:03	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		08/10/16 16:28	08/11/16 17:03	1
Benzaldehyde	<32	^	32	12	ug/L		08/10/16 16:28	08/11/16 17:03	1
Caprolactam	<8.0		8.0	1.2	ug/L		08/10/16 16:28	08/11/16 17:03	1
Atrazine	<4.0		4.0	0.50	ug/L		08/10/16 16:28	08/11/16 17:03	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		08/10/16 16:28	08/11/16 17:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*75*		*30 - 123*	*08/10/16 16:28*	*08/11/16 17:03*	*1*
2-Fluorophenol (Surr)	*76*		*30 - 110*	*08/10/16 16:28*	*08/11/16 17:03*	*1*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*08/10/16 16:28*	*08/11/16 17:03*	*1*
Phenol-d5 (Surr)	*67*		*20 - 100*	*08/10/16 16:28*	*08/11/16 17:03*	*1*
Terphenyl-d14 (Surr)	*104*		*42 - 150*	*08/10/16 16:28*	*08/11/16 17:03*	*1*
2,4,6-Tribromophenol (Surr)	*83*		*30 - 150*	*08/10/16 16:28*	*08/11/16 17:03*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347328/2-A
Matrix: Water
Analysis Batch: 347422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	22.4		ug/L		70	41 - 112
Acenaphthylene	32.0	22.1		ug/L		69	48 - 110
Acetophenone	32.0	26.1		ug/L		81	54 - 116
Anthracene	32.0	30.3		ug/L		95	65 - 118
Benzo[a]anthracene	32.0	31.1		ug/L		97	69 - 121
Benzo[a]pyrene	32.0	33.4		ug/L		104	69 - 130
Benzo[b]fluoranthene	32.0	33.2		ug/L		104	66 - 133
Benzo[g,h,i]perylene	32.0	34.7		ug/L		109	47 - 145
Benzo[k]fluoranthene	32.0	32.7		ug/L		102	64 - 134
Bis(2-chloroethoxy)methane	32.0	27.5		ug/L		86	55 - 115
Bis(2-chloroethyl)ether	32.0	21.9		ug/L		68	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	32.2		ug/L		101	60 - 132
4-Bromophenyl phenyl ether	32.0	28.9		ug/L		90	60 - 124
Butyl benzyl phthalate	32.0	31.6		ug/L		99	63 - 127
Carbazole	32.0	37.0		ug/L		115	71 - 132
4-Chloroaniline	32.0	27.5		ug/L		86	15 - 125
4-Chloro-3-methylphenol	32.0	29.9		ug/L		93	63 - 120
2-Chloronaphthalene	32.0	20.0		ug/L		62	38 - 110
2-Chlorophenol	32.0	24.9		ug/L		78	49 - 110
4-Chlorophenyl phenyl ether	32.0	23.8		ug/L		74	55 - 115
Chrysene	32.0	30.8		ug/L		96	70 - 126
Dibenz(a,h)anthracene	32.0	36.1		ug/L		113	59 - 145
Dibenzofuran	32.0	24.3		ug/L		76	54 - 111
3,3'-Dichlorobenzidine	32.0	33.2		ug/L		104	57 - 145
2,4-Dichlorophenol	32.0	26.0		ug/L		81	53 - 123
Diethyl phthalate	32.0	27.8		ug/L		87	64 - 126
2,4-Dimethylphenol	32.0	24.5		ug/L		76	42 - 115
Dimethyl phthalate	32.0	27.6		ug/L		86	66 - 120
Di-n-butyl phthalate	32.0	31.4		ug/L		98	67 - 125
4,6-Dinitro-2-methylphenol	64.0	58.9		ug/L		92	34 - 152
2,4-Dinitrophenol	64.0	49.3		ug/L		77	20 - 140
2,4-Dinitrotoluene	32.0	29.0		ug/L		91	67 - 131
2,6-Dinitrotoluene	32.0	27.9		ug/L		87	66 - 125
Di-n-octyl phthalate	32.0	33.1		ug/L		103	63 - 133
Fluoranthene	32.0	31.4		ug/L		98	68 - 127
Fluorene	32.0	24.5		ug/L		77	54 - 113
Hexachlorobenzene	32.0	30.6		ug/L		96	63 - 127
Hexachlorobutadiene	32.0	16.3		ug/L		51	20 - 110
Hexachlorocyclopentadiene	32.0	10.4	J	ug/L		33	10 - 110
Hexachloroethane	32.0	16.3		ug/L		51	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	35.1		ug/L		110	52 - 150
Isophorone	32.0	25.8		ug/L		81	55 - 120
2-Methylnaphthalene	32.0	21.5		ug/L		67	32 - 110
2-Methylphenol	32.0	25.1		ug/L		78	49 - 113
3 & 4 Methylphenol	32.0	26.1		ug/L		82	49 - 114
Naphthalene	32.0	20.4		ug/L		64	32 - 110
2-Nitroaniline	32.0	28.1		ug/L		88	61 - 126
3-Nitroaniline	32.0	25.4		ug/L		79	42 - 134

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-347328/2-A
Matrix: Water
Analysis Batch: 347422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitroaniline	32.0	36.5		ug/L		114	40 - 142
Nitrobenzene	32.0	23.7		ug/L		74	49 - 116
2-Nitrophenol	32.0	26.1		ug/L		82	51 - 120
4-Nitrophenol	64.0	37.8		ug/L		59	21 - 110
N-Nitrosodi-n-propylamine	32.0	27.8		ug/L		87	52 - 122
N-Nitrosodiphenylamine	32.0	30.6		ug/L		96	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	21.0		ug/L		66	34 - 110
Pentachlorophenol	64.0	52.2		ug/L		81	29 - 138
Phenanthrene	32.0	30.1		ug/L		94	63 - 121
Phenol	32.0	19.0		ug/L		59	33 - 100
Pyrene	32.0	30.7		ug/L		96	65 - 122
2,4,5-Trichlorophenol	32.0	27.1		ug/L		85	63 - 121
2,4,6-Trichlorophenol	32.0	24.3		ug/L		76	61 - 120
Caprolactam	32.0	17.5		ug/L		55	25 - 100
Atrazine	32.0	27.4		ug/L		86	57 - 128
1,1'-Biphenyl	32.0	20.9		ug/L		65	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*76*		*30 - 123*
2-Fluorophenol (Surr)	*77*		*30 - 110*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*
Phenol-d5 (Surr)	*68*		*20 - 100*
Terphenyl-d14 (Surr)	*106*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*98*		*30 - 150*

Lab Sample ID: LCSD 500-347328/3-A
Matrix: Water
Analysis Batch: 347422

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347328

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	22.6		ug/L		71	41 - 112	1	20
Acenaphthylene	32.0	22.8		ug/L		71	48 - 110	3	20
Acetophenone	32.0	27.4		ug/L		86	54 - 116	5	20
Anthracene	32.0	30.5		ug/L		95	65 - 118	1	20
Benzo[a]anthracene	32.0	31.3		ug/L		98	69 - 121	1	20
Benzo[a]pyrene	32.0	33.8		ug/L		106	69 - 130	1	20
Benzo[b]fluoranthene	32.0	33.1		ug/L		103	66 - 133	0	20
Benzo[g,h,i]perylene	32.0	35.0		ug/L		109	47 - 145	1	20
Benzo[k]fluoranthene	32.0	32.8		ug/L		102	64 - 134	0	20
Bis(2-chloroethoxy)methane	32.0	29.1		ug/L		91	55 - 115	6	20
Bis(2-chloroethyl)ether	32.0	23.8		ug/L		74	46 - 110	8	20
Bis(2-ethylhexyl) phthalate	32.0	32.4		ug/L		101	60 - 132	0	20
4-Bromophenyl phenyl ether	32.0	28.8		ug/L		90	60 - 124	0	20
Butyl benzyl phthalate	32.0	31.9		ug/L		100	63 - 127	1	20
Carbazole	32.0	37.2		ug/L		116	71 - 132	1	20
4-Chloroaniline	32.0	29.4		ug/L		92	15 - 125	6	20
4-Chloro-3-methylphenol	32.0	30.1		ug/L		94	63 - 120	1	20
2-Chloronaphthalene	32.0	20.9		ug/L		65	38 - 110	4	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-347328/3-A
Matrix: Water
Analysis Batch: 347422

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347328

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chlorophenol	32.0	27.4		ug/L		85	49 - 110	9	20
4-Chlorophenyl phenyl ether	32.0	23.7		ug/L		74	55 - 115	1	20
Chrysene	32.0	30.8		ug/L		96	70 - 126	0	20
Dibenz(a,h)anthracene	32.0	35.2		ug/L		110	59 - 145	2	20
Dibenzofuran	32.0	23.9		ug/L		75	54 - 111	1	20
3,3'-Dichlorobenzidine	32.0	33.8		ug/L		106	57 - 145	2	20
2,4-Dichlorophenol	32.0	28.7		ug/L		90	53 - 123	10	20
Diethyl phthalate	32.0	28.0		ug/L		88	64 - 126	1	20
2,4-Dimethylphenol	32.0	27.2		ug/L		85	42 - 115	10	20
Dimethyl phthalate	32.0	28.1		ug/L		88	66 - 120	2	20
Di-n-butyl phthalate	32.0	32.1		ug/L		100	67 - 125	2	20
4,6-Dinitro-2-methylphenol	64.0	60.4		ug/L		94	34 - 152	2	20
2,4-Dinitrophenol	64.0	52.8		ug/L		82	20 - 140	7	20
2,4-Dinitrotoluene	32.0	29.6		ug/L		92	67 - 131	2	20
2,6-Dinitrotoluene	32.0	27.4		ug/L		86	66 - 125	2	20
Di-n-octyl phthalate	32.0	33.1		ug/L		103	63 - 133	0	20
Fluoranthene	32.0	31.4		ug/L		98	68 - 127	0	20
Fluorene	32.0	24.4		ug/L		76	54 - 113	0	20
Hexachlorobenzene	32.0	30.4		ug/L		95	63 - 127	1	20
Hexachlorobutadiene	32.0	19.0		ug/L		59	20 - 110	15	20
Hexachlorocyclopentadiene	32.0	12.2	J	ug/L		38	10 - 110	16	20
Hexachloroethane	32.0	18.8		ug/L		59	20 - 110	14	20
Indeno[1,2,3-cd]pyrene	32.0	35.6		ug/L		111	52 - 150	1	20
Isophorone	32.0	26.8		ug/L		84	55 - 120	4	20
2-Methylnaphthalene	32.0	22.9		ug/L		72	32 - 110	6	20
2-Methylphenol	32.0	26.0		ug/L		81	49 - 113	4	20
3 & 4 Methylphenol	32.0	26.9		ug/L		84	49 - 114	3	20
Naphthalene	32.0	22.8		ug/L		71	32 - 110	11	20
2-Nitroaniline	32.0	28.2		ug/L		88	61 - 126	1	20
3-Nitroaniline	32.0	24.9		ug/L		78	42 - 134	2	20
4-Nitroaniline	32.0	36.4		ug/L		114	40 - 142	0	20
Nitrobenzene	32.0	27.2		ug/L		85	49 - 116	14	20
2-Nitrophenol	32.0	28.5		ug/L		89	51 - 120	9	20
4-Nitrophenol	64.0	37.9		ug/L		59	21 - 110	0	20
N-Nitrosodi-n-propylamine	32.0	28.6		ug/L		89	52 - 122	3	20
N-Nitrosodiphenylamine	32.0	31.3		ug/L		98	63 - 117	2	20
2,2'-oxybis[1-chloropropane]	32.0	22.7		ug/L		71	34 - 110	8	20
Pentachlorophenol	64.0	54.2		ug/L		85	29 - 138	4	20
Phenanthrene	32.0	30.0		ug/L		94	63 - 121	0	20
Phenol	32.0	19.8		ug/L		62	33 - 100	4	20
Pyrene	32.0	30.7		ug/L		96	65 - 122	0	20
2,4,5-Trichlorophenol	32.0	28.3		ug/L		88	63 - 121	4	20
2,4,6-Trichlorophenol	32.0	25.3		ug/L		79	61 - 120	4	20
Caprolactam	32.0	18.5		ug/L		58	25 - 100	6	20
Atrazine	32.0	27.2		ug/L		85	57 - 128	1	20
1,1'-Biphenyl	32.0	21.4		ug/L		67	42 - 110	2	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-347328/3-A
Matrix: Water
Analysis Batch: 347422

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347328

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*79*		*30 - 123*
2-Fluorophenol (Surr)	*79*		*30 - 110*
Nitrobenzene-d5 (Surr)	*92*		*33 - 139*
Phenol-d5 (Surr)	*72*		*20 - 100*
Terphenyl-d14 (Surr)	*107*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*103*		*30 - 150*

Lab Sample ID: MB 500-348028/1-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		08/16/16 17:36	08/17/16 11:17	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		08/16/16 17:36	08/17/16 11:17	1
Acetophenone	<4.0		4.0	0.53	ug/L		08/16/16 17:36	08/17/16 11:17	1
Anthracene	<0.80		0.80	0.27	ug/L		08/16/16 17:36	08/17/16 11:17	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		08/16/16 17:36	08/17/16 11:17	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		08/16/16 17:36	08/17/16 11:17	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		08/16/16 17:36	08/17/16 11:17	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		08/16/16 17:36	08/17/16 11:17	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		08/16/16 17:36	08/17/16 11:17	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		08/16/16 17:36	08/17/16 11:17	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		08/16/16 17:36	08/17/16 11:17	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		08/16/16 17:36	08/17/16 11:17	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		08/16/16 17:36	08/17/16 11:17	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		08/16/16 17:36	08/17/16 11:17	1
Carbazole	<4.0		4.0	0.28	ug/L		08/16/16 17:36	08/17/16 11:17	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		08/16/16 17:36	08/17/16 11:17	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		08/16/16 17:36	08/17/16 11:17	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		08/16/16 17:36	08/17/16 11:17	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		08/16/16 17:36	08/17/16 11:17	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		08/16/16 17:36	08/17/16 11:17	1
Chrysene	<0.40		0.40	0.055	ug/L		08/16/16 17:36	08/17/16 11:17	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		08/16/16 17:36	08/17/16 11:17	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		08/16/16 17:36	08/17/16 11:17	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		08/16/16 17:36	08/17/16 11:17	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		08/16/16 17:36	08/17/16 11:17	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		08/16/16 17:36	08/17/16 11:17	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		08/16/16 17:36	08/17/16 11:17	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,6-Dinitrotoluene	<0.40		0.40	0.059	ug/L		08/16/16 17:36	08/17/16 11:17	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		08/16/16 17:36	08/17/16 11:17	1
Fluoranthene	<0.80		0.80	0.36	ug/L		08/16/16 17:36	08/17/16 11:17	1
Fluorene	<0.80		0.80	0.20	ug/L		08/16/16 17:36	08/17/16 11:17	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-348028/1-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		08/16/16 17:36	08/17/16 11:17	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		08/16/16 17:36	08/17/16 11:17	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		08/16/16 17:36	08/17/16 11:17	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		08/16/16 17:36	08/17/16 11:17	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		08/16/16 17:36	08/17/16 11:17	1
Isophorone	<1.6		1.6	0.30	ug/L		08/16/16 17:36	08/17/16 11:17	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		08/16/16 17:36	08/17/16 11:17	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		08/16/16 17:36	08/17/16 11:17	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		08/16/16 17:36	08/17/16 11:17	1
Naphthalene	<0.80		0.80	0.25	ug/L		08/16/16 17:36	08/17/16 11:17	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		08/16/16 17:36	08/17/16 11:17	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		08/16/16 17:36	08/17/16 11:17	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		08/16/16 17:36	08/17/16 11:17	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		08/16/16 17:36	08/17/16 11:17	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		08/16/16 17:36	08/17/16 11:17	1
4-Nitrophenol	<16		16	5.9	ug/L		08/16/16 17:36	08/17/16 11:17	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		08/16/16 17:36	08/17/16 11:17	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		08/16/16 17:36	08/17/16 11:17	1
Pentachlorophenol	<16		16	3.2	ug/L		08/16/16 17:36	08/17/16 11:17	1
Phenanthrene	<0.80		0.80	0.24	ug/L		08/16/16 17:36	08/17/16 11:17	1
Phenol	<4.0		4.0	0.54	ug/L		08/16/16 17:36	08/17/16 11:17	1
Pyrene	<0.80		0.80	0.34	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		08/16/16 17:36	08/17/16 11:17	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		08/16/16 17:36	08/17/16 11:17	1
Benzaldehyde	<32	^	32	12	ug/L		08/16/16 17:36	08/17/16 11:17	1
Caprolactam	<8.0		8.0	1.2	ug/L		08/16/16 17:36	08/17/16 11:17	1
Atrazine	<4.0		4.0	0.50	ug/L		08/16/16 17:36	08/17/16 11:17	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		08/16/16 17:36	08/17/16 11:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*63*		*30 - 123*	*08/16/16 17:36*	*08/17/16 11:17*	*1*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*08/16/16 17:36*	*08/17/16 11:17*	*1*
Nitrobenzene-d5 (Surr)	*80*		*33 - 139*	*08/16/16 17:36*	*08/17/16 11:17*	*1*
Phenol-d5 (Surr)	*48*		*20 - 100*	*08/16/16 17:36*	*08/17/16 11:17*	*1*
Terphenyl-d14 (Surr)	*115*		*42 - 150*	*08/16/16 17:36*	*08/17/16 11:17*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*30 - 150*	*08/16/16 17:36*	*08/17/16 11:17*	*1*

Lab Sample ID: LCS 500-348028/2-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	22.5		ug/L		70	41 - 112
Acenaphthylene	32.0	21.7		ug/L		68	48 - 110
Acetophenone	32.0	26.3		ug/L		82	54 - 116
Anthracene	32.0	29.6		ug/L		92	65 - 118
Benzo[a]anthracene	32.0	30.6		ug/L		95	69 - 121

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-348028/2-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]pyrene	32.0	33.9		ug/L		106	69 - 130
Benzo[b]fluoranthene	32.0	36.6		ug/L		114	66 - 133
Benzo[g,h,i]perylene	32.0	33.4		ug/L		104	47 - 145
Benzo[k]fluoranthene	32.0	32.3		ug/L		101	64 - 134
Bis(2-chloroethoxy)methane	32.0	26.5		ug/L		83	55 - 115
Bis(2-chloroethyl)ether	32.0	24.1		ug/L		75	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	32.6		ug/L		102	60 - 132
4-Bromophenyl phenyl ether	32.0	27.8		ug/L		87	60 - 124
Butyl benzyl phthalate	32.0	32.1		ug/L		100	63 - 127
Carbazole	32.0	29.9		ug/L		94	71 - 132
4-Chloroaniline	32.0	26.4		ug/L		82	15 - 125
4-Chloro-3-methylphenol	32.0	27.4		ug/L		86	63 - 120
2-Chloronaphthalene	32.0	20.7		ug/L		65	38 - 110
2-Chlorophenol	32.0	24.8		ug/L		77	49 - 110
4-Chlorophenyl phenyl ether	32.0	24.0		ug/L		75	55 - 115
Chrysene	32.0	32.2		ug/L		101	70 - 126
Dibenz(a,h)anthracene	32.0	33.8		ug/L		106	59 - 145
Dibenzofuran	32.0	23.0		ug/L		72	54 - 111
3,3'-Dichlorobenzidine	32.0	28.2		ug/L		88	57 - 145
2,4-Dichlorophenol	32.0	25.3		ug/L		79	53 - 123
Diethyl phthalate	32.0	27.0		ug/L		84	64 - 126
2,4-Dimethylphenol	32.0	23.9		ug/L		75	42 - 115
Dimethyl phthalate	32.0	27.0		ug/L		84	66 - 120
Di-n-butyl phthalate	32.0	32.0		ug/L		100	67 - 125
4,6-Dinitro-2-methylphenol	64.0	59.6		ug/L		93	34 - 152
2,4-Dinitrophenol	64.0	49.9		ug/L		78	20 - 140
2,4-Dinitrotoluene	32.0	27.1		ug/L		85	67 - 131
2,6-Dinitrotoluene	32.0	27.7		ug/L		87	66 - 125
Di-n-octyl phthalate	32.0	31.3		ug/L		98	63 - 133
Fluoranthene	32.0	31.1		ug/L		97	68 - 127
Fluorene	32.0	25.0		ug/L		78	54 - 113
Hexachlorobenzene	32.0	29.6		ug/L		93	63 - 127
Hexachlorobutadiene	32.0	18.3		ug/L		57	20 - 110
Hexachlorocyclopentadiene	32.0	16.4		ug/L		51	10 - 110
Hexachloroethane	32.0	17.4		ug/L		55	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	31.8		ug/L		99	52 - 150
Isophorone	32.0	27.4		ug/L		86	55 - 120
2-Methylnaphthalene	32.0	22.1		ug/L		69	32 - 110
2-Methylphenol	32.0	24.8		ug/L		77	49 - 113
3 & 4 Methylphenol	32.0	26.0		ug/L		81	49 - 114
Naphthalene	32.0	20.9		ug/L		65	32 - 110
2-Nitroaniline	32.0	26.1		ug/L		81	61 - 126
3-Nitroaniline	32.0	26.4		ug/L		82	42 - 134
4-Nitroaniline	32.0	28.1		ug/L		88	40 - 142
Nitrobenzene	32.0	24.5		ug/L		77	49 - 116
2-Nitrophenol	32.0	26.0		ug/L		81	51 - 120
4-Nitrophenol	64.0	12.9	J *	ug/L		20	21 - 110
N-Nitrosodi-n-propylamine	32.0	27.0		ug/L		84	52 - 122

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-348028/2-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
N-Nitrosodiphenylamine	32.0	29.0		ug/L		91	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	22.6		ug/L		71	34 - 110
Pentachlorophenol	64.0	51.1		ug/L		80	29 - 138
Phenanthrene	32.0	29.3		ug/L		92	63 - 121
Phenol	32.0	16.2		ug/L		51	33 - 100
Pyrene	32.0	31.2		ug/L		97	65 - 122
2,4,5-Trichlorophenol	32.0	26.9		ug/L		84	63 - 121
2,4,6-Trichlorophenol	32.0	25.1		ug/L		78	61 - 120
Caprolactam	32.0	15.6		ug/L		49	25 - 100
Atrazine	32.0	28.7		ug/L		90	57 - 128
1,1'-Biphenyl	32.0	20.8		ug/L		65	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*76*		*30 - 123*
2-Fluorophenol (Surr)	*70*		*30 - 110*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*
Phenol-d5 (Surr)	*52*		*20 - 100*
Terphenyl-d14 (Surr)	*112*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*82*		*30 - 150*

Lab Sample ID: LCSD 500-348028/3-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 348028

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	22.4		ug/L		70	41 - 112	1	20
Acenaphthylene	32.0	21.8		ug/L		68	48 - 110	0	20
Acetophenone	32.0	27.2		ug/L		85	54 - 116	3	20
Anthracene	32.0	30.8		ug/L		96	65 - 118	4	20
Benzo[a]anthracene	32.0	31.2		ug/L		97	69 - 121	2	20
Benzo[a]pyrene	32.0	33.4		ug/L		104	69 - 130	2	20
Benzo[b]fluoranthene	32.0	33.6		ug/L		105	66 - 133	9	20
Benzo[g,h,i]perylene	32.0	32.7		ug/L		102	47 - 145	2	20
Benzo[k]fluoranthene	32.0	33.7		ug/L		105	64 - 134	4	20
Bis(2-chloroethoxy)methane	32.0	26.8		ug/L		84	55 - 115	1	20
Bis(2-chloroethyl)ether	32.0	24.2		ug/L		76	46 - 110	0	20
Bis(2-ethylhexyl) phthalate	32.0	33.3		ug/L		104	60 - 132	2	20
4-Bromophenyl phenyl ether	32.0	28.4		ug/L		89	60 - 124	2	20
Butyl benzyl phthalate	32.0	32.1		ug/L		100	63 - 127	0	20
Carbazole	32.0	29.7		ug/L		93	71 - 132	1	20
4-Chloroaniline	32.0	27.8		ug/L		87	15 - 125	5	20
4-Chloro-3-methylphenol	32.0	28.3		ug/L		88	63 - 120	3	20
2-Chloronaphthalene	32.0	20.0		ug/L		63	38 - 110	3	20
2-Chlorophenol	32.0	26.0		ug/L		81	49 - 110	5	20
4-Chlorophenyl phenyl ether	32.0	23.6		ug/L		74	55 - 115	2	20
Chrysene	32.0	32.4		ug/L		101	70 - 126	1	20
Dibenz(a,h)anthracene	32.0	33.7		ug/L		105	59 - 145	0	20
Dibenzofuran	32.0	23.1		ug/L		72	54 - 111	1	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-348028/3-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 348028

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
3,3'-Dichlorobenzidine			32.0	27.7		ug/L		86	57 - 145	2	20
2,4-Dichlorophenol			32.0	26.3		ug/L		82	53 - 123	4	20
Diethyl phthalate			32.0	27.7		ug/L		86	64 - 126	2	20
2,4-Dimethylphenol			32.0	24.5		ug/L		77	42 - 115	3	20
Dimethyl phthalate			32.0	27.6		ug/L		86	66 - 120	2	20
Di-n-butyl phthalate			32.0	32.1		ug/L		100	67 - 125	0	20
4,6-Dinitro-2-methylphenol			64.0	61.4		ug/L		96	34 - 152	3	20
2,4-Dinitrophenol			64.0	51.8		ug/L		81	20 - 140	4	20
2,4-Dinitrotoluene			32.0	28.0		ug/L		87	67 - 131	3	20
2,6-Dinitrotoluene			32.0	28.4		ug/L		89	66 - 125	2	20
Di-n-octyl phthalate			32.0	31.8		ug/L		99	63 - 133	2	20
Fluoranthene			32.0	31.7		ug/L		99	68 - 127	2	20
Fluorene			32.0	24.7		ug/L		77	54 - 113	1	20
Hexachlorobenzene			32.0	30.8		ug/L		96	63 - 127	4	20
Hexachlorobutadiene			32.0	18.2		ug/L		57	20 - 110	1	20
Hexachlorocyclopentadiene			32.0	16.5		ug/L		52	10 - 110	1	20
Hexachloroethane			32.0	18.0		ug/L		56	20 - 110	3	20
Indeno[1,2,3-cd]pyrene			32.0	32.0		ug/L		100	52 - 150	0	20
Isophorone			32.0	28.2		ug/L		88	55 - 120	3	20
2-Methylnaphthalene			32.0	21.5		ug/L		67	32 - 110	3	20
2-Methylphenol			32.0	26.0		ug/L		81	49 - 113	5	20
3 & 4 Methylphenol			32.0	26.7		ug/L		83	49 - 114	3	20
Naphthalene			32.0	20.9		ug/L		65	32 - 110	0	20
2-Nitroaniline			32.0	27.4		ug/L		86	61 - 126	5	20
3-Nitroaniline			32.0	27.0		ug/L		84	42 - 134	2	20
4-Nitroaniline			32.0	28.3		ug/L		88	40 - 142	1	20
Nitrobenzene			32.0	25.8		ug/L		81	49 - 116	5	20
2-Nitrophenol			32.0	26.6		ug/L		83	51 - 120	2	20
4-Nitrophenol			64.0	13.3	J	ug/L		21	21 - 110	4	20
N-Nitrosodi-n-propylamine			32.0	28.4		ug/L		89	52 - 122	5	20
N-Nitrosodiphenylamine			32.0	30.0		ug/L		94	63 - 117	4	20
2,2'-oxybis[1-chloropropane]			32.0	22.8		ug/L		71	34 - 110	1	20
Pentachlorophenol			64.0	53.6		ug/L		84	29 - 138	5	20
Phenanthrene			32.0	30.2		ug/L		94	63 - 121	3	20
Phenol			32.0	19.4		ug/L		61	33 - 100	18	20
Pyrene			32.0	31.6		ug/L		99	65 - 122	1	20
2,4,5-Trichlorophenol			32.0	28.1		ug/L		88	63 - 121	4	20
2,4,6-Trichlorophenol			32.0	25.4		ug/L		79	61 - 120	1	20
Caprolactam			32.0	16.0		ug/L		50	25 - 100	3	20
Atrazine			32.0	28.9		ug/L		90	57 - 128	1	20
1,1'-Biphenyl			32.0	20.0		ug/L		62	42 - 110	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*74*		*30 - 123*
2-Fluorophenol (Surr)	*73*		*30 - 110*
Nitrobenzene-d5 (Surr)	*85*		*33 - 139*
Phenol-d5 (Surr)	*54*		*20 - 100*
Terphenyl-d14 (Surr)	*111*		*42 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-348028/3-A
Matrix: Water
Analysis Batch: 348088

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 348028

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*83*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-347272/1-A
Matrix: Water
Analysis Batch: 348468

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 347272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		08/10/16 09:43	08/19/16 11:01	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		08/10/16 09:43	08/19/16 11:01	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		08/10/16 09:43	08/19/16 11:01	1
beta-BHC	<0.040		0.040	0.010	ug/L		08/10/16 09:43	08/19/16 11:01	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		08/10/16 09:43	08/19/16 11:01	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		08/10/16 09:43	08/19/16 11:01	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		08/10/16 09:43	08/19/16 11:01	1
delta-BHC	<0.040		0.040	0.010	ug/L		08/10/16 09:43	08/19/16 11:01	1
Dieldrin	<0.040		0.040	0.013	ug/L		08/10/16 09:43	08/19/16 11:01	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		08/10/16 09:43	08/19/16 11:01	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		08/10/16 09:43	08/19/16 11:01	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		08/10/16 09:43	08/19/16 11:01	1
Endrin	<0.040		0.040	0.014	ug/L		08/10/16 09:43	08/19/16 11:01	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		08/10/16 09:43	08/19/16 11:01	1
Endrin ketone	<0.040		0.040	0.017	ug/L		08/10/16 09:43	08/19/16 11:01	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		08/10/16 09:43	08/19/16 11:01	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		08/10/16 09:43	08/19/16 11:01	1
Heptachlor	<0.040		0.040	0.014	ug/L		08/10/16 09:43	08/19/16 11:01	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		08/10/16 09:43	08/19/16 11:01	1
Methoxychlor	<0.080		0.080	0.023	ug/L		08/10/16 09:43	08/19/16 11:01	1
Toxaphene	<0.40		0.40	0.20	ug/L		08/10/16 09:43	08/19/16 11:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*104*		*30 - 143*	*08/10/16 09:43*	*08/19/16 11:01*	*1*
Tetrachloro-m-xylene	*68*		*30 - 120*	*08/10/16 09:43*	*08/19/16 11:01*	*1*

Lab Sample ID: LCS 500-347272/2-A
Matrix: Water
Analysis Batch: 348468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.293		ug/L		92	40 - 130
alpha-BHC	0.320	0.312		ug/L		97	70 - 130
alpha-Chlordane	0.320	0.358		ug/L		112	70 - 130
beta-BHC	0.320	0.304		ug/L		95	70 - 130
4,4'-DDD	0.320	0.345		ug/L		108	70 - 130
4,4'-DDE	0.320	0.313		ug/L		98	56 - 130
4,4'-DDT	0.320	0.360		ug/L		112	50 - 137

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-347272/2-A
Matrix: Water
Analysis Batch: 348468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 347272

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
delta-BHC	0.320	0.333		ug/L		104	70 - 130
Dieldrin	0.320	0.324		ug/L		101	70 - 130
Endosulfan I	0.320	0.215		ug/L		67	40 - 130
Endosulfan II	0.320	0.270		ug/L		84	49 - 130
Endosulfan sulfate	0.320	0.383		ug/L		120	70 - 130
Endrin	0.320	0.317		ug/L		99	69 - 130
Endrin aldehyde	0.320	0.334		ug/L		104	63 - 130
Endrin ketone	0.320	0.348		ug/L		109	54 - 141
gamma-BHC (Lindane)	0.320	0.327		ug/L		102	70 - 130
gamma-Chlordane	0.320	0.301		ug/L		94	63 - 130
Heptachlor	0.320	0.302		ug/L		94	40 - 130
Heptachlor epoxide	0.320	0.316		ug/L		99	70 - 130
Methoxychlor	0.320	0.353		ug/L		110	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*85*		*30 - 143*
Tetrachloro-m-xylene	*74*		*30 - 120*

Lab Sample ID: LCSD 500-347272/3-A
Matrix: Water
Analysis Batch: 348468

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 347272

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.265		ug/L		83	40 - 130	10	20
alpha-BHC	0.320	0.301		ug/L		94	70 - 130	4	20
alpha-Chlordane	0.320	0.344		ug/L		107	70 - 130	4	20
beta-BHC	0.320	0.291		ug/L		91	70 - 130	4	20
4,4'-DDD	0.320	0.328		ug/L		102	70 - 130	5	20
4,4'-DDE	0.320	0.305		ug/L		95	56 - 130	3	20
4,4'-DDT	0.320	0.338		ug/L		106	50 - 137	6	20
delta-BHC	0.320	0.321		ug/L		100	70 - 130	4	20
Dieldrin	0.320	0.309		ug/L		97	70 - 130	5	20
Endosulfan I	0.320	0.207		ug/L		65	40 - 130	4	20
Endosulfan II	0.320	0.260		ug/L		81	49 - 130	4	20
Endosulfan sulfate	0.320	0.345		ug/L		108	70 - 130	10	20
Endrin	0.320	0.302		ug/L		94	69 - 130	5	20
Endrin aldehyde	0.320	0.306		ug/L		96	63 - 130	9	20
Endrin ketone	0.320	0.324		ug/L		101	54 - 141	7	20
gamma-BHC (Lindane)	0.320	0.317		ug/L		99	70 - 130	3	20
gamma-Chlordane	0.320	0.290		ug/L		91	63 - 130	4	20
Heptachlor	0.320	0.275		ug/L		86	40 - 130	9	20
Heptachlor epoxide	0.320	0.303		ug/L		95	70 - 130	4	20
Methoxychlor	0.320	0.323		ug/L		101	47 - 153	9	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*96*		*30 - 143*
Tetrachloro-m-xylene	*66*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-347272/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347618 — **Prep Batch: 347272**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		08/10/16 09:43	08/12/16 15:11	1
PCB-1221	<0.40		0.40	0.20	ug/L		08/10/16 09:43	08/12/16 15:11	1
PCB-1232	<0.40		0.40	0.20	ug/L		08/10/16 09:43	08/12/16 15:11	1
PCB-1242	<0.40		0.40	0.20	ug/L		08/10/16 09:43	08/12/16 15:11	1
PCB-1248	<0.40		0.40	0.20	ug/L		08/10/16 09:43	08/12/16 15:11	1
PCB-1254	<0.40		0.40	0.20	ug/L		08/10/16 09:43	08/12/16 15:11	1
PCB-1260	<0.40		0.40	0.070	ug/L		08/10/16 09:43	08/12/16 15:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*30 - 127*	*08/10/16 09:43*	*08/12/16 15:11*	*1*
DCB Decachlorobiphenyl	*124*		*30 - 150*	*08/10/16 09:43*	*08/12/16 15:11*	*1*

Lab Sample ID: LCS 500-347272/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347618 — **Prep Batch: 347272**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.53		ug/L		88	58 - 121
PCB-1260	4.00	4.05		ug/L		101	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*66*		*30 - 127*
DCB Decachlorobiphenyl	*115*		*30 - 150*

Lab Sample ID: LCSD 500-347272/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347618 — **Prep Batch: 347272**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.47		ug/L		87	58 - 121	2	20
PCB-1260	4.00	3.91		ug/L		98	62 - 137	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*64*		*30 - 127*
DCB Decachlorobiphenyl	*116*		*30 - 150*

Lab Sample ID: MB 500-347771/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347806 — **Prep Batch: 347771**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		08/15/16 09:16	08/15/16 16:32	1
PCB-1221	<0.40		0.40	0.20	ug/L		08/15/16 09:16	08/15/16 16:32	1
PCB-1232	<0.40		0.40	0.20	ug/L		08/15/16 09:16	08/15/16 16:32	1
PCB-1242	<0.40		0.40	0.20	ug/L		08/15/16 09:16	08/15/16 16:32	1
PCB-1248	<0.40		0.40	0.20	ug/L		08/15/16 09:16	08/15/16 16:32	1
PCB-1254	<0.40		0.40	0.20	ug/L		08/15/16 09:16	08/15/16 16:32	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-347771/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347806 — **Prep Batch: 347771**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	<0.40		0.40	0.070	ug/L		08/15/16 09:16	08/15/16 16:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*30 - 127*	*08/15/16 09:16*	*08/15/16 16:32*	*1*
DCB Decachlorobiphenyl	*101*		*30 - 150*	*08/15/16 09:16*	*08/15/16 16:32*	*1*

Lab Sample ID: LCS 500-347771/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347806 — **Prep Batch: 347771**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.89		ug/L		97	58 - 121
PCB-1260	4.00	4.83		ug/L		121	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*74*		*30 - 127*
DCB Decachlorobiphenyl	*115*		*30 - 150*

Lab Sample ID: LCSD 500-347771/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347806 — **Prep Batch: 347771**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.89		ug/L		97	58 - 121	0	20
PCB-1260	4.00	4.54		ug/L		114	62 - 137	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*75*		*30 - 127*
DCB Decachlorobiphenyl	*107*		*30 - 150*

Lab Sample ID: MB 500-348910/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348948 — **Prep Batch: 348910**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		08/23/16 12:08	08/23/16 16:58	1
PCB-1221	<0.40		0.40	0.20	ug/L		08/23/16 12:08	08/23/16 16:58	1
PCB-1232	<0.40		0.40	0.20	ug/L		08/23/16 12:08	08/23/16 16:58	1
PCB-1242	<0.40		0.40	0.20	ug/L		08/23/16 12:08	08/23/16 16:58	1
PCB-1248	<0.40		0.40	0.20	ug/L		08/23/16 12:08	08/23/16 16:58	1
PCB-1254	<0.40		0.40	0.20	ug/L		08/23/16 12:08	08/23/16 16:58	1
PCB-1260	<0.40		0.40	0.070	ug/L		08/23/16 12:08	08/23/16 16:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*68*		*30 - 127*	*08/23/16 12:08*	*08/23/16 16:58*	*1*
DCB Decachlorobiphenyl	*81*		*30 - 150*	*08/23/16 12:08*	*08/23/16 16:58*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 500-348910/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348948 — **Prep Batch: 348910**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.38		ug/L		85	58 - 121
PCB-1260	4.00	3.88		ug/L		97	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*88*		*30 - 150*

Lab Sample ID: LCSD 500-348910/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348948 — **Prep Batch: 348910**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.16		ug/L		79	58 - 121	7	20
PCB-1260	4.00	3.44		ug/L		86	62 - 137	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*64*		*30 - 127*
DCB Decachlorobiphenyl	*56*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-347256/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347378 — **Prep Batch: 347256**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 20:58	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 20:58	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 20:58	1
Barium	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 20:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 20:58	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 20:58	1
Calcium	<0.20		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 20:58	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 20:58	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 20:58	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 20:58	1
Iron	<0.20		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 20:58	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 20:58	1
Magnesium	<0.10		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 20:58	1
Manganese	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 20:58	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 20:58	1
Potassium	<0.50		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 20:58	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 20:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 20:58	1
Sodium	<1.0		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 20:58	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 20:58	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 20:58	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-347256/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347378 — **Prep Batch: 347256**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 20:58	1

Lab Sample ID: LCS 500-347256/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347378 — **Prep Batch: 347256**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.83		mg/L		92	80 - 120
Antimony	0.500	0.483		mg/L		97	80 - 120
Arsenic	0.100	0.0978		mg/L		98	80 - 120
Barium	2.00	1.97		mg/L		98	80 - 120
Beryllium	0.0500	0.0494		mg/L		99	80 - 120
Cadmium	0.0500	0.0478		mg/L		96	80 - 120
Calcium	10.0	9.18		mg/L		92	80 - 120
Chromium	0.200	0.193		mg/L		97	80 - 120
Cobalt	0.500	0.496		mg/L		99	80 - 120
Copper	0.250	0.243		mg/L		97	80 - 120
Iron	1.00	0.918		mg/L		92	80 - 120
Lead	0.100	0.0984		mg/L		98	80 - 120
Magnesium	10.0	9.00		mg/L		90	80 - 120
Manganese	0.500	0.487		mg/L		97	80 - 120
Nickel	0.500	0.499		mg/L		100	80 - 120
Potassium	10.0	9.14		mg/L		91	80 - 120
Selenium	0.100	0.0888		mg/L		89	80 - 120
Silver	0.0500	0.0472		mg/L		94	80 - 120
Sodium	10.0	9.42		mg/L		94	80 - 120
Thallium	0.100	0.0928		mg/L		93	80 - 120
Vanadium	0.500	0.506		mg/L		101	80 - 120
Zinc	0.500	0.483		mg/L		97	80 - 120

Lab Sample ID: LCSD 500-347256/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347378 — **Prep Batch: 347256**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	2.00	1.82		mg/L		91	80 - 120	1	20
Antimony	0.500	0.486		mg/L		97	80 - 120	1	20
Arsenic	0.100	0.0986		mg/L		99	80 - 120	1	20
Barium	2.00	1.96		mg/L		98	80 - 120	0	20
Beryllium	0.0500	0.0487		mg/L		97	80 - 120	1	20
Cadmium	0.0500	0.0482		mg/L		96	80 - 120	1	20
Calcium	10.0	9.31		mg/L		93	80 - 120	1	20
Chromium	0.200	0.196		mg/L		98	80 - 120	1	20
Cobalt	0.500	0.500		mg/L		100	80 - 120	1	20
Copper	0.250	0.246		mg/L		98	80 - 120	1	20
Iron	1.00	0.907		mg/L		91	80 - 120	1	20
Lead	0.100	0.0984		mg/L		98	80 - 120	0	20
Magnesium	10.0	8.95		mg/L		89	80 - 120	1	20
Manganese	0.500	0.491		mg/L		98	80 - 120	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 500-347256/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347378 — **Prep Batch: 347256**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nickel	0.500	0.503		mg/L		101	80 - 120	1	20
Potassium	10.0	9.08		mg/L		91	80 - 120	1	20
Selenium	0.100	0.0894		mg/L		89	80 - 120	1	20
Silver	0.0500	0.0477		mg/L		95	80 - 120	1	20
Sodium	10.0	9.32		mg/L		93	80 - 120	1	20
Thallium	0.100	0.0936		mg/L		94	80 - 120	1	20
Vanadium	0.500	0.510		mg/L		102	80 - 120	1	20
Zinc	0.500	0.487		mg/L		97	80 - 120	1	20

Lab Sample ID: MRL 500-347665/16 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347665

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.00500	0.00410	J	mg/L		82	70 - 130

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-347302/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347474 — **Prep Batch: 347302**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000134	J	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:05	1

Lab Sample ID: LCS 500-347302/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347474 — **Prep Batch: 347302**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00204		mg/L		102	80 - 120

Lab Sample ID: 500-115474-1 MS — **Client Sample ID: MW-06-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347474 — **Prep Batch: 347302**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00026	B	0.00100	0.00113		mg/L		87	75 - 125

Lab Sample ID: 500-115474-1 MSD — **Client Sample ID: MW-06-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347474 — **Prep Batch: 347302**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00026	B	0.00100	0.00116		mg/L		90	75 - 125	3	20

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 500-115474-1 DU — **Client Sample ID: MW-06-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347474 — **Prep Batch: 347302**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Mercury	0.00026	B		0.000175	J F5	mg/L				40	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-347411/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347411

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/11/16 09:04	1

Lab Sample ID: LCS 500-347411/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347411

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			6.85	6.55		mg/L		96	80 - 120		

Lab Sample ID: 500-115474-1 MS — **Client Sample ID: MW-06-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347411

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide	5.4		6.85	12.3		mg/L		101	75 - 125		

Lab Sample ID: 500-115474-1 MSD — **Client Sample ID: MW-06-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347411

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	5.4		6.85	12.4		mg/L		102	75 - 125	1	20

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-348065/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.11	J	5.0	1.5	mg/L			08/17/16 06:41	1

Lab Sample ID: LCS 500-348065/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348065

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			20.0	19.2		mg/L		96	80 - 120		

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: MB 500-348230/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.00	J	5.0	1.5	mg/L			08/18/16 06:36	1

Lab Sample ID: LCS 500-348230/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.8		mg/L		99	80 - 120

Lab Sample ID: 500-115474-6 MS — **Client Sample ID: MW-11-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348230

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.9	B	20.0	22.9		mg/L		85	75 - 125

Lab Sample ID: 500-115474-6 MSD — **Client Sample ID: MW-11-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348230

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	5.9	B	20.0	23.4		mg/L		88	75 - 125	2	20

Method: 9040C - pH

Lab Sample ID: 500-115474-10 DU — **Client Sample ID: Composite Drum Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347470

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.0	HF	8.0		SU		0.1	

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-348022/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348022

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			08/15/16 22:33	1

Lab Sample ID: LCS 500-348022/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348022

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.4		mg/L		104	80 - 120
TOC Result 1	10.0	10.3		mg/L		103	80 - 120

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-348022/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348022

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
TOC Result 2			10.0	10.5		mg/L		105	80 - 120		

Lab Sample ID: 500-115474-3 MS — **Client Sample ID: MW-08-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348022

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates	16	F1	10.0	22.8	F1	mg/L		71	75 - 125		
TOC Result 1	16	F1	10.0	22.8	F1	mg/L		70	75 - 125		
TOC Result 2	16	F1	10.0	22.8	F1	mg/L		73	75 - 125		

Lab Sample ID: 500-115474-3 MSD — **Client Sample ID: MW-08-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 348022

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	16	F1	10.0	22.8	F1	mg/L		71	75 - 125	0	20
TOC Result 1	16	F1	10.0	22.8	F1	mg/L		69	75 - 125	0	20
TOC Result 2	16	F1	10.0	22.8	F1	mg/L		73	75 - 125	0	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-347446/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347446

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			08/11/16 11:55	1

Lab Sample ID: LCS 500-347446/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347446

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			200	178		mg/L		89	80 - 120		

Lab Sample ID: 500-115474-1 DU — **Client Sample ID: MW-06-GW-08092016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 347446

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	7.0			6.50	F5	mg/L				7	5

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-348040/1-A
Matrix: Water
Analysis Batch: 348425

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348040

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0880	J	0.20	0.028	mg/L		08/16/16 21:15	08/18/16 20:47	1

Lab Sample ID: LCS 500-348040/2-A
Matrix: Water
Analysis Batch: 348425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348040

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.49		mg/L		100	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-347287/3
Matrix: Water
Analysis Batch: 347287

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:10	1

Lab Sample ID: LCS 500-347287/4
Matrix: Water
Analysis Batch: 347287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.0933		mg/L		93	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-348358/12
Matrix: Water
Analysis Batch: 348358

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:19	1

Lab Sample ID: LCS 500-348358/13
Matrix: Water
Analysis Batch: 348358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.963		mg/L		96	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30

Matrix: Water

Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347454	08/12/16 01:17	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	347454	08/12/16 01:44	PMF	TAL CHI
Total/NA	Prep	3510C			347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D		5	347729	08/15/16 17:57	AJD	TAL CHI
Total/NA	Prep	3510C	RA		347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D	RA	5	347729	08/15/16 19:24	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348468	08/19/16 13:54	PJG	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347618	08/12/16 15:57	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:02	PJ1	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		5	347551	08/11/16 16:16	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:10	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		5	347551	08/11/16 16:00	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:25	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:08	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:15		
					(End)	08/11/16 09:19		
Total/NA	Analysis	9038		4	348065		CLB	TAL CHI
					(Start)	08/17/16 06:49		
					(End)	08/17/16 06:50		
Total/NA	Analysis	9060A		10	348022	08/16/16 00:33	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:20		
					(End)	08/11/16 12:22		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	348425	08/18/16 22:33	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		2	347287		MTB	TAL CHI
					(Start)	08/10/16 11:11		
					(End)	08/10/16 11:12		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 23:28	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347454	08/12/16 02:11	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	347454	08/12/16 02:38	PMF	TAL CHI
Total/NA	Prep	3510C			347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D		10	347999	08/16/16 19:47	GES	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		5	348468	08/19/16 14:13	PJG	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347264	08/10/16 17:19	BJH	TAL CHI
Total/NA	Prep	3510C	RE		348910	08/23/16 12:08	JJH	TAL CHI
Total/NA	Analysis	8082A	RE	1	348948	08/23/16 17:59	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:08	PJ1	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		5	347551	08/11/16 16:21	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:16	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		5	347551	08/11/16 16:05	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:28	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:26	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:27		
					(End)	08/11/16 09:30		
Total/NA	Analysis	9038		10	348065		CLB	TAL CHI
					(Start)	08/17/16 06:57		
					(End)	08/17/16 06:58		
Total/NA	Analysis	9060A		40	348022	08/16/16 00:49	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:24		
					(End)	08/11/16 12:25		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		50	348425	08/18/16 22:36	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		5	347287		MTB	TAL CHI
					(Start)	08/10/16 11:12		
					(End)	08/10/16 11:12		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 23:29	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347454	08/12/16 03:05	PMF	TAL CHI
Total/NA	Prep	3510C			347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347729	08/15/16 14:56	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348468	08/19/16 14:32	PJG	TAL CHI
Total/NA	Prep	3510C			347771	08/15/16 09:16	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347806	08/15/16 17:48	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:13	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:21	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:34	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:33	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:30		
					(End)	08/11/16 09:34		
Total/NA	Analysis	9038		1	348065		CLB	TAL CHI
					(Start)	08/17/16 06:50		
					(End)	08/17/16 06:51		
Total/NA	Analysis	9060A		1	348022	08/16/16 01:06	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:25		
					(End)	08/11/16 12:27		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	348425	08/18/16 20:58	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	347287		MTB	TAL CHI
					(Start)	08/10/16 11:12		
					(End)	08/10/16 11:12		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 22:28	HMW	TAL CHI

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347454	08/12/16 03:31	PMF	TAL CHI
Total/NA	Prep	3510C			347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347729	08/15/16 15:22	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348468	08/19/16 14:51	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347264	08/10/16 17:49	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:18	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:26	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:37	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:36	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:34		
					(End)	08/11/16 09:38		
Total/NA	Analysis	9038		1	348065		CLB	TAL CHI
					(Start)	08/17/16 06:58		
					(End)	08/17/16 06:59		
Total/NA	Analysis	9060A		1	348022	08/16/16 02:02	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:27		
					(End)	08/11/16 12:29		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	348425	08/18/16 21:01	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	347287		MTB	TAL CHI
					(Start)	08/10/16 11:12		
					(End)	08/10/16 11:13		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 22:30	HMW	TAL CHI

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347454	08/12/16 03:58	PMF	TAL CHI
Total/NA	Prep	3510C			347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347729	08/15/16 15:48	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348468	08/19/16 15:10	PJG	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347618	08/12/16 16:12	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:22	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:31	PJ1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:40	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:39	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:38		
					(End)	08/11/16 09:42		
Total/NA	Analysis	9038		4	348065		CLB	TAL CHI
					(Start)	08/17/16 06:59		
					(End)	08/17/16 07:00		
Total/NA	Analysis	9060A		1	348022	08/16/16 02:18	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:29		
					(End)	08/11/16 12:31		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	348425	08/18/16 21:04	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	347287		MTB	TAL CHI
					(Start)	08/10/16 11:13		
					(End)	08/10/16 11:13		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 22:32	HMW	TAL CHI

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10
Date Received: 08/09/16 17:55

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347454	08/12/16 04:25	PMF	TAL CHI
Total/NA	Prep	3510C			347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D		1	347729	08/15/16 16:13	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		1	348468	08/19/16 15:30	PJG	TAL CHI
Total/NA	Prep	3510C			347771	08/15/16 09:16	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347806	08/15/16 18:04	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:27	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:35	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:43	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:42	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:42		
					(End)	08/11/16 09:45		
Total/NA	Analysis	9038		1	348230		CLB	TAL CHI
					(Start)	08/18/16 06:38		
					(End)	08/18/16 06:39		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6
Date Collected: 08/09/16 12:10
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		4	348022	08/16/16 02:35	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:31		
					(End)	08/11/16 12:32		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	348425	08/18/16 21:07	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		2	347287		MTB	TAL CHI
					(Start)	08/10/16 11:13		
					(End)	08/10/16 11:14		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 22:34	HMW	TAL CHI

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7
Date Collected: 08/09/16 09:20
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	347454	08/12/16 04:51	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	50	347454	08/12/16 05:18	PMF	TAL CHI
Total/NA	Prep	3510C			348028	08/16/16 17:36	JP1	TAL CHI
Total/NA	Analysis	8270D		5	348088	08/17/16 16:08	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		5	348468	08/19/16 15:49	PJG	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8082A		1	347618	08/12/16 16:27	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:32	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:40	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:46	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:45	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:45		
					(End)	08/11/16 09:49		
Total/NA	Analysis	9038		4	348230		CLB	TAL CHI
					(Start)	08/18/16 06:41		
					(End)	08/18/16 06:42		
Total/NA	Analysis	9060A		4	348022	08/16/16 02:51	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-13-GW-08092016 — Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20 — **Matrix: Water**
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:32		
					(End)	08/11/16 12:34		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	348425	08/18/16 21:09	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	347287		MTB	TAL CHI
					(Start)	08/10/16 11:14		
					(End)	08/10/16 11:14		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 22:36	HMW	TAL CHI

Client Sample ID: DUP-1(08092016) — Lab Sample ID: 500-115474-8

Date Collected: 08/09/16 00:00 — **Matrix: Water**
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	347516	08/12/16 12:25	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	50	347516	08/12/16 12:51	PMF	TAL CHI
Total/NA	Prep	3510C			348028	08/16/16 17:36	JP1	TAL CHI
Total/NA	Analysis	8270D		5	348088	08/17/16 16:33	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		5	348468	08/19/16 16:08	PJG	TAL CHI
Total/NA	Prep	3510C			347771	08/15/16 09:16	JJH	TAL CHI
Total/NA	Analysis	8082A		1	348729	08/22/16 13:38	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:36	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:52	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:52	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:51	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:49		
					(End)	08/11/16 09:53		
Total/NA	Analysis	9038		4	348065		CLB	TAL CHI
					(Start)	08/17/16 07:01		
					(End)	08/17/16 07:02		
Total/NA	Analysis	9060A		4	348022	08/16/16 03:08	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:34		
					(End)	08/11/16 12:36		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	348425	08/18/16 21:12	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NO2 B		1	347287		MTB	TAL CHI
					(Start)	08/10/16 11:15		
					(End)	08/10/16 11:15		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 22:38	HMW	TAL CHI

Client Sample ID: DUP-2(08092016)

Lab Sample ID: 500-115474-9

Date Collected: 08/09/16 00:00

Matrix: Water

Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347516	08/12/16 13:18	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	347516	08/12/16 13:45	PMF	TAL CHI
Total/NA	Prep	3510C			347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D		5	347729	08/15/16 17:31	AJD	TAL CHI
Total/NA	Prep	3510C	RA		347328	08/10/16 16:28	JP1	TAL CHI
Total/NA	Analysis	8270D	RA	5	347729	08/15/16 19:50	AJD	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8081B		5	348468	08/19/16 16:27	PJG	TAL CHI
Total/NA	Prep	3510C			347272	08/10/16 09:43	JJH	TAL CHI
Total/NA	Analysis	8082A		1	348729	08/23/16 08:48	BJH	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347378	08/10/16 22:49	PJ1	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347551	08/11/16 14:10	PJ1	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		5	347551	08/11/16 16:26	PJ1	TAL CHI
Dissolved	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Dissolved	Analysis	6010C		1	347665	08/13/16 00:00	KML	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		1	347378	08/10/16 21:57	PJ1	TAL CHI
Total/NA	Prep	3010A			347256	08/10/16 08:27	JEF	TAL CHI
Total/NA	Analysis	6010C		5	347551	08/11/16 16:10	PJ1	TAL CHI
Dissolved	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	347474	08/11/16 14:55	MJD	TAL CHI
Total/NA	Prep	7470A			347302	08/10/16 11:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	347474	08/11/16 14:54	MJD	TAL CHI
Total/NA	Analysis	9034		1	347411		CLB	TAL CHI
					(Start)	08/11/16 09:53		
					(End)	08/11/16 09:57		
Total/NA	Analysis	9038		4	348065		CLB	TAL CHI
					(Start)	08/17/16 07:00		
					(End)	08/17/16 07:01		
Total/NA	Analysis	9060A		20	348022	08/16/16 03:24	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	348536	08/19/16 14:22	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	347446		SMO	TAL CHI
					(Start)	08/11/16 12:36		
					(End)	08/11/16 12:38		
Total/NA	Prep	SM 4500 NH3 B			348040	08/16/16 21:15	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Lab Sample ID: 500-115474-9
Date Collected: 08/09/16 00:00
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NH3 G		50	348425	08/18/16 22:39	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		2	347287		MTB	TAL CHI
					(Start)	08/10/16 11:15		
					(End)	08/10/16 11:16		
Total/NA	Analysis	SM 4500 NO3 F		1	348358	08/16/16 23:30	HMW	TAL CHI

Client Sample ID: Composite Drum Sample

Lab Sample ID: 500-115474-10
Date Collected: 08/09/16 16:00
Matrix: Water
Date Received: 08/09/16 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	347516	08/12/16 14:12	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	347516	08/12/16 14:38	PMF	TAL CHI
Total/NA	Analysis	1010A		1	348517	08/19/16 12:39	ADK	TAL CHI
Total/NA	Analysis	9040C		1	347470		SMO	TAL CHI
					(Start)	08/11/16 16:27		
					(End)	08/11/16 16:29		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

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2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-115474 COC

Chain of Custody Record

Lab Job #: 500-115474

Chain of Custody Number:

Page 1 of 2

Temperature °C of Cooler: 23, 28, 31, 21, 4, 21, 23, 23

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago IL 60603
Phone: 312-575-3700
Fax:
E-Mail: jack.kratzmeyer@arcadis-us.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI 001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 500-11099
Sampler: M Schettler & B. Thurnhoffer
Lab PM: Therese Hargraves

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total Metals (Preservative 3)	Dissolved Metals (Preservative 3)	Ammonia, NO3, NO2 (Preservative 6)	Sulfide (Preservative 4, 5)	VOCs (Preservative 1)	TOC (Preservative 2)	TSS, SO4, NO2 (Preservative 8)	Dissolved Gases (Preservative 9)	Comments
1		MW-06-GW-08092016	8/9/16	9:30	18	W										- Diss metals field
2		MW-07-GW-08092016		1145	18	W										filtered.
3		MW-08-GW-08092016		1345	18	W										- unable to remove
4		MW-09-GW-08092016		1530	18	W										all headspace from
5		MW-10-GW-08092016		1410	18	W										VOA vials due to
6		MW-11-GW-08092016		1210	18	W										continuous reaction
7		MW-13-GW-08092016		9:20	18	W										between water +
8		DUP-1(08092016)		—	18	W										preservative. Tiny bubbles.
9		DUP-2(08092016)		—	18	W										- See order for
																methods +
																modified TCL lists.

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other Trisodium Phosphate

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	8.9.16	17:05	[signature]	TA	8/9/16	1705
[signature]	TA	8/9/16	1755	[signature]	TA-CAT	8/10/16	0720

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Level IV Data package
- 2 empty coolers w/ unused bottles.

Lab Comments:

TAL-4124-509 (1209)

8/24/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-115474

Chain of Custody Number:

Page 2 of 2

Temperature °C of Cooler:

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago IL 60603
Phone: 312.575.3700
Fax:
E-Mail: jack.kratzmeyer@arcadis-us.com
PO#/Reference#

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 500-11099
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	8260 VOCS (Preservative 1)	PH, flashpoint (Preservative 8)								Comments
10		Composite Drum Sample	8/9/16	1600	4	WW	X	X								

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	8-9-16	1305	[signature]	TA	8/9/16	1705
[signature]	TA	8/9/16	1755	[signature]	TA-CAL	8/10/16	0720

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-509 (1209)

8/24/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-115474-1

Login Number: 115474
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3,2.8,3.1,2.4,2.7,3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-115474-2
Client Project/Site: Lake Calumet Cluster Site
Revision: 1

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
8/25/2016 11:19:40 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-2

Job ID: 500-115474-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-115474-2

Comments
No additional comments.

Receipt
The samples were received on 8/9/2016 5:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 2.3º C, 2.4º C, 2.7º C, 2.8º C, 3.1º C and 3.3º C.

Receipt Exceptions

Revised Report - Removed TA Detection Summary.

Dissolved gas vials were ordered from Pace Analytical Energy Services (formerly Microseeps) for the analysis of methane, oxygen, carbon dioxide and nitrogen and shipped to TestAmerica, and then delivered to the job site by TestAmerica. Upon shipping the collected samples back to Pace it was determined that Pace had shipped the wrong vials to TestAmerica. The correct vials should have been 40 ml vials with Benzylakonium Chloride as a preservative. Instead, the lab had shipped 40 ml vials with Trisodium Phosphate as a preservative.

Based on the recommendation of the Pace Technical Director, it was determined that analysis for methanol, oxygen and nitrogen would not be affected by the presence of trisodium phosphate, and the submitted vials could be tested for 3 out of the 4 dissolved gases. However, the trisodium phosphate would affect on the carbon dioxide result since it would lower the pH of the vial, and CO2 would be lost. TestAmerica was advised to ship an extra unopened 250 ml amber glass unpreserved sample to Pace for analysis for carbon dioxide.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

August 24, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-115474-1**

Pace Workorder: 19879

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, August 11, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 08/24/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages ____

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 19879 500-115474-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received
198790001	MW-06-GW-08092016	Water	8/9/2016 09:30	8/11/2016 11:00
198790002	MW-07-GW-08092016	Water	8/9/2016 11:45	8/11/2016 11:00
198790003	MW-08-GW-08092016	Water	8/9/2016 13:45	8/11/2016 11:00
198790004	MW-09-GW-08092016	Water	8/9/2016 15:30	8/11/2016 11:00
198790005	MW-10-GW-08092016	Water	8/9/2016 14:10	8/11/2016 11:00
198790006	MW-11-GW-08092016	Water	8/9/2016 12:10	8/11/2016 11:00
198790007	MW-13-GW-08092016	Water	8/9/2016 09:20	8/11/2016 11:00
198790008	DUP-1(8092016)	Water	8/9/2016 00:00	8/11/2016 11:00
198790009	DUP-2(8092016)	Water	8/9/2016 00:00	8/11/2016 11:00

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PROJECT SUMMARY

Workorder: 19879 500-115474-1

Workorder Comments

The methane, oxygen and nitrogen analyses were performed from samples collected in trisodium phospate vials and the carbon dioxide analyses were performed from a sample collected in an unpreserved amber bottle.

On August 14 the laboratory experienced a failure of a walk in cooler. This project contained samples stored in that cooler. As soon as we became aware of the issue the samples were moved to other operational coolers. Our bottles and preservation techniques are the primary mode of protecting sample integrity and temperature is a secondary line of protection. Based on our in lab sample preservation studies we believe there were no adverse impacts on sample results.

The container pH for samples 19879 (0001-0002, 0004) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

This report is being re-issued following corrections made to process the available results based upon the before mentioned container preservation designations; 08/24/2016.

Sample Comments

Lab ID: 198790002 **Sample ID:** MW-07-GW-08092016 **Sample Type:** N

The analysis for dissolved gases, method AM20GAx, was reported at dilution due to foaming during the headspace preparation/equilibration of the sample.

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790001** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-06-GW-08092016** Date Collected: 8/9/2016 09:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**19000**	ug/l	0.50	0.027	1	8/17/2016 06:37	TD	n
Carbon Dioxide	**24**	mg/l	5.0	0.24	1	8/17/2016 11:08	TD	n
Oxygen	**0.92**	mg/l	0.50	0.13	1	8/17/2016 06:37	TD	n
Nitrogen	**7.3**	mg/l	2.0	0.24	1	8/17/2016 06:37	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790002** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-07-GW-08092016** Date Collected: 8/9/2016 11:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	8/17/2016 06:52	TD	n
Carbon Dioxide	**47**	mg/l	20	0.96	4	8/17/2016 11:35	TD	d,n
Oxygen	**0.65**	mg/l	0.50	0.13	1	8/17/2016 06:52	TD	n
Nitrogen	**4.6**	mg/l	2.0	0.24	1	8/17/2016 06:52	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790003** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-08-GW-08092016** Date Collected: 8/9/2016 13:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**17000**	ug/l	0.50	0.027	1	8/17/2016 07:05	TD	n
Carbon Dioxide	**150**	mg/l	5.0	0.24	1	8/17/2016 11:22	TD	n
Oxygen	**1.5**	mg/l	0.50	0.13	1	8/17/2016 07:05	TD	n
Nitrogen	**4.8**	mg/l	2.0	0.24	1	8/17/2016 07:05	TD	n

Report ID: 19879 - 829443

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790004** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-09-GW-08092016** Date Collected: 8/9/2016 15:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	8/17/2016 07:21	TD	n
Carbon Dioxide	**340**	mg/l	5.0	0.24	1	8/17/2016 11:50	TD	n
Oxygen	**1.2**	mg/l	0.50	0.13	1	8/17/2016 07:21	TD	n
Nitrogen	**3.8**	mg/l	2.0	0.24	1	8/17/2016 07:21	TD	n

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Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790005** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-10-GW-08092016** Date Collected: 8/9/2016 14:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**6000**	ug/l	0.50	0.027	1	8/17/2016 07:35	TD	n
Carbon Dioxide	**78**	mg/l	5.0	0.24	1	8/17/2016 12:06	TD	n
Oxygen	**2.1**	mg/l	0.50	0.13	1	8/17/2016 07:35	TD	n
Nitrogen	**16**	mg/l	2.0	0.24	1	8/17/2016 07:35	TD	n

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Pittsburgh, PA 15238
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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790006**
Sample ID: **MW-11-GW-08092016**

Date Received: 8/11/2016 11:00 Matrix: Water
Date Collected: 8/9/2016 12:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**22000**	ug/l	0.50	0.027	1	8/17/2016 07:48	TD	n
Carbon Dioxide	**160**	mg/l	5.0	0.24	1	8/17/2016 12:18	TD	n
Oxygen	**1.4**	mg/l	0.50	0.13	1	8/17/2016 07:48	TD	n
Nitrogen	**5.9**	mg/l	2.0	0.24	1	8/17/2016 07:48	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790007** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-13-GW-08092016** Date Collected: 8/9/2016 09:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	8/17/2016 08:07	TD	n
Carbon Dioxide	**32**	mg/l	5.0	0.24	1	8/17/2016 12:36	TD	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	8/17/2016 08:07	TD	n
Nitrogen	**6.7**	mg/l	2.0	0.24	1	8/17/2016 08:07	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790008** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **DUP-1(8092016)** Date Collected: 8/9/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**22000**	ug/l	0.50	0.027	1	8/17/2016 08:20	TD	n
Carbon Dioxide	**40**	mg/l	5.0	0.24	1	8/17/2016 12:50	TD	n
Oxygen	**0.96**	mg/l	0.50	0.13	1	8/17/2016 08:20	TD	n
Nitrogen	**3.1**	mg/l	2.0	0.24	1	8/17/2016 08:20	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790009**
Sample ID: **DUP-2(8092016)**

Date Received: 8/11/2016 11:00 Matrix: Water
Date Collected: 8/9/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**19000**	ug/l	0.50	0.027	1	8/17/2016 08:34	TD	n
Carbon Dioxide	**24**	mg/l	5.0	0.24	1	8/17/2016 13:04	TD	n
Oxygen	**0.73**	mg/l	0.50	0.13	1	8/17/2016 08:34	TD	n
Nitrogen	**5.1**	mg/l	2.0	0.24	1	8/17/2016 08:34	TD	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 19879 500-115474-1

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
d	The analyte concentration was determined from a dilution.

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Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 19879 500-115474-1

QC Batch: DISG/5552 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 198790001, 198790002, 198790003, 198790004, 198790005, 198790006, 198790007, 198790008, 198790009

METHOD BLANK: 43606

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 43607

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 43608 43610

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	880	860	117	116	80-120	0.86	20	n

LABORATORY CONTROL SAMPLE & LCSD: 43609 43611

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Oxygen	mg/l	11	12	12	108	107	80-120	0.93	20	n
Nitrogen	mg/l	140	140	130	99	91	80-120	8.4	20	n

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Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 19879 500-115474-1

QC Batch: DISG/5555 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 198790001, 198790002, 198790003, 198790004, 198790005, 198790006, 198790007, 198790008, 198790009

METHOD BLANK: 43628

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n

LABORATORY CONTROL SAMPLE & LCSD: 43629 43630

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	120	120	101	99	80-120	2	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 19879 500-115474-1

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 19879 500-115474-1

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
198790001	MW-06-GW-08092016			AM20GAX	DISG/5552
198790002	MW-07-GW-08092016			AM20GAX	DISG/5552
198790003	MW-08-GW-08092016			AM20GAX	DISG/5552
198790004	MW-09-GW-08092016			AM20GAX	DISG/5552
198790005	MW-10-GW-08092016			AM20GAX	DISG/5552
198790006	MW-11-GW-08092016			AM20GAX	DISG/5552
198790007	MW-13-GW-08092016			AM20GAX	DISG/5552
198790008	DUP-1(8092016)			AM20GAX	DISG/5552
198790009	DUP-2(8092016)			AM20GAX	DISG/5552
198790001	MW-06-GW-08092016			AM20GAX	DISG/5555
198790002	MW-07-GW-08092016			AM20GAX	DISG/5555
198790003	MW-08-GW-08092016			AM20GAX	DISG/5555
198790004	MW-09-GW-08092016			AM20GAX	DISG/5555
198790005	MW-10-GW-08092016			AM20GAX	DISG/5555
198790006	MW-11-GW-08092016			AM20GAX	DISG/5555
198790007	MW-13-GW-08092016			AM20GAX	DISG/5555
198790008	DUP-1(8092016)			AM20GAX	DISG/5555
198790009	DUP-2(8092016)			AM20GAX	DISG/5555

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TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19879

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8/25/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76652.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115474-1
Address: 220 William Pitt Way, ,	Due Date Requested: 8/19/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - ~~Methane~~, Carbon Dioxide, ~~Oxygen and Nitrogen~~)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-06-GW-08092016 (500-115474-1)	8/9/16	09:30 Central		Water			X	1	
MW-07-GW-08092016 (500-115474-2)	8/9/16	11:45 Central		Water			X	1	
MW-08-GW-08092016 (500-115474-3)	8/9/16	13:45 Central		Water			X	1	
MW-09-GW-08092016 (500-115474-4)	8/9/16	15:30 Central		Water			X	1	
MW-10-GW-08092016 (500-115474-5)	8/9/16	14:10 Central		Water			X	1	
MW-11-GW-08092016 (500-115474-6)	8/9/16	12:10 Central		Water			X	1	
MW-13-GW-08092016 (500-115474-7)	8/9/16	09:20 Central		Water			X	1	
DUP-1(08092016) (500-115474-8)	8/9/16	Central		Water			X	1	
DUP-2(08092016) (500-115474-9)	8/9/16	Central		Water			X	1	

Possible Hazard Identification
Unconfirmed 0.5°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 08/10/16 1600	Company TA	Received by:	Date/Time: 8-11-16 1100	Company PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19879

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8/25/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76650.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115474-1
Address: 220 William Pitt Way, ,	Due Date Requested: 8/19/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-06-GW-08092016 (500-115474-1)	8/9/16	09:30 Central		Water			X	2	
MW-07-GW-08092016 (500-115474-2)	8/9/16	11:45 Central		Water			X	2	
MW-08-GW-08092016 (500-115474-3)	8/9/16	13:45 Central		Water			X	2	
MW-09-GW-08092016 (500-115474-4)	8/9/16	15:30 Central		Water			X	2	
MW-10-GW-08092016 (500-115474-5)	8/9/16	14:10 Central		Water			X	2	
MW-11-GW-08092016 (500-115474-6)	8/9/16	12:10 Central		Water			X	2	
MW-13-GW-08092016 (500-115474-7)	8/9/16	09:20 Central		Water			X	2	
DUP-1(08092016) (500-115474-8)	8/9/16	Central		Water			X	2	
DUP-2(08092016) (500-115474-9)	8/9/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed 0.5°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 08/16/16 1100	Company TA	Received by:	Date/Time: 8.11.16 11 00	Company PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

NON-CONFORMANCE FORM

PAES Work Order #: 19879

Date: 8.11.16 Time of Receipt: 11:00 Receiver: LY

Client: TA Chicago

REASON FOR NON-CONFORMANCE:

Requested Methane, O_2, CO_2 & Nitrogen
Received 2 TSP vials & 1 unpreserved glass
bottle for each sample.

ACTION TAKEN:

Client name: _____ Date: _____ Time: _____

OK per Pat McLoughlin

Customer Service Initials: RW Date: 8-12-16

F-PAE-Q-014-rev.00, 20 Nov2014

Mark Mikesell - IMPORTANT - Arcadis Lake Calumet Cluster - Dissolved Gases - - Please call

From: "Hargraves, Therese" <Therese.Hargraves@testamericainc.com>
To: "Patrick McLoughlin" <Patrick.McLoughlin@pacelabs.com>
Date: 8/23/2016 5:52 PM
Subject: IMPORTANT - Arcadis Lake Calumet Cluster - Dissolved Gases - - Please call
Cc: "Ruth Welsh" <Ruth.Welsh@pacelabs.com>

19878, 19879
Fixed.
MG 082416

Ruth and Patrick,

Based on our conference call on 8/10/16 to discuss how to analyze for the 4 dissolved gases methane, oxygen, carbon dioxide and nitrogen from the incorrectly shipped trisodium phosphate vials, it was agreed to analyze the samples in the following manner:

1. Methane, oxygen and nitrogen (3 out of 4) would be analyzed out of the 40 ml vial with trisodium phosphate vial since Patrick McLoughlin indicated that these vials would not affect these 3 gases.
2. Carbon dioxide could not be analyzed from the trisodium phosphate vials since it would lower the pH too much and CO would be lost. You recommended that TestAmerica send an unopened 250ml amber unpreserved bottle to perform the CO2 analysis from.

From looking at the raw data, it appears that methane has one time of analysis, and CO2, oxygen and nitrogen all have another time of analysis. This could not be possible if only the CO2 was analyzed from a different container.

Please call me first thing in the morning to discuss since you did not appear to do what we discussed in the conference call.

SHIPPING ALERT: Labor Day, Monday September 5th 2016

For the upcoming Labor Day holiday (observed Monday, September 5th) FedEx and UPS will not have scheduled service on Monday September 5th.

If you have BODs sampled August 29th, 30th or 31st, or short hold samples arriving Friday, September 2nd or on the weekend, we ask that you contact your Project Manager in advance to ensure your samples meet all holding time criteria.

We are thankful for your business and hope that you have a wonderful and safe holiday!

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback.

THERESE HARGRAVES
Project Manager

TestAmerica

Cooler Receipt Form

Client Name: TA Chicago Project: 500-115474-1 Lab Work Order: 19879

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 651484262807

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 0.5°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)		✓		
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LY Date: 8.11.16

Project Manager Review: ew Date: 8-12-16

F-PAE-Q-009-rev.00, 20 Nov2014

Sample Tracking Record

Client Name: Test America

Page _____ of _____

Client Project Number: 500-115474-1

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas	TSP / unpreserved			
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
19879/1-9				seabrook	LY	8.11.16	11:00
↓	TD	8-17-16	330	↓ TSP	TD	8-17-16	1330
18979/1-9	TD/mh.	080716	09:00	unpres	TD/mh.	080716	14:00

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-115474 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago IL 60603
Phone: 312-575-3700
Fax:
E-Mail: jack.kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-115474
Chain of Custody Number:
Page 1 of 2
Temperature °C of Cooler: 23, 28, 31, 2, 4, 2, 2, 3, 3

Client: Arcadis
Client Project #: CI 001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 500-11099
Sampler: M Schettler & B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other Trisodium Phosphate

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total Metals (3)	Dissolved Metals (3)	Ammonia, NO3, NO2 (6)	Sulfide (4,5)	VOCs (1)	TOC (2)	TSS, SO4, NO2 (8)	Dissolved Gases (9)	Comments
1		MW-06-GW-08092016	8/9/16	9:30	18	W										- Diss metals field
2		MW-07-GW-08092016		1145	18	W										filtered.
3		MW-08-GW-08092016		1345	18	W										- unable to remove
4		MW-09-GW-08092016		1530	18	W										all headspace from
5		MW-10-GW-08092016		1410	18	W										VOA vials due to
6		MW-11-GW-08092016		1210	18	W										continuous reaction
7		MW-13-GW-08092016		9:20	18	W										between water +
8		DUP-1(08092016)		—	18	W										preservative. Tiny bubbles.
9		DUP-2(08092016)		—	18	W										- See order for
																methods +
																modified TCL lists.

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	8.9.16	17:05	[signature]	TA	8/9/16	1705
[signature]	TA	8/9/16	1755	[signature]	TA-CAT	8/10/16	0720

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Level IV Data package
- 2 empty coolers w/ unused bottles.

Lab Comments:

TAL-4124-509 (1209)
8/25/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-115474

Chain of Custody Number:

Page 2 of 2

Temperature °C of Cooler:

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago IL 60603
Phone: 312.575.3700
Fax:
E-Mail: jack.kratzmeyer@arcadis-us.com
PO#/Reference#

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 500-11099
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	8260 VOCS (Preservative 1)	PH, flashpoint (Preservative 8)								Comments
10		Composite Drum Sample	8/9/16	1600	4	WW	X	X								

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: STANDARD

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	8-9-16	1305	[signature]	TA	8/9/16	1705
[signature]	TA	8/9/16	1755	[signature]	TA-CAL	8/10/16	0720

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-509 (1209)

8/25/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-115474-2

Login Number: 115474
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3,2.8,3.1,2.4,2.7,3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile, Dissolved Gases, Semivolatile, Pesticides, PCBs,

Metals and General Chemistry Analyses

SDG #500-115433-1 and 500-115433-2 (rev2)

Analyses Performed by:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #26234
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #500-115433-1 and 50-115433-2 (rev 2) for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC/ DISS GASES	SVOC	PEST/ PCB	MET	MISC
MW-01-GW-08082016	500-115433-1	Water	08/08/2016		X	X	X	X	X
MW-02-GW-08082016	500-115433-2	Water	08/08/2016		X	X	X	X	X
MW-03-GW-08082016	500-115433-3	Water	08/08/2016		X	X	X	X	X
MW-04-GW-08082016	500-115433-4	Water	08/08/2016		X	X	X	X	X
MW-05-GW-08082016	500-115433-5	Water	08/08/2016		X	X	X	X	X

Notes:

1. MISC-Miscellaneous parameters: Sulfate, Sulfide, Total organic carbon (TOC), Total suspended solids (TSS), Ammonia, Nitrogen/Nitrite, Nitrogen/Nitrate and Nitrogen, Nitrate-Nitrite.

2. Dissolved gases analysis was sub-contracted out to Pace/Microseeps, located in Pittsburg, Pennsylvania (SDG number 19878).

3. Dissolved gas vials received form Pace/Microseeps for the analysis of methane, oxygen, carbon dioxide and nitrogen were determined TestAmerica laboratory to be the wrong vials after collection. The correct vials should have been 40 ml vials with Benzylakonium Chloride as a preservative. Instead, the lab had shipped 40 ml vials with Trisodium Phosphate as a preservative.

   Based on the recommendation of the Pace/Microseeps Technical Director, it was determined that analysis for methane, oxygen and nitrogen would not be affected by the presence of Trisodium phosphate, and the submitted vials could be tested for 3 out of the 4 dissolved gases. However, the Trisodium phosphate would have an effect on the carbon dioxide result since it would lower the pH of the vial, and CO2 would be lost. TestAmerica shipped an extra unopened 250 ml amber glass unpreserved sample to Pace/Microseeps for analysis of the carbon dioxide.

4. A matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location MW-05-GW-08082016 for VOC analysis; sample location MW-01-GW-08082016 for Mercury analysis; sample location MW-01-GW-08082016 for Sulfide analysis; and, sample location MW-02-GW-08082016 for sulfate analysis.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, 8081B, 8082A and AM20GAx (Dissolved gases). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:

s.u. Standard units

The chain of custody documents preservation of HCL was used in the VOC sample vials. However, the pH of all samples was above the required criteria of pH of 2 s.u,. However, all the samples exhibiting a pH above 2 s.u. were analyzed within the 7 days.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-01-GW-08082016	4-Bromofluorobenzene	AC
	Dibromofluoromethane	< LL but > 10%
	1,2-Dichloroethane-d4	AC
	Toluene-d8	AC

Notes:

LL Lower control limit

AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Control Limit	Sample Result	Qualification
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ[1]
	Detect	J[1]

Note:

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample associated with this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-02-GW-08082016	Chlorobenzene	--	450 D	62000 D
MW-04-GW-08082016	Benzene	--	510 D	97000 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)		X		X	
Matrix Spike Duplicate(MSD)		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DISSOLVED GASES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
AM20GAx (methane)	Water	14 days from collection to analysis	Cool to <6 °C; preserved with Trisodium phosphate (TSP) to a pH of >10 s.u.
AM20GAx (carbon dioxide, oxygen and nitrogen)			Cool to <6 °C; preserved with Benzylakonium Chloride (BAK).

Note:

s.u. Standard units

Notes:

1. According to the case narrative, dissolved gas vials received from Pace/Microseeps for the analysis of Dissolved Gases (methane, oxygen, carbon dioxide and nitrogen) were determined (by TestAmerica laboratory) to be the wrong vials after collection. The correct vials should have been 40 ml vials with Benzylakonium Chloride (BAK) as a preservative. Instead, the lab had shipped 40 ml vials with Trisodium Phosphate (TSP) as a preservative.

   Based on the recommendation of the Pace/Microseeps Technical Director, it was determined that analysis for methane, oxygen and nitrogen would not be affected by the presence of TSP, and the submitted vials could be tested for 3 out of the 4 dissolved gases. However, the TSP would have an effect on the carbon dioxide result since it would lower the pH of the vial, and CO2 would be lost. TestAmerica shipped an extra unopened 250 ml amber glass unpreserved sample to Pace/Microseeps for analysis of the carbon dioxide. Upon analysis the 250 ml amber glass sample bottles were preserved with BAK at the Pace/Microseeps laboratory.

2. Based upon the Pace/Microseeps case narrative, a walk-in cooler malfunctioned at the lab which contained all the samples containers associated with this SDG. Upon discovery of the malfunction the samples were moved to an operating walk-in cooler. A temperature of 20 °C was recorded.

The analyses that exceeded the holding are presented in the following table.

Sample Locations	Temperature	Criteria
MW-01-GW-08082016 MW-02-GW-08082016 MW-03-GW-08082016 MW-04-GW-08082016 MW-05-GW-08082016	20 °C	Cool to <6 °C
Sample	**Preservative (pH)**	**Criteria**
MW-05-GW-08082016 (methane, nitrogen and oxygen)	9	>10

Sample results associated with sample locations analyzed by analytical method SW-846 8260 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times the temperature	J	UJ
Analysis completed greater than two times temperature	J	R

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. No qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with this SDG.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times/Temperature/Preservation		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method/Initial Calibration/Continuing calibration blanks		X	X		
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries					X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs					X
Continuing calibration %Ds		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms					X
B. Quantitation Reports					x
C. RT of sample compounds within the established RT windows					X
D. Transcription/calculation errors present					X
E. Reporting limits adjusted to reflect sample dilutions					X

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.3 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

3.4 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-01-GW-08082016 MW-02-GW-08082016 MW-05-GW-08082016	CCV %D	Bis(2-chloroethyl)ether	-24.8%
		2,2'-oxybis[1-chloropropane]	-30.8%
		4-Chloroaniline	+35.5%
		Caprolactam	+32.1%
		Hexachlorocyclopentadiene	-25.7%
		3-Nitroaniline	+28.4%
		4-Nitrophenol	-23.7%
		Indeno[1,2,3-cd]pyrene	+42.6%
MW-03-GW-08082016 MW-04-GW-08082016		4-Chloroaniline	-28.5%
		Caprolactam	+23.3%
		Hexachlorocyclopentadiene	-94.4
		4-Nitrophenol	-41.7%
		Pentachlorophenol	-49.4%
		3,3'-Dichlorobenzidine	+23.5
		Indeno[1,2,3-cd]pyrene	+28.4%
	RRF	Hexachlorocyclopentadiene	0.0219

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 20% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Locations	Internal Standard	Response
MW-04-GW-08082016	1,4-Dichlorobenzene-d4	AC
	Naphthalene-d8	AC
	Acenaphthene-d10	AC
	Phenanthrene-d10	AC
	Chrysene-d12	AC
	Perylene-d12	< LL but > 25%

Note:

AC Acceptable

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
MW-01-GW-08082016 MW-03-GW-08082016 MW-04-GW-08082016 MW-05-GW-08082016	Hexachlorocyclopentadiene	<10%	<10%
MW-02-GW-08082016	Indeno[1,2,3-cd]pyrene	>UL	>UL
	Carbazole	AC	>UL

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Sample locations associated with LCS/LCSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
MW-01-GW-08082016 MW-03-GW-08082016	4-Chloroaniline
MW-04-GW-08082016 MW-05-GW-08082016	Hexachlorocyclopentadiene

The criteria used to evaluate the RPD between the LCS/LCSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with this SDG.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-01-GW-08082016	Naphthalene	--	120 D	120 D
	Phenol	--	62 D	62 D
MW-02-GW-08082016	2-Methylnaphthalene	--	76 D	76 D
MW-03-GW-08082016	Carbazole	--	120 D	120 D
	2,4-Dimethylphenol	--	68 D	68 D
	Phenanthrene	--	62 D	62 D
	2-Methylnaphthalene	--	330 D	330 D
	Naphthalene	--	2000 D	2000 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R		X	X		
LCS/LCSD Precision (RPD)		X	X		
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X	X		
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X	X		
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.5 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99 is allowed.

3.6 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-01-GW-08082016 MW-02-GW-08082016 MW-03-GW-08082016 MW-04-GW-08082016 MW-05-GW-08082016	CCV %D	alpha -Chlordane	+26.7%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 20%or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. Pesticide analysis requires that one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries reported from the primary column were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated whit this SDG.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
MW-01-GW-08082016 MW-02-GW-08082016 MW-03-GW-08082016 MW-04-GW-08082016 MW-05-GW-08082016	alpha-BHC
	delta-BHC
	gamma-BHC (Lindane)

The criteria used to evaluate the RPD between the LCS/LCSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

Compounds were not detected in any of the sample locations.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

PESTICIDES; SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X	X		
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column %D $\leq$ 40% (If dual column is performed for reporting-not confirmation)		X		X	
Dilution Factor		X		X	
Moisture Content					x
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X	X		
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

PESTICIDES; SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					

%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference
%D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB

analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries reported from the primary column were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated whit this SDG.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate was not collected with a sample location associated with this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (%RPD) of detected sample results must be less than 40%.

The dual column analysis exhibited an acceptable %RPD between columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	
%RSD – relative standard deviation					

PCBs; SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
%R - percent recovery, RPD - relative percent difference, %D – difference					

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C, 7470A and USEPA Methods 9034 (Sulfate), 9038 (Sulfide), 9060A (TOC), Standard Method (SM)2540D (TSS) and SM4500 (Ammonia, Nitrogen, Nitrite, Nitrogen Nitrate). Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
  - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
  - E The reported value is estimated due to the presence of interference.
  - N Spiked sample recovery is not within control limits.
  - * Duplicate analysis is not within control limits.
- Validation Qualifiers
  - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
  - UB Analyte considered non-detect at the listed value due to associated blank contamination.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Preserved to a pH of less than 2.
SW-846 7470A	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All analytes associated with calibration standard recoveries were within control limits, with the exception of the analytes presented in the following table.

Sample Locations	Initial/Continuing	Analytes	Standard Recovery
MW-05-GW-08062016	ICV	Lead (Dissolved)	118%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Analytes	Control Limit	Sample Result	Qualification
All analytes (except Mercury)	75% to 89%	Non-detect	UJ
		Detect	J
	111% to 125%	Non-detect	No Action
		Detect	J
	<75%	Non-detect	R
		Detect	J
	>125%	Non-detect	No Action
		Detect	J or R
	>160%	Non-detect	No Action
		Detect	R
Mercury	65% to 79%	Non-detect	UJ
		Detect	J
	121% to 135%	Non-detect	No Action
		Detect	J
	<65%	Non-detect	R
		Detect	J
	>135%	Non-detect	No Action
		Detect	R

3.2 RL Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the reporting limit. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the RL standard analysis are presented below in the RL standards evaluation table (if applicable).

All RL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or

greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis performed on sample location MW-01-GW-080816 (for Mercury) exhibited recoveries within the control limits.

A MS was not performed on a sample location associated with this SDG for Metals

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

MS/MSD analysis was performed in replacement of the laboratory duplicate analysis (for Mercury). The MS/MSD recoveries exhibited acceptable RPD.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate analysis was not performed on a sample location within this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

A serial dilution analysis was not performed on a sample location associated with this SDG.

8. General Assessment – Total vs. Dissolved

When the dissolved concentration exceeded the associated total concentration, and both results were five times greater than the LOQ, then the %D between the total and dissolved concentrations must be less than 20%.

The calculated %D between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6010C/7470A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)					
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X		X	
B. Method Blanks		X		X	
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
ICP Serial Dilution %D					X
Total vs. Dissolved		X		X	
Tier III Validation					
Initial Calibration Verification		X	X		
Continuing Calibration Verification		X		X	
CRDL Standard Recovery		X		X	
ICP Interference Check		X		X	
ICP-MS Internal Standards					X
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Nitrite-N by SM4500-NO2-B		48 hours from collection to analysis	Cool to < 6 °C
Nitrate-N by SM4500-NO3 F		28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
(Nitrate/Nitrite as N) by SM4500-NO3 F		48 hours from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Sulfate by SW-846 9038A		28 days from collection to analysis	Cool to <6 °C.
Sulfide by SW-846 9034		7 days from collection to analysis	Cool to <6 °C.
Total Organic Carbon (TOC) by SW-846 9060A		28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Total Suspended Solids (TSS) by SM2540 D		7 days from collection to analysis	Cool to <6 °C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
MW-05-GW-08082016	Sulfate	Detected sample results <RL and <BAL	"UB" at the RL
MW-03-GW-08082016		Detected sample results >RL and <BAL	"UB" at detected sample concentration

Note:

RL Reporting limit

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS analysis performed on sample locations MW-01-GW-08082016 (Sulfide) and MW-02-GW-08082016 (Sulfate) exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

MS/MSD analysis was performed in replacement of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPD.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA SW-846 9034, 9038, 9060A, SM 2540D and SM4500	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference,

%D – difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: Lisa Horton

DATE: September 5, 2016

PEER REVIEW: Dennis Capria

DATE: October 6, 2016

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-115433 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St
Address: Ste 1350 Chicago IL
Phone: 312-575-3700
Fax:
E-Mail: jack.kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-115433
Chain of Custody Number:
Page 1 of 1
Temperature °C of Cooler: 2.8, 3.1, 2.4

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 50011099
Sampler: M. Schettler / B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCB, Pesticide (None)	Total metals (Nitric)	Diss Metals (Nitric)	Ammonia, NO3, NO2 (Sulfuric)	Sulfide (Zinc *)	VOCs (1)	TOC (Sulfuric)	TSS, SO4, NO2 (None)	Diss. Gas (Trisodium phosphate)	Comments
1		MW-01-GW-08082016	8/8/16	1100	18	W										See order
2		MW-02-GW-08082016	↓	1300	18	W										for Methods
3		MW-03-GW-08082016		1330	18	W										+ Modified
4		[redacted]-GW-08082016		1520	18	W										TCL lists.
5		MW-05-GW-08082016		1540	18	W										

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: STANDARD

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Megan Schettler	Arcadis	08/08/2016	1850	Ben Thurnhoffer	Arcadis	8-8-16	1600
Ben Thurnhoffer	Arcadis	8-8-2016	1705	[illegible]	TA	8/8/16	1705
[illegible]	TA	8/8/16	1745	[illegible]	TA-CHI	8/9/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Level IV data package
* zinc acetate + Sodium hydroxide

Lab Comments:

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	LCS or LCSD is outside acceptance limits.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
*	ISTD response or retention time outside acceptable limits

GC Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**110**	J	10	3.5	ug/L			08/11/16 19:48	2
Benzene	**33**		1.0	0.29	ug/L			08/11/16 19:48	2
Bromodichloromethane	<2.0		2.0	0.74	ug/L			08/11/16 19:48	2
Bromoform	<2.0		2.0	0.97	ug/L			08/11/16 19:48	2
Bromomethane	<4.0		4.0	1.6	ug/L			08/11/16 19:48	2
Carbon disulfide	<4.0		4.0	0.90	ug/L			08/11/16 19:48	2
Carbon tetrachloride	<2.0		2.0	0.77	ug/L			08/11/16 19:48	2
Chlorobenzene	**4.9**		2.0	0.77	ug/L			08/11/16 19:48	2
Chloroethane	<2.0		2.0	1.0	ug/L			08/11/16 19:48	2
Chloroform	<2.0		2.0	0.74	ug/L			08/11/16 19:48	2
Chloromethane	<2.0		2.0	0.64	ug/L			08/11/16 19:48	2
cis-1,2-Dichloroethene	<2.0		2.0	0.82	ug/L			08/11/16 19:48	2
cis-1,3-Dichloropropene	<2.0		2.0	0.83	ug/L			08/11/16 19:48	2
Cyclohexane	<2.0		2.0	0.97	ug/L			08/11/16 19:48	2
Dibromochloromethane	<2.0		2.0	0.98	ug/L			08/11/16 19:48	2
1,2-Dibromo-3-Chloropropane	<10		10	4.0	ug/L			08/11/16 19:48	2
1,2-Dibromoethane	<2.0		2.0	0.77	ug/L			08/11/16 19:48	2
1,2-Dichlorobenzene	<2.0		2.0	0.67	ug/L			08/11/16 19:48	2
1,3-Dichlorobenzene	<2.0		2.0	0.80	ug/L			08/11/16 19:48	2
1,4-Dichlorobenzene	<2.0		2.0	0.73	ug/L			08/11/16 19:48	2
Dichlorodifluoromethane	<4.0		4.0	1.3	ug/L			08/11/16 19:48	2
1,1-Dichloroethane	<2.0		2.0	0.82	ug/L			08/11/16 19:48	2
1,2-Dichloroethane	<2.0		2.0	0.78	ug/L			08/11/16 19:48	2
1,1-Dichloroethene	<2.0		2.0	0.78	ug/L			08/11/16 19:48	2
1,2-Dichloropropane	<2.0		2.0	0.86	ug/L			08/11/16 19:48	2
Ethylbenzene	**20**		1.0	0.37	ug/L			08/11/16 19:48	2
2-Hexanone	<10		10	3.1	ug/L			08/11/16 19:48	2
Isopropylbenzene	**11**		2.0	0.77	ug/L			08/11/16 19:48	2
Methyl acetate	<10		10	4.0	ug/L			08/11/16 19:48	2
Methylcyclohexane	<2.0		2.0	0.63	ug/L			08/11/16 19:48	2
Methylene Chloride	<10		10	3.3	ug/L			08/11/16 19:48	2
Methyl Ethyl Ketone	**85**		10	4.2	ug/L			08/11/16 19:48	2
methyl isobutyl ketone	**200**		10	4.3	ug/L			08/11/16 19:48	2
Methyl tert-butyl ether	<2.0		2.0	0.79	ug/L			08/11/16 19:48	2
Styrene	<2.0		2.0	0.77	ug/L			08/11/16 19:48	2
1,1,2,2-Tetrachloroethane	<2.0		2.0	0.80	ug/L			08/11/16 19:48	2
Tetrachloroethene	<2.0		2.0	0.74	ug/L			08/11/16 19:48	2
Toluene	**10**		1.0	0.30	ug/L			08/11/16 19:48	2
trans-1,2-Dichloroethene	<2.0		2.0	0.70	ug/L			08/11/16 19:48	2
trans-1,3-Dichloropropene	<2.0		2.0	0.72	ug/L			08/11/16 19:48	2
1,2,4-Trichlorobenzene	<2.0		2.0	0.68	ug/L			08/11/16 19:48	2
1,1,1-Trichloroethane	<2.0		2.0	0.76	ug/L			08/11/16 19:48	2
1,1,2-Trichloroethane	<2.0		2.0	0.70	ug/L			08/11/16 19:48	2
Trichloroethene	<1.0		1.0	0.33	ug/L			08/11/16 19:48	2
Trichlorofluoromethane	<2.0		2.0	0.85	ug/L			08/11/16 19:48	2
1,1,2-Trichloro-1,2,2-trifluoroethane	<2.0		2.0	0.92	ug/L			08/11/16 19:48	2
Vinyl chloride	<1.0		1.0	0.41	ug/L			08/11/16 19:48	2
Xylenes, Total	**21**	J	2.0	0.44	ug/L			08/11/16 19:48	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Date Collected: 08/08/16 11:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*08/11/16 19:48*	*2*
Dibromofluoromethane	*44*	*X*	*70 - 120*		*08/11/16 19:48*	*2*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 127*		*08/11/16 19:48*	*2*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/11/16 19:48*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.8**		0.73	0.23	ug/L		08/09/16 15:52	08/12/16 18:47	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/09/16 15:52	08/12/16 18:47	1
Acetophenone	**1.1**	**J**	3.7	0.49	ug/L		08/09/16 15:52	08/12/16 18:47	1
Anthracene	<0.73		0.73	0.24	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[a]anthracene	**0.20**		0.15	0.041	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[a]pyrene	**0.21**		0.15	0.072	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[b]fluoranthene	**0.25**		0.15	0.059	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzo[k]fluoranthene	**0.16**		0.15	0.047	ug/L		08/09/16 15:52	08/12/16 18:47	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/12/16 18:47	1
Bis(2-chloroethyl)ether	<1.5	~~^~~ J	1.5	0.21	ug/L		08/09/16 15:52	08/12/16 18:47	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.39	ug/L		08/09/16 15:52	08/12/16 18:47	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/09/16 15:52	08/12/16 18:47	1
Carbazole	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Chloroaniline	<7.3	~~^ *~~ J	7.3	1.5	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/12/16 18:47	1
Chrysene	**0.21**	**J**	0.37	0.050	ug/L		08/09/16 15:52	08/12/16 18:47	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		08/09/16 15:52	08/12/16 18:47	1
Dibenzofuran	**0.64**	**J**	1.5	0.19	ug/L		08/09/16 15:52	08/12/16 18:47	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/12/16 18:47	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dimethylphenol	**4.0**	**J**	7.3	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/09/16 15:52	08/12/16 18:47	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		08/09/16 15:52	08/12/16 18:47	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,6-Dinitrotoluene	<0.37		0.37	0.054	ug/L		08/09/16 15:52	08/12/16 18:47	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/09/16 15:52	08/12/16 18:47	1
Fluoranthene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/12/16 18:47	1
Fluorene	**1.2**		0.73	0.18	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachlorocyclopentadiene	~~<15~~ ~~*~~	R	~~15~~	~~4.7~~	ug/L		08/09/16 15:52	08/12/16 18:47	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/09/16 15:52	08/12/16 18:47	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		08/09/16 15:52	08/12/16 18:47	1
Isophorone	<1.5		1.5	0.27	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Methylnaphthalene	**3.6**		1.5	0.048	ug/L		08/09/16 15:52	08/12/16 18:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Date Collected: 08/08/16 11:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	J	1.5	0.22	ug/L		08/09/16 15:52	08/12/16 18:47	1
3 & 4 Methylphenol	**6.3**		1.5	0.33	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		08/09/16 15:52	08/12/16 18:47	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		08/09/16 15:52	08/12/16 18:47	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/12/16 18:47	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/09/16 15:52	08/12/16 18:47	1
4-Nitrophenol	<15	J	15	5.4	ug/L		08/09/16 15:52	08/12/16 18:47	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		08/09/16 15:52	08/12/16 18:47	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,2'-oxybis[1-chloropropane]	<1.5	J	1.5	0.28	ug/L		08/09/16 15:52	08/12/16 18:47	1
Pentachlorophenol	<15		15	2.9	ug/L		08/09/16 15:52	08/12/16 18:47	1
Phenanthrene	**0.79**		0.73	0.22	ug/L		08/09/16 15:52	08/12/16 18:47	1
Pyrene	<0.73		0.73	0.31	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/12/16 18:47	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		08/09/16 15:52	08/12/16 18:47	1
Benzaldehyde	<29		29	11	ug/L		08/09/16 15:52	08/12/16 18:47	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/09/16 15:52	08/12/16 18:47	1
Atrazine	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/12/16 18:47	1
1,1'-Biphenyl	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/12/16 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*49*		*30 - 123*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
Nitrobenzene-d5 (Surr)	*50*		*33 - 139*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
Phenol-d5 (Surr)	*35*		*20 - 100*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
Terphenyl-d14 (Surr)	*67*		*42 - 150*	*08/09/16 15:52*	*08/12/16 18:47*	*1*
2,4,6-Tribromophenol (Surr)	*87*		*30 - 150*	*08/09/16 15:52*	*08/12/16 18:47*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**120**	D	3.7	1.1	ug/L		08/09/16 15:52	08/19/16 11:17	5
Phenol	**62**	D	18	2.5	ug/L		08/09/16 15:52	08/19/16 11:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*50*		*30 - 123*	*08/09/16 15:52*	*08/19/16 11:17*	*5*
2-Fluorophenol (Surr)	*47*		*30 - 110*	*08/09/16 15:52*	*08/19/16 11:17*	*5*
Nitrobenzene-d5 (Surr)	*50*		*33 - 139*	*08/09/16 15:52*	*08/19/16 11:17*	*5*
Phenol-d5 (Surr)	*35*		*20 - 100*	*08/09/16 15:52*	*08/19/16 11:17*	*5*
Terphenyl-d14 (Surr)	*66*		*42 - 150*	*08/09/16 15:52*	*08/19/16 11:17*	*5*
2,4,6-Tribromophenol (Surr)	*97*		*30 - 150*	*08/09/16 15:52*	*08/19/16 11:17*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 15:03	1
alpha-BHC	<0.037	* J	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 15:03	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/09/16 12:29	08/18/16 15:03	1
beta-BHC	<0.037		0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 15:03	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:03	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 15:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/09/16 12:29	08/18/16 15:03	1
delta-BHC	<0.037	* J	0.037	0.0095	ug/L		08/09/16 12:29	08/18/16 15:03	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		08/09/16 12:29	08/18/16 15:03	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 15:03	1
gamma-BHC (Lindane)	<0.037	* J	0.037	0.0052	ug/L		08/09/16 12:29	08/18/16 15:03	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		08/09/16 12:29	08/18/16 15:03	1
Heptachlor	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:03	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:03	1
Methoxychlor	<0.074		0.074	0.021	ug/L		08/09/16 12:29	08/18/16 15:03	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/18/16 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*08/09/16 12:29*	*08/18/16 15:03*	*1*
Tetrachloro-m-xylene	*107*		*30 - 120*	*08/09/16 12:29*	*08/18/16 15:03*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:05	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/09/16 12:29	08/10/16 10:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*57*		*30 - 127*	*08/09/16 12:29*	*08/10/16 10:05*	*1*
DCB Decachlorobiphenyl	*69*		*30 - 150*	*08/09/16 12:29*	*08/10/16 10:05*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.38**		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:05	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:05	1
Arsenic	**0.0042**	J	0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:05	1
Barium	**0.68**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:05	1
Cadmium	**0.00094**	J	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:05	1
Calcium	**550**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:05	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:05	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:05	1
Copper	**0.0068**	J	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:05	1
Iron	**0.53**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:08	1
Lead	**0.010**		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:05	1
Magnesium	**0.64**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:05	1
Manganese	**0.014**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-01-GW-08082016

Date Collected: 08/08/16 11:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	**0.018**		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:05	1
Potassium	**51**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:05	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:05	1
Sodium	**220**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:05	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:05	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:05	1
Zinc	**0.021**		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.24**		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:11	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:11	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:11	1
Barium	**0.65**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:11	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:11	1
Calcium	**530**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:11	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:11	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:11	1
Copper	**0.0033**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:11	1
Iron	<0.20		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:14	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:11	1
Magnesium	**0.071**	**J**	0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:11	1
Manganese	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:11	1
Nickel	**0.017**		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:11	1
Potassium	**50**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:11	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:11	1
Sodium	**210**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:11	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:11	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:11	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 08:56	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**2.8**		1.0	0.18	mg/L			08/10/16 08:46	1
Sulfate	**37**	~~**B**~~	5.0	1.5	mg/L			08/16/16 09:12	1
Total Organic Carbon - Duplicates	**43**		2.0	0.53	mg/L			08/15/16 23:06	2
Nitrogen, Nitrate	**0.047**	**J**	0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**26**		5.0	2.5	mg/L			08/09/16 11:10	1
Ammonia	**57**	~~**B**~~	5.0	0.71	mg/L		08/16/16 12:55	08/17/16 11:44	25

Client Sample ID: MW-01-GW-08082016

Lab Sample ID: 500-115433-1

Date Collected: 08/08/16 11:00

Matrix: Water

Date Received: 08/08/16 17:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:31	1
Nitrogen, Nitrate Nitrite	**0.047**	**J**	0.10	0.035	mg/L			08/12/16 20:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Lab Sample ID: 500-115433-2

Date Collected: 08/08/16 13:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.1**		5.0	1.7	ug/L			08/11/16 20:16	1
Benzene	**10**		0.50	0.15	ug/L			08/11/16 20:16	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 20:16	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 20:16	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 20:16	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/11/16 20:16	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 20:16	1
Chloroethane	**2.6**		1.0	0.51	ug/L			08/11/16 20:16	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 20:16	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 20:16	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/11/16 20:16	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 20:16	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/11/16 20:16	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 20:16	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 20:16	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,2-Dichlorobenzene	**4.8**		1.0	0.33	ug/L			08/11/16 20:16	1
1,3-Dichlorobenzene	**2.5**		1.0	0.40	ug/L			08/11/16 20:16	1
1,4-Dichlorobenzene	**7.0**		1.0	0.36	ug/L			08/11/16 20:16	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 20:16	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/11/16 20:16	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/11/16 20:16	1
Ethylbenzene	**0.85**		0.50	0.18	ug/L			08/11/16 20:16	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 20:16	1
Isopropylbenzene	**3.0**		1.0	0.39	ug/L			08/11/16 20:16	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 20:16	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/11/16 20:16	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 20:16	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 20:16	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/11/16 20:16	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 20:16	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 20:16	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 20:16	1
Toluene	**0.60**		0.50	0.15	ug/L			08/11/16 20:16	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 20:16	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 20:16	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 20:16	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 20:16	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 20:16	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/11/16 20:16	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 20:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 20:16	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/11/16 20:16	1
Xylenes, Total	**2.1**		1.0	0.22	ug/L			08/11/16 20:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Date Collected: 08/08/16 13:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/11/16 20:16*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*08/11/16 20:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*		*08/11/16 20:16*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/11/16 20:16*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**450**	D	5.0	1.9	ug/L			08/12/16 10:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/12/16 10:09*	*5*
Dibromofluoromethane	*98*		*70 - 120*		*08/12/16 10:09*	*5*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*08/12/16 10:09*	*5*
Toluene-d8 (Surr)	*99*		*75 - 120*		*08/12/16 10:09*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		08/11/16 16:33	08/12/16 18:20	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/11/16 16:33	08/12/16 18:20	1
Acetophenone	<3.7		3.7	0.49	ug/L		08/11/16 16:33	08/12/16 18:20	1
Anthracene	<0.73		0.73	0.24	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		08/11/16 16:33	08/12/16 18:20	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/11/16 16:33	08/12/16 18:20	1
Bis(2-chloroethyl)ether	<1.5	^ J	1.5	0.21	ug/L		08/11/16 16:33	08/12/16 18:20	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		08/11/16 16:33	08/12/16 18:20	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/11/16 16:33	08/12/16 18:20	1
Carbazole	**0.31**	J *	3.7	0.26	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Chloroaniline	<7.3	^	7.3	1.5	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		08/11/16 16:33	08/12/16 18:20	1
Chrysene	<0.37		0.37	0.050	ug/L		08/11/16 16:33	08/12/16 18:20	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		08/11/16 16:33	08/12/16 18:20	1
Dibenzofuran	**0.26**	J	1.5	0.19	ug/L		08/11/16 16:33	08/12/16 18:20	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/11/16 16:33	08/12/16 18:20	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/11/16 16:33	08/12/16 18:20	1
Di-n-butyl phthalate	**0.94**	J	3.7	0.54	ug/L		08/11/16 16:33	08/12/16 18:20	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,6-Dinitrotoluene	**2.2**		0.37	0.054	ug/L		08/11/16 16:33	08/12/16 18:20	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/11/16 16:33	08/12/16 18:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Date Collected: 08/08/16 13:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		08/11/16 16:33	08/12/16 18:20	1
Fluorene	**0.46**	**J**	0.73	0.18	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachlorocyclopentadiene	<15	J	15	4.7	ug/L		08/11/16 16:33	08/12/16 18:20	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/11/16 16:33	08/12/16 18:20	1
Indeno[1,2,3-cd]pyrene	<0.15	*/	0.15	0.055	ug/L		08/11/16 16:33	08/12/16 18:20	1
Isophorone	<1.5		1.5	0.28	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Methylphenol	<1.5		1.5	0.22	ug/L		08/11/16 16:33	08/12/16 18:20	1
3 & 4 Methylphenol	**6.7**		1.5	0.33	ug/L		08/11/16 16:33	08/12/16 18:20	1
Naphthalene	**44**		0.73	0.23	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		08/11/16 16:33	08/12/16 18:20	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		08/11/16 16:33	08/12/16 18:20	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/11/16 16:33	08/12/16 18:20	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/11/16 16:33	08/12/16 18:20	1
4-Nitrophenol	<15	J	15	5.4	ug/L		08/11/16 16:33	08/12/16 18:20	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		08/11/16 16:33	08/12/16 18:20	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,2'-oxybis[1-chloropropane]	<1.5	J	1.5	0.28	ug/L		08/11/16 16:33	08/12/16 18:20	1
Pentachlorophenol	<15		15	2.9	ug/L		08/11/16 16:33	08/12/16 18:20	1
Phenanthrene	**0.26**	**J**	0.73	0.22	ug/L		08/11/16 16:33	08/12/16 18:20	1
Phenol	<3.7		3.7	0.49	ug/L		08/11/16 16:33	08/12/16 18:20	1
Pyrene	<0.73		0.73	0.31	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/11/16 16:33	08/12/16 18:20	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		08/11/16 16:33	08/12/16 18:20	1
Benzaldehyde	<29		29	11	ug/L		08/11/16 16:33	08/12/16 18:20	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/11/16 16:33	08/12/16 18:20	1
Atrazine	<3.7		3.7	0.46	ug/L		08/11/16 16:33	08/12/16 18:20	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		08/11/16 16:33	08/12/16 18:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*57*		*30 - 123*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
Nitrobenzene-d5 (Surr)	*61*		*33 - 139*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
Phenol-d5 (Surr)	*40*		*20 - 100*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
Terphenyl-d14 (Surr)	*89*		*42 - 150*	*08/11/16 16:33*	*08/12/16 18:20*	*1*
2,4,6-Tribromophenol (Surr)	*106*		*30 - 150*	*08/11/16 16:33*	*08/12/16 18:20*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**76**		7.3	0.24	ug/L		08/11/16 16:33	08/19/16 15:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*30 - 123*	*08/11/16 16:33*	*08/19/16 15:17*	*5*
2-Fluorophenol (Surr)	*53*		*30 - 110*	*08/11/16 16:33*	*08/19/16 15:17*	*5*
Nitrobenzene-d5 (Surr)	*60*		*33 - 139*	*08/11/16 16:33*	*08/19/16 15:17*	*5*
Phenol-d5 (Surr)	*37*		*20 - 100*	*08/11/16 16:33*	*08/19/16 15:17*	*5*
Terphenyl-d14 (Surr)	*90*		*42 - 150*	*08/11/16 16:33*	*08/19/16 15:17*	*5*
2,4,6-Tribromophenol (Surr)	*120*		*30 - 150*	*08/11/16 16:33*	*08/19/16 15:17*	*5*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Date Collected: 08/08/16 13:00
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 15:22	1
alpha-BHC	<0.037	* J	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 15:22	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		08/09/16 12:29	08/18/16 15:22	1
beta-BHC	<0.037		0.037	0.0093	ug/L		08/09/16 12:29	08/18/16 15:22	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:22	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 15:22	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		08/09/16 12:29	08/18/16 15:22	1
delta-BHC	<0.037	* J	0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 15:22	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		08/09/16 12:29	08/18/16 15:22	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 15:22	1
gamma-BHC (Lindane)	<0.037	* J	0.037	0.0051	ug/L		08/09/16 12:29	08/18/16 15:22	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/09/16 12:29	08/18/16 15:22	1
Heptachlor	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 15:22	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 15:22	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/09/16 12:29	08/18/16 15:22	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/18/16 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*08/09/16 12:29*	*08/18/16 15:22*	*1*
Tetrachloro-m-xylene	*94*		*30 - 120*	*08/09/16 12:29*	*08/18/16 15:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 10:20	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/09/16 12:29	08/10/16 10:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*30 - 127*	*08/09/16 12:29*	*08/10/16 10:20*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*08/09/16 12:29*	*08/10/16 10:20*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:16	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:16	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:16	1
Barium	**0.30**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:16	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:16	1
Calcium	**90**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:16	1
Chromium	**0.0029**	**J**	0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Lab Sample ID: 500-115433-2

Date Collected: 08/08/16 13:00
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:16	1
Copper	**0.0027**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:16	1
Iron	**33**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:16	1
Magnesium	**46**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:16	1
Manganese	**0.23**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:16	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:16	1
Potassium	**32**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:16	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:16	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:16	1
Sodium	**160**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:16	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:16	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:16	1
Zinc	**0.0098**	**J**	0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:20	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:20	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:20	1
Barium	**0.28**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:20	1
Cadmium	**0.00096**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:20	1
Calcium	**90**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:20	1
Chromium	**0.0029**	**J**	0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:20	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:20	1
Copper	<0.010		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:20	1
Iron	**31**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:31	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:20	1
Magnesium	**45**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:20	1
Manganese	**0.22**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:20	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:20	1
Potassium	**31**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:20	1
Selenium	**0.0052**	**J**	0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:20	1
Sodium	**160**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:20	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:20	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:20	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:07	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-02-GW-08082016

Lab Sample ID: 500-115433-2

Date Collected: 08/08/16 13:00
Matrix: Water
Date Received: 08/08/16 17:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/10/16 08:57	1
Sulfate	<5.0		5.0	1.5	mg/L			08/16/16 09:13	1
Total Organic Carbon - Duplicates	**18**		1.0	0.27	mg/L			08/15/16 23:22	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			08/09/16 11:12	1
Ammonia	**42**	**B**	2.0	0.28	mg/L		08/16/16 12:55	08/17/16 11:47	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:33	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/12/16 20:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016

Lab Sample ID: 500-115433-3

Date Collected: 08/08/16 13:30
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			08/11/16 20:45	10
Benzene	**160**		5.0	1.5	ug/L			08/11/16 20:45	10
Bromodichloromethane	<10		10	3.7	ug/L			08/11/16 20:45	10
Bromoform	<10		10	4.8	ug/L			08/11/16 20:45	10
Bromomethane	<20		20	8.0	ug/L			08/11/16 20:45	10
Carbon disulfide	<20		20	4.5	ug/L			08/11/16 20:45	10
Carbon tetrachloride	<10		10	3.8	ug/L			08/11/16 20:45	10
Chlorobenzene	**5.7**	**J**	10	3.9	ug/L			08/11/16 20:45	10
Chloroethane	<10		10	5.1	ug/L			08/11/16 20:45	10
Chloroform	<10		10	3.7	ug/L			08/11/16 20:45	10
Chloromethane	<10		10	3.2	ug/L			08/11/16 20:45	10
cis-1,2-Dichloroethene	<10		10	4.1	ug/L			08/11/16 20:45	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			08/11/16 20:45	10
Cyclohexane	<10		10	4.9	ug/L			08/11/16 20:45	10
Dibromochloromethane	<10		10	4.9	ug/L			08/11/16 20:45	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			08/11/16 20:45	10
1,2-Dibromoethane	<10		10	3.9	ug/L			08/11/16 20:45	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			08/11/16 20:45	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			08/11/16 20:45	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			08/11/16 20:45	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			08/11/16 20:45	10
1,1-Dichloroethane	<10		10	4.1	ug/L			08/11/16 20:45	10
1,2-Dichloroethane	<10		10	3.9	ug/L			08/11/16 20:45	10
1,1-Dichloroethene	<10		10	3.9	ug/L			08/11/16 20:45	10
1,2-Dichloropropane	<10		10	4.3	ug/L			08/11/16 20:45	10
Ethylbenzene	**34**		5.0	1.8	ug/L			08/11/16 20:45	10
2-Hexanone	<50		50	16	ug/L			08/11/16 20:45	10
Isopropylbenzene	<10		10	3.9	ug/L			08/11/16 20:45	10
Methyl acetate	<50		50	20	ug/L			08/11/16 20:45	10
Methylcyclohexane	<10		10	3.2	ug/L			08/11/16 20:45	10
Methylene Chloride	<50		50	16	ug/L			08/11/16 20:45	10
Methyl Ethyl Ketone	<50		50	21	ug/L			08/11/16 20:45	10
methyl isobutyl ketone	<50		50	22	ug/L			08/11/16 20:45	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			08/11/16 20:45	10
Styrene	<10		10	3.9	ug/L			08/11/16 20:45	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			08/11/16 20:45	10
Tetrachloroethene	<10		10	3.7	ug/L			08/11/16 20:45	10
Toluene	**180**		5.0	1.5	ug/L			08/11/16 20:45	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			08/11/16 20:45	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			08/11/16 20:45	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			08/11/16 20:45	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			08/11/16 20:45	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			08/11/16 20:45	10
Trichloroethene	<5.0		5.0	1.6	ug/L			08/11/16 20:45	10
Trichlorofluoromethane	<10		10	4.3	ug/L			08/11/16 20:45	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			08/11/16 20:45	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			08/11/16 20:45	10
Xylenes, Total	**220**		10	2.2	ug/L			08/11/16 20:45	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016

Date Collected: 08/08/16 13:30
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/11/16 20:45*	*10*
Dibromofluoromethane	*95*		*70 - 120*		*08/11/16 20:45*	*10*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*		*08/11/16 20:45*	*10*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/11/16 20:45*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**18**		0.76	0.24	ug/L		08/09/16 15:52	08/10/16 17:06	1
Acenaphthylene	**2.7**		0.76	0.20	ug/L		08/09/16 15:52	08/10/16 17:06	1
Acetophenone	**1.9**	**J**	3.8	0.51	ug/L		08/09/16 15:52	08/10/16 17:06	1
Anthracene	**12**		0.76	0.25	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[a]anthracene	**0.64**		0.15	0.043	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[b]fluoranthene	**0.39**		0.15	0.061	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[g,h,i]perylene	<0.76		0.76	0.29	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		08/09/16 15:52	08/10/16 17:06	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		08/09/16 15:52	08/10/16 17:06	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		08/09/16 15:52	08/10/16 17:06	1
Bis(2-ethylhexyl) phthalate	<7.6		7.6	1.3	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		08/09/16 15:52	08/10/16 17:06	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Chloroaniline	<7.6	~~*~~ J	7.6	1.5	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Chloro-3-methylphenol	<7.6		7.6	1.8	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		08/09/16 15:52	08/10/16 17:06	1
Chrysene	**0.56**		0.38	0.052	ug/L		08/09/16 15:52	08/10/16 17:06	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		08/09/16 15:52	08/10/16 17:06	1
Dibenzofuran	**34**		1.5	0.20	ug/L		08/09/16 15:52	08/10/16 17:06	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4-Dichlorophenol	<7.6		7.6	2.0	ug/L		08/09/16 15:52	08/10/16 17:06	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		08/09/16 15:52	08/10/16 17:06	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		08/09/16 15:52	08/10/16 17:06	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		08/09/16 15:52	08/10/16 17:06	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4-Dinitrotoluene	<0.76		0.76	0.19	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,6-Dinitrotoluene	<0.38		0.38	0.056	ug/L		08/09/16 15:52	08/10/16 17:06	1
Di-n-octyl phthalate	<7.6		7.6	0.80	ug/L		08/09/16 15:52	08/10/16 17:06	1
Fluoranthene	**7.8**		0.76	0.35	ug/L		08/09/16 15:52	08/10/16 17:06	1
Fluorene	**49**		0.76	0.19	ug/L		08/09/16 15:52	08/10/16 17:06	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		08/09/16 15:52	08/10/16 17:06	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		08/09/16 15:52	08/10/16 17:06	1
Hexachlorocyclopentadiene	~~<15~~	~~*~~ R	~~15~~	~~4.9~~	~~ug/L~~		08/09/16 15:52	08/10/16 17:06	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		08/09/16 15:52	08/10/16 17:06	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		08/09/16 15:52	08/10/16 17:06	1
Isophorone	<1.5		1.5	0.29	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Methylphenol	**27**		1.5	0.23	ug/L		08/09/16 15:52	08/10/16 17:06	1
3 & 4 Methylphenol	**22**		1.5	0.34	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Nitroaniline	<3.8		3.8	0.98	ug/L		08/09/16 15:52	08/10/16 17:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016

Date Collected: 08/08/16 13:30
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-3

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	<7.6		7.6	1.4	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Nitroaniline	<7.6		7.6	1.3	ug/L		08/09/16 15:52	08/10/16 17:06	1
Nitrobenzene	<0.76		0.76	0.34	ug/L		08/09/16 15:52	08/10/16 17:06	1
2-Nitrophenol	<7.6		7.6	1.9	ug/L		08/09/16 15:52	08/10/16 17:06	1
4-Nitrophenol	<15	J	15	5.7	ug/L		08/09/16 15:52	08/10/16 17:06	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		08/09/16 15:52	08/10/16 17:06	1
N-Nitrosodiphenylamine	<0.76		0.76	0.28	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		08/09/16 15:52	08/10/16 17:06	1
Pentachlorophenol	<15	J	15	3.0	ug/L		08/09/16 15:52	08/10/16 17:06	1
Phenol	**4.9**		3.8	0.51	ug/L		08/09/16 15:52	08/10/16 17:06	1
Pyrene	**6.3**		0.76	0.32	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4,5-Trichlorophenol	<7.6		7.6	2.0	ug/L		08/09/16 15:52	08/10/16 17:06	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		08/09/16 15:52	08/10/16 17:06	1
Benzaldehyde	<30		30	12	ug/L		08/09/16 15:52	08/10/16 17:06	1
Caprolactam	<7.6		7.6	1.1	ug/L		08/09/16 15:52	08/10/16 17:06	1
Atrazine	<3.8		3.8	0.48	ug/L		08/09/16 15:52	08/10/16 17:06	1
1,1'-Biphenyl	**20**		3.8	0.28	ug/L		08/09/16 15:52	08/10/16 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
Nitrobenzene-d5 (Surr)	*95*		*33 - 139*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
Phenol-d5 (Surr)	*62*		*20 - 100*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
Terphenyl-d14 (Surr)	*119*		*42 - 150*	*08/09/16 15:52*	*08/10/16 17:06*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*30 - 150*	*08/09/16 15:52*	*08/10/16 17:06*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	**120**	D	19	1.3	ug/L		08/09/16 15:52	08/19/16 14:24	5
2,4-Dimethylphenol	**68**	D	38	6.9	ug/L		08/09/16 15:52	08/19/16 14:24	5
Phenanthrene	**62**	D	3.8	1.1	ug/L		08/09/16 15:52	08/19/16 14:24	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*30 - 123*	*08/09/16 15:52*	*08/19/16 14:24*	*5*
2-Fluorophenol (Surr)	*79*		*30 - 110*	*08/09/16 15:52*	*08/19/16 14:24*	*5*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*08/09/16 15:52*	*08/19/16 14:24*	*5*
Phenol-d5 (Surr)	*55*		*20 - 100*	*08/09/16 15:52*	*08/19/16 14:24*	*5*
Terphenyl-d14 (Surr)	*98*		*42 - 150*	*08/09/16 15:52*	*08/19/16 14:24*	*5*
2,4,6-Tribromophenol (Surr)	*136*		*30 - 150*	*08/09/16 15:52*	*08/19/16 14:24*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**330**	D	38	1.2	ug/L		08/09/16 15:52	08/19/16 13:57	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*08/09/16 15:52*	*08/19/16 13:57*	*25*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*08/09/16 15:52*	*08/19/16 13:57*	*25*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*08/09/16 15:52*	*08/19/16 13:57*	*25*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*08/09/16 15:52*	*08/19/16 13:57*	*25*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*08/09/16 15:52*	*08/19/16 13:57*	*25*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*08/09/16 15:52*	*08/19/16 13:57*	*25*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2000**	D	38	12	ug/L		08/09/16 15:52	08/19/16 14:51	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*08/09/16 15:52*	*08/19/16 14:51*	*50*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*08/09/16 15:52*	*08/19/16 14:51*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*08/09/16 15:52*	*08/19/16 14:51*	*50*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*08/09/16 15:52*	*08/19/16 14:51*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*08/09/16 15:52*	*08/19/16 14:51*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*08/09/16 15:52*	*08/19/16 14:51*	*50*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		08/09/16 12:29	08/18/16 15:41	1
alpha-BHC	<0.038	* J	0.038	0.0025	ug/L		08/09/16 12:29	08/18/16 15:41	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		08/09/16 12:29	08/18/16 15:41	1
beta-BHC	<0.038		0.038	0.0098	ug/L		08/09/16 12:29	08/18/16 15:41	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		08/09/16 12:29	08/18/16 15:41	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		08/09/16 12:29	08/18/16 15:41	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		08/09/16 12:29	08/18/16 15:41	1
delta-BHC	<0.038	* J	0.038	0.0099	ug/L		08/09/16 12:29	08/18/16 15:41	1
Dieldrin	<0.038		0.038	0.012	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endrin	<0.038		0.038	0.014	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		08/09/16 12:29	08/18/16 15:41	1
Endrin ketone	<0.038		0.038	0.016	ug/L		08/09/16 12:29	08/18/16 15:41	1
gamma-BHC (Lindane)	<0.038	* J	0.038	0.0054	ug/L		08/09/16 12:29	08/18/16 15:41	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		08/09/16 12:29	08/18/16 15:41	1
Heptachlor	<0.038		0.038	0.013	ug/L		08/09/16 12:29	08/18/16 15:41	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		08/09/16 12:29	08/18/16 15:41	1
Methoxychlor	<0.077		0.077	0.022	ug/L		08/09/16 12:29	08/18/16 15:41	1
Toxaphene	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/18/16 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*08/09/16 12:29*	*08/18/16 15:41*	*1*
Tetrachloro-m-xylene	*112*		*30 - 120*	*08/09/16 12:29*	*08/18/16 15:41*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1221	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1232	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1242	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1248	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1254	<0.38		0.38	0.19	ug/L		08/09/16 12:29	08/10/16 10:35	1
PCB-1260	<0.38		0.38	0.067	ug/L		08/09/16 12:29	08/10/16 10:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*08/09/16 12:29*	*08/10/16 10:35*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 150*	*08/09/16 12:29*	*08/10/16 10:35*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-03-GW-08082016

Lab Sample ID: 500-115433-3

Date Collected: 08/08/16 13:30
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:32	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:32	1
Barium	**0.89**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:32	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:32	1
Calcium	**65**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:32	1
Chromium	**0.0024**	**J**	0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:32	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:32	1
Copper	**0.0033**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:32	1
Iron	**6.4**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:35	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:32	1
Magnesium	**75**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:32	1
Manganese	**0.18**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:32	1
Nickel	**0.0048**	**J**	0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:32	1
Potassium	**56**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:32	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:32	1
Sodium	**250**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:32	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:32	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:32	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:38	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:38	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:38	1
Barium	**0.88**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:38	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:38	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:38	1
Calcium	**66**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:38	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:38	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:38	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:38	1
Iron	**5.5**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:38	1
Magnesium	**75**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:38	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:38	1
Nickel	**0.0043**	**J**	0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:38	1
Potassium	**55**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:38	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:38	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:38	1
Sodium	**250**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:38	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:38	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:38	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/10/16 09:00	1
Sulfate	**10**	~~B~~ UB	5.0	1.5	mg/L			08/16/16 09:17	1
Total Organic Carbon - Duplicates	**21**		1.0	0.27	mg/L			08/16/16 05:58	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**8.0**		5.0	2.5	mg/L			08/09/16 11:14	1
Ammonia	**38**	~~B~~	2.0	0.28	mg/L		08/16/16 12:55	08/17/16 11:50	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:33	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/12/16 20:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20
Matrix: Water
Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**15**		5.0	1.7	ug/L			08/11/16 21:14	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 21:14	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 21:14	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 21:14	1
Carbon disulfide	**28**		2.0	0.45	ug/L			08/11/16 21:14	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 21:14	1
Chlorobenzene	**0.68**	**J**	1.0	0.39	ug/L			08/11/16 21:14	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/11/16 21:14	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 21:14	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 21:14	1
cis-1,2-Dichloroethene	**6.3**		1.0	0.41	ug/L			08/11/16 21:14	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 21:14	1
Cyclohexane	**1.3**		1.0	0.49	ug/L			08/11/16 21:14	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 21:14	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 21:14	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/11/16 21:14	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/11/16 21:14	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/11/16 21:14	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 21:14	1
1,1-Dichloroethane	**22**		1.0	0.41	ug/L			08/11/16 21:14	1
1,2-Dichloroethane	**30**		1.0	0.39	ug/L			08/11/16 21:14	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
1,2-Dichloropropane	**1.3**		1.0	0.43	ug/L			08/11/16 21:14	1
Ethylbenzene	**4.9**		0.50	0.18	ug/L			08/11/16 21:14	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 21:14	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 21:14	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/11/16 21:14	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 21:14	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 21:14	1
methyl isobutyl ketone	**14**		5.0	2.2	ug/L			08/11/16 21:14	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 21:14	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 21:14	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 21:14	1
Toluene	**19**		0.50	0.15	ug/L			08/11/16 21:14	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 21:14	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 21:14	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 21:14	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 21:14	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 21:14	1
Trichloroethene	**1.0**		0.50	0.16	ug/L			08/11/16 21:14	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 21:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 21:14	1
Vinyl chloride	**5.6**		0.50	0.20	ug/L			08/11/16 21:14	1
Xylenes, Total	**4.3**		1.0	0.22	ug/L			08/11/16 21:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Date Collected: 08/08/16 15:20
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*08/11/16 21:14*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*08/11/16 21:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*08/11/16 21:14*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*08/11/16 21:14*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**510**	D	5.0	1.5	ug/L			08/11/16 21:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*08/11/16 21:42*	*10*
Dibromofluoromethane	*98*		*70 - 120*		*08/11/16 21:42*	*10*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*		*08/11/16 21:42*	*10*
Toluene-d8 (Surr)	*101*		*75 - 120*		*08/11/16 21:42*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		08/09/16 15:52	08/10/16 17:34	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/09/16 15:52	08/10/16 17:34	1
Acetophenone	<3.7		3.7	0.49	ug/L		08/09/16 15:52	08/10/16 17:34	1
Anthracene	<0.73		0.73	0.24	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[a]pyrene	<0.15	* J	0.15	0.072	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[b]fluoranthene	<0.15	* J	0.15	0.059	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[g,h,i]perylene	<0.73	* J	0.73	0.27	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzo[k]fluoranthene	<0.15	* J	0.15	0.047	ug/L		08/09/16 15:52	08/10/16 17:34	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/10/16 17:34	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/10/16 17:34	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.39	ug/L		08/09/16 15:52	08/10/16 17:34	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/09/16 15:52	08/10/16 17:34	1
Carbazole	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Chloroaniline	<7.3	* J	7.3	1.5	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/10/16 17:34	1
Chrysene	<0.37		0.37	0.050	ug/L		08/09/16 15:52	08/10/16 17:34	1
Dibenz(a,h)anthracene	<0.22	* J	0.22	0.037	ug/L		08/09/16 15:52	08/10/16 17:34	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		08/09/16 15:52	08/10/16 17:34	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/10/16 17:34	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dimethylphenol	**25**		7.3	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/09/16 15:52	08/10/16 17:34	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		08/09/16 15:52	08/10/16 17:34	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,6-Dinitrotoluene	<0.37		0.37	0.054	ug/L		08/09/16 15:52	08/10/16 17:34	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/09/16 15:52	08/10/16 17:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Date Collected: 08/08/16 15:20
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/10/16 17:34	1
Fluorene	<0.73		0.73	0.18	ug/L		08/09/16 15:52	08/10/16 17:34	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		08/09/16 15:52	08/10/16 17:34	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/09/16 15:52	08/10/16 17:34	1
Hexachlorocyclopentadiene	~~<15~~	~~* R~~	~~15~~	~~4.7~~	~~ug/L~~		08/09/16 15:52	08/10/16 17:34	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/09/16 15:52	08/10/16 17:34	1
Indeno[1,2,3-cd]pyrene	<0.15	~~*~~ J	0.15	0.055	ug/L		08/09/16 15:52	08/10/16 17:34	1
Isophorone	<1.5		1.5	0.27	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Methylnaphthalene	**0.25**	**J**	1.5	0.048	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Methylphenol	**7.6**		1.5	0.22	ug/L		08/09/16 15:52	08/10/16 17:34	1
3 & 4 Methylphenol	**8.0**		1.5	0.33	ug/L		08/09/16 15:52	08/10/16 17:34	1
Naphthalene	**1.5**		0.73	0.23	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		08/09/16 15:52	08/10/16 17:34	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		08/09/16 15:52	08/10/16 17:34	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/09/16 15:52	08/10/16 17:34	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/09/16 15:52	08/10/16 17:34	1
4-Nitrophenol	<15	J	15	5.4	ug/L		08/09/16 15:52	08/10/16 17:34	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		08/09/16 15:52	08/10/16 17:34	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/09/16 15:52	08/10/16 17:34	1
Pentachlorophenol	<15	J	15	2.9	ug/L		08/09/16 15:52	08/10/16 17:34	1
Phenanthrene	<0.73		0.73	0.22	ug/L		08/09/16 15:52	08/10/16 17:34	1
Phenol	**1.7**	**J**	3.7	0.49	ug/L		08/09/16 15:52	08/10/16 17:34	1
Pyrene	<0.73		0.73	0.31	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/09/16 15:52	08/10/16 17:34	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		08/09/16 15:52	08/10/16 17:34	1
Benzaldehyde	<29		29	11	ug/L		08/09/16 15:52	08/10/16 17:34	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/09/16 15:52	08/10/16 17:34	1
Atrazine	<3.7		3.7	0.46	ug/L		08/09/16 15:52	08/10/16 17:34	1
1,1'-Biphenyl	<3.7		3.7	0.26	ug/L		08/09/16 15:52	08/10/16 17:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*30 - 123*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
2-Fluorophenol (Surr)	*77*		*30 - 110*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
Nitrobenzene-d5 (Surr)	*79*		*33 - 139*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
Phenol-d5 (Surr)	*59*		*20 - 100*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
Terphenyl-d14 (Surr)	*118*		*42 - 150*	*08/09/16 15:52*	*08/10/16 17:34*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*30 - 150*	*08/09/16 15:52*	*08/10/16 17:34*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 16:19	1
alpha-BHC	<0.037	~~*~~ J	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 16:19	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		08/09/16 12:29	08/18/16 16:19	1
beta-BHC	<0.037		0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 16:19	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:19	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 16:19	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		08/09/16 12:29	08/18/16 16:19	1
delta-BHC	<0.037	~~*~~ J	0.037	0.0094	ug/L		08/09/16 12:29	08/18/16 16:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Date Collected: 08/08/16 15:20
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		08/09/16 12:29	08/18/16 16:19	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 16:19	1
gamma-BHC (Lindane)	<0.037	* J	0.037	0.0051	ug/L		08/09/16 12:29	08/18/16 16:19	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/09/16 12:29	08/18/16 16:19	1
Heptachlor	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:19	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:19	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/09/16 12:29	08/18/16 16:19	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/18/16 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*08/09/16 12:29*	*08/18/16 16:19*	*1*
Tetrachloro-m-xylene	*365*	*X*	*30 - 120*	*08/09/16 12:29*	*08/18/16 16:19*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1016	<0.37		0.37	0.061	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1242	**0.65**		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1242	**0.69**		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/09/16 12:29	08/10/16 16:02	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/09/16 12:29	08/10/16 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*78*		*30 - 127*	*08/09/16 12:29*	*08/10/16 16:02*	*1*
Tetrachloro-m-xylene	*78*		*30 - 127*	*08/09/16 12:29*	*08/10/16 16:02*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*08/09/16 12:29*	*08/10/16 16:02*	*1*
DCB Decachlorobiphenyl	*74*		*30 - 150*	*08/09/16 12:29*	*08/10/16 16:02*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:43	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:43	1
Arsenic	**0.0083**	**J**	0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:43	1
Barium	**0.068**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:43	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:43	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:43	1
Calcium	**91**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:43	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:43	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:43	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:43	1
Iron	<0.20		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:46	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:43	1
Magnesium	**31**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:43	1
Manganese	**0.42**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:43	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:43	1
Potassium	**14**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:43	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:43	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:43	1
Sodium	**330**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:43	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:43	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:43	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:48	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:48	1
Arsenic	**0.0098**	**J**	0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:48	1
Barium	**0.069**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:48	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:48	1
Calcium	**92**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:48	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:48	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:48	1
Iron	<0.20		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:51	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:48	1
Magnesium	**33**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:48	1
Manganese	**0.40**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:48	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:48	1
Potassium	**15**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:48	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:48	1
Sodium	**350**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:48	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:48	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-04-GW-08082016

Lab Sample ID: 500-115433-4

Date Collected: 08/08/16 15:20
Matrix: Water
Date Received: 08/08/16 17:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**12**		1.0	0.18	mg/L			08/10/16 09:04	1
Sulfate	**250**	~~B~~	50	15	mg/L			08/17/16 06:47	10
Total Organic Carbon - Duplicates	**19**		1.0	0.27	mg/L			08/15/16 23:55	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	<5.0		5.0	2.5	mg/L			08/09/16 11:16	1
Ammonia	**9.6**	~~B~~	1.0	0.14	mg/L		08/16/16 12:55	08/17/16 11:53	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:34	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 20:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**11**		5.0	1.7	ug/L			08/11/16 22:10	1
Benzene	**0.25**	**J**	0.50	0.15	ug/L			08/11/16 22:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/11/16 22:10	1
Bromoform	<1.0		1.0	0.48	ug/L			08/11/16 22:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/11/16 22:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/11/16 22:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/11/16 22:10	1
Chlorobenzene	**4.2**		1.0	0.39	ug/L			08/11/16 22:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/11/16 22:10	1
Chloroform	<1.0		1.0	0.37	ug/L			08/11/16 22:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/11/16 22:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/11/16 22:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/11/16 22:10	1
Cyclohexane	**1.8**		1.0	0.49	ug/L			08/11/16 22:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/11/16 22:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/11/16 22:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/11/16 22:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/11/16 22:10	1
1,4-Dichlorobenzene	**2.1**		1.0	0.36	ug/L			08/11/16 22:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/11/16 22:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/11/16 22:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/11/16 22:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/11/16 22:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/11/16 22:10	1
Isopropylbenzene	**40**		1.0	0.39	ug/L			08/11/16 22:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/11/16 22:10	1
Methylcyclohexane	**0.55**	**J**	1.0	0.32	ug/L			08/11/16 22:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/11/16 22:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/11/16 22:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/11/16 22:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
Styrene	<1.0		1.0	0.39	ug/L			08/11/16 22:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/11/16 22:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/11/16 22:10	1
Toluene	<0.50		0.50	0.15	ug/L			08/11/16 22:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/11/16 22:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/11/16 22:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/11/16 22:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/11/16 22:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/11/16 22:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/11/16 22:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/11/16 22:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/11/16 22:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/11/16 22:10	1
Xylenes, Total	**0.64**	**J**	1.0	0.22	ug/L			08/11/16 22:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Date Collected: 08/08/16 15:40
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/11/16 22:10*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*08/11/16 22:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*08/11/16 22:10*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*08/11/16 22:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.29**	**J**	0.76	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
Acenaphthylene	<0.76		0.76	0.20	ug/L		08/09/16 15:52	08/12/16 19:13	1
Acetophenone	<3.8		3.8	0.50	ug/L		08/09/16 15:52	08/12/16 19:13	1
Anthracene	<0.76		0.76	0.25	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[g,h,i]perylene	<0.76		0.76	0.28	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		08/09/16 15:52	08/12/16 19:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/09/16 15:52	08/12/16 19:13	1
Bis(2-chloroethyl)ether	<1.5	~~^~~ J	1.5	0.22	ug/L		08/09/16 15:52	08/12/16 19:13	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	7.6	1.3	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		08/09/16 15:52	08/12/16 19:13	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		08/09/16 15:52	08/12/16 19:13	1
Carbazole	<3.8		3.8	0.27	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Chloroaniline	<7.6	~~^ *~~ J	7.6	1.5	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Chloro-3-methylphenol	<7.6		7.6	1.7	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Chloronaphthalene	**0.22**	**J**	1.5	0.18	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		08/09/16 15:52	08/12/16 19:13	1
Chrysene	<0.38		0.38	0.052	ug/L		08/09/16 15:52	08/12/16 19:13	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		08/09/16 15:52	08/12/16 19:13	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		08/09/16 15:52	08/12/16 19:13	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dichlorophenol	<7.6		7.6	2.0	ug/L		08/09/16 15:52	08/12/16 19:13	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dimethylphenol	<7.6		7.6	1.4	ug/L		08/09/16 15:52	08/12/16 19:13	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		08/09/16 15:52	08/12/16 19:13	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		08/09/16 15:52	08/12/16 19:13	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4-Dinitrotoluene	<0.76		0.76	0.19	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,6-Dinitrotoluene	<0.38		0.38	0.056	ug/L		08/09/16 15:52	08/12/16 19:13	1
Di-n-octyl phthalate	<7.6		7.6	0.79	ug/L		08/09/16 15:52	08/12/16 19:13	1
Fluoranthene	<0.76		0.76	0.34	ug/L		08/09/16 15:52	08/12/16 19:13	1
Fluorene	<0.76		0.76	0.18	ug/L		08/09/16 15:52	08/12/16 19:13	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		08/09/16 15:52	08/12/16 19:13	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		08/09/16 15:52	08/12/16 19:13	1
Hexachlorocyclopentadiene	~~<15~~	~~*~~ R	~~15~~	~~4.8~~	~~ug/L~~		08/09/16 15:52	08/12/16 19:13	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		08/09/16 15:52	08/12/16 19:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		08/09/16 15:52	08/12/16 19:13	1
Isophorone	<1.5		1.5	0.28	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Methylnaphthalene	**0.46**	**J**	1.5	0.049	ug/L		08/09/16 15:52	08/12/16 19:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Date Collected: 08/08/16 15:40
Date Received: 08/08/16 17:45

Lab Sample ID: 500-115433-5

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		08/09/16 15:52	08/12/16 19:13	1
Naphthalene	**0.33**	**J**	0.76	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		08/09/16 15:52	08/12/16 19:13	1
3-Nitroaniline	<7.6		7.6	1.4	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Nitroaniline	<7.6		7.6	1.3	ug/L		08/09/16 15:52	08/12/16 19:13	1
Nitrobenzene	<0.76		0.76	0.34	ug/L		08/09/16 15:52	08/12/16 19:13	1
2-Nitrophenol	<7.6		7.6	1.9	ug/L		08/09/16 15:52	08/12/16 19:13	1
4-Nitrophenol	<15	J	15	5.6	ug/L		08/09/16 15:52	08/12/16 19:13	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		08/09/16 15:52	08/12/16 19:13	1
N-Nitrosodiphenylamine	**1.0**		0.76	0.28	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,2'-oxybis[1-chloropropane]	**0.32**	**J**	1.5	0.29	ug/L		08/09/16 15:52	08/12/16 19:13	1
Pentachlorophenol	<15		15	3.0	ug/L		08/09/16 15:52	08/12/16 19:13	1
Phenanthrene	<0.76		0.76	0.23	ug/L		08/09/16 15:52	08/12/16 19:13	1
Phenol	<3.8		3.8	0.51	ug/L		08/09/16 15:52	08/12/16 19:13	1
Pyrene	<0.76		0.76	0.32	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4,5-Trichlorophenol	<7.6		7.6	1.9	ug/L		08/09/16 15:52	08/12/16 19:13	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		08/09/16 15:52	08/12/16 19:13	1
Benzaldehyde	<30		30	11	ug/L		08/09/16 15:52	08/12/16 19:13	1
Caprolactam	<7.6		7.6	1.1	ug/L		08/09/16 15:52	08/12/16 19:13	1
Atrazine	<3.8		3.8	0.47	ug/L		08/09/16 15:52	08/12/16 19:13	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		08/09/16 15:52	08/12/16 19:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
2-Fluorophenol (Surr)	*73*		*30 - 110*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
Nitrobenzene-d5 (Surr)	*76*		*33 - 139*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
Phenol-d5 (Surr)	*49*		*20 - 100*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*08/09/16 15:52*	*08/12/16 19:13*	*1*
2,4,6-Tribromophenol (Surr)	*107*		*30 - 150*	*08/09/16 15:52*	*08/12/16 19:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/09/16 12:29	08/18/16 16:00	1
alpha-BHC	<0.037	* J	0.037	0.0024	ug/L		08/09/16 12:29	08/18/16 16:00	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/09/16 12:29	08/18/16 16:00	1
beta-BHC	<0.037		0.037	0.0095	ug/L		08/09/16 12:29	08/18/16 16:00	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:00	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/09/16 12:29	08/18/16 16:00	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/09/16 12:29	08/18/16 16:00	1
delta-BHC	<0.037	* J	0.037	0.0096	ug/L		08/09/16 12:29	08/18/16 16:00	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endrin	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		08/09/16 12:29	08/18/16 16:00	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/09/16 12:29	08/18/16 16:00	1
gamma-BHC (Lindane)	<0.037	* J	0.037	0.0052	ug/L		08/09/16 12:29	08/18/16 16:00	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		08/09/16 12:29	08/18/16 16:00	1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40

Matrix: Water

Date Received: 08/08/16 17:45

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:00	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/09/16 12:29	08/18/16 16:00	1
Methoxychlor	<0.074		0.074	0.021	ug/L		08/09/16 12:29	08/18/16 16:00	1
Toxaphene	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/18/16 16:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*57*		*30 - 143*	*08/09/16 12:29*	*08/18/16 16:00*	*1*
Tetrachloro-m-xylene	*85*		*30 - 120*	*08/09/16 12:29*	*08/18/16 16:00*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1221	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1232	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1242	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1248	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1254	<0.37		0.37	0.19	ug/L		08/09/16 12:29	08/10/16 11:06	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/09/16 12:29	08/10/16 11:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*30 - 127*	*08/09/16 12:29*	*08/10/16 11:06*	*1*
DCB Decachlorobiphenyl	*69*		*30 - 150*	*08/09/16 12:29*	*08/10/16 11:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.078**	**J**	0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:53	1
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:53	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:53	1
Barium	**0.85**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:53	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:53	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:53	1
Calcium	**63**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:53	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:53	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:53	1
Copper	**0.0035**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:53	1
Iron	**20**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 17:56	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:53	1
Magnesium	**80**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:53	1
Manganese	**0.055**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:53	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:53	1
Potassium	**42**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:53	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:53	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:53	1
Sodium	**150**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:53	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:53	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:53	1
Zinc	**0.0099**	**J**	0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/09/16 15:09	08/10/16 16:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115433-1

Client Sample ID: MW-05-GW-08082016

Lab Sample ID: 500-115433-5

Date Collected: 08/08/16 15:40
Matrix: Water
Date Received: 08/08/16 17:45

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/09/16 15:09	08/10/16 16:58	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:58	1
Barium	**0.89**		0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:58	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/09/16 15:09	08/10/16 16:58	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/09/16 15:09	08/10/16 16:58	1
Calcium	**68**		0.20	0.059	mg/L		08/09/16 15:09	08/10/16 16:58	1
Chromium	<0.010		0.010	0.0024	mg/L		08/09/16 15:09	08/10/16 16:58	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/09/16 15:09	08/10/16 16:58	1
Copper	**0.0024**	**J**	0.010	0.0022	mg/L		08/09/16 15:09	08/10/16 16:58	1
Iron	**21**		0.20	0.10	mg/L		08/09/16 15:09	08/12/16 18:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/09/16 15:09	08/10/16 16:58	1
Magnesium	**84**		0.10	0.041	mg/L		08/09/16 15:09	08/10/16 16:58	1
Manganese	**0.057**		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:58	1
Nickel	<0.010		0.010	0.0037	mg/L		08/09/16 15:09	08/10/16 16:58	1
Potassium	**44**		0.50	0.16	mg/L		08/09/16 15:09	08/10/16 16:58	1
Selenium	<0.010		0.010	0.0051	mg/L		08/09/16 15:09	08/10/16 16:58	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/09/16 15:09	08/10/16 16:58	1
Sodium	**150**		1.0	0.43	mg/L		08/09/16 15:09	08/10/16 16:58	1
Thallium	<0.010		0.010	0.0034	mg/L		08/09/16 15:09	08/10/16 16:58	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/09/16 15:09	08/10/16 16:58	1
Zinc	<0.020		0.020	0.0090	mg/L		08/09/16 15:09	08/10/16 16:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:16	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/09/16 12:45	08/10/16 09:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/10/16 09:08	1
Sulfate	5.0 ~~2.8~~	~~J B~~ UB	5.0	1.5	mg/L			08/17/16 06:48	1
Total Organic Carbon - Duplicates	**19**		1.0	0.27	mg/L			08/16/16 00:11	1
Nitrogen, Nitrate	**0.42**		0.10	0.035	mg/L			08/17/16 17:15	1
Total Suspended Solids	**39**		5.0	2.5	mg/L			08/09/16 11:18	1
Ammonia	**54**	~~B~~	5.0	0.71	mg/L		08/16/16 12:55	08/17/16 12:54	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/09/16 21:34	1
Nitrogen, Nitrate Nitrite	**0.42**		0.10	0.035	mg/L			08/16/16 20:08	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19878

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

WO 19878

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76560.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115433-2
Address: 220 William Pitt Way, ,	Due Date Requested: 8/18/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-01-GW-08082016 (500-115433-1)	8/8/16	11:00 Central		Water			X	2	
MW-02-GW-08082016 (500-115433-2)	8/8/16	13:00 Central		Water			X	2	
MW-03-GW-08082016 (500-115433-3)	8/8/16	13:30 Central		Water			X	2	
MW-04-GW-08082016 (500-115433-4)	8/8/16	15:20 Central		Water			X	2	
MW-05-GW-08082016 (500-115433-5)	8/8/16	15:40 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

1.2°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 08/09/16 1400	Company TA	Received by: PAS	Date/Time: 8.10.16 1100	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19878

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

WO 19878

17 of 130
09/26/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76651.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115433-2
Address: 220 William Pitt Way, ,	Due Date Requested: 8/18/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - ~~Methane~~, Carbon Dioxide, ~~Oxygen~~ and ~~Nitrogen~~)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-01-GW-08082016 (500-115433-1)	8/8/16	11:00 Central		Water			X	1	
MW-02-GW-08082016 (500-115433-2)	8/8/16	13:00 Central		Water			X	1	
MW-03-GW-08082016 (500-115433-3)	8/8/16	13:30 Central		Water			X	1	
MW-04-GW-08082016 (500-115433-4)	8/8/16	15:20 Central		Water			X	1	
MW-05-GW-08082016 (500-115433-5)	8/8/16	15:40 Central		Water			X	1	

Page 21 of 247

Possible Hazard Identification
Unconfirmed 0.5°C

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:		
Relinquished by:	Date/Time: 08/10/16 1600	Company TA	Received by:	Date/Time: 8.11.16 1100	Company PAS	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 19878 500-115433-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780001** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-01-GW-08082016** Date Collected: 8/8/2016 11:00

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**11000**	ug/l	J	0.50	0.027	1	8/17/2016 05:31	TD	n
Carbon Dioxide	~~**<5.0**~~	~~mg/l~~	R	~~5.0~~	~~0.24~~	~~1~~	8/13/2016 14:38	TD	n
Oxygen	**4.1**	mg/l	J	0.50	0.13	1	8/17/2016 05:31	TD	n
Nitrogen	**9.5**	mg/l	J	2.0	0.24	1	8/17/2016 05:31	TD	n

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780002** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-02-GW-08082016** Date Collected: 8/8/2016 13:00

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**20000**	ug/l	J	0.50	0.027	1	8/17/2016 05:44	TD	n
Carbon Dioxide	**240**	mg/l	J	5.0	0.24	1	8/13/2016 14:51	TD	n
Oxygen	**1.4**	mg/l	J	0.50	0.13	1	8/17/2016 05:44	TD	n
Nitrogen	**4.1**	mg/l	J	2.0	0.24	1	8/17/2016 05:44	TD	n

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780003** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-03-GW-08082016** Date Collected: 8/8/2016 13:30

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**24000**	ug/l	J	0.50	0.027	1	8/17/2016 05:58	TD	n
Carbon Dioxide	**36**	mg/l	J	5.0	0.24	1	8/13/2016 15:05	TD	n
Oxygen	**1.3**	mg/l	J	0.50	0.13	1	8/17/2016 05:58	TD	n
Nitrogen	**4.8**	mg/l	J	2.0	0.24	1	8/17/2016 05:58	TD	n

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ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780004** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-04-GW-08082016** Date Collected: 8/8/2016 15:20

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**17000**	ug/l	J	0.50	0.027	1	8/17/2016 06:11	TD	n
Carbon Dioxide	~~**<5.0**~~	~~mg/l~~	R	~~5.0~~	~~0.24~~	~~1~~	8/13/2016 15:19	TD	n
Oxygen	**0.99**	mg/l	J	0.50	0.13	1	8/17/2016 06:11	TD	n
Nitrogen	**8.2**	mg/l	J	2.0	0.24	1	8/17/2016 06:11	TD	n

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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 19878 500-115433-2

Lab ID: **198780005** Date Received: 8/10/2016 11:00 Matrix: Water

Sample ID: **MW-05-GW-08082016** Date Collected: 8/8/2016 15:40

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**21000**	ug/l	J	0.50	0.027	1	8/17/2016 06:24	TD	n
Carbon Dioxide	**270**	mg/l	J	5.0	0.24	1	8/13/2016 15:33	TD	n
Oxygen	**1.2**	mg/l	J	0.50	0.13	1	8/17/2016 06:24	TD	n
Nitrogen	**4.6**	mg/l	J	2.0	0.24	1	8/17/2016 06:24	TD	n

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Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile, Dissolved Gases, Semivolatile, Pesticides, PCBs,

Metals and General Chemistry Analyses

SDG #500-115474-1 (Rev 1) and 500-115474-2

Analyses Performed By:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #26313
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #500-115474-1 (Rev1) and 50-115474-2 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC/ DISS GASES	SVOC	PEST/ PCB	MET	MISC
MW-06-GW-08092016	500-115474-1	Water	08/09/2016		X	X	X	X	X
MW-07-GW-08092016	500-115474-2	Water	08/09/2016		X	X	X	X	X
MW-08-GW-08092016	500-115474-3	Water	08/09/2016		X	X	X	X	X
MW-09-GW-08092016	500-115474-4	Water	08/09/2016		X	X	X	X	X
MW-10-GW-08092016	500-115474-5	Water	08/09/2016		X	X	X	X	X
MW-11-GW-08092016	500-115474-6	Water	08/09/2016		X	X	X	X	X
MW-13-GW-08092016	500-115474-7	Water	08/09/2016		X	X	X	X	X
DUP-1(08092016)	500-115474-8	Water	08/09/2016	MW-13-GW-08092016	X	X	X	X	X
DUP-2(08092016)	500-115474-9	Water	08/09/2016	MW-06-GW-08092016	X	X	X	X	X
COMPOSITE DRUM SAMPLE	500-115474-10	Water	08/09/2016		X				X

Notes:

1. Sample location COMPOSITE DRUM SAMPLE was included on the chain of custody with no analysis requested. VOC, Flashpoint and pH Analysis were performed.

2. MISC-Miscellaneous parameters: Sulfate, Sulfide, Total organic carbon (TOC), Total suspended solids (TSS), Ammonia, Nitrogen/Nitrite, Nitrogen/Nitrate and Nitrogen, Nitrate-Nitrite.

3. Dissolved gases analysis was sub-contracted out to Pace/Microseeps, located in Pittsburg, Pennsylvania (SDG number 19879).

4. Dissolved gas vials received form Pace/Microseeps for the analysis of methane, oxygen, carbon dioxide and nitrogen were determined TestAmerica laboratory to be the wrong vials after collection. The correct vials should have been 40 ml vials with Benzylakonium Chloride as a

preservative. Instead, the lab had shipped 40 ml vials with Trisodium Phosphate as a preservative.

Based on the recommendation of the Pace/Microseeps Technical Director, it was determined that analysis for methane, oxygen and nitrogen would not be affected by the presence of Trisodium phosphate, and the submitted vials could be tested for 3 out of the 4 dissolved gases. However, the Trisodium phosphate would have an effect on the carbon dioxide result since it would lower the pH of the vial, and CO2 would be lost. TestAmerica shipped an extra unopened 250 ml amber glass unpreserved sample to Pace/Microseeps for analysis of the carbon dioxide.

5. A matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample location MW-08-GW-08092016 for VOC analysis; sample location MW-06-GW-08092016 for Mercury analysis; sample location MW-11-GW-08092016 for Sulfate analysis, sample location MW-06-GW-08092016 for Sulfide analysis; and, sample location MW-08-GW-08092016 for TOC analysis.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

Note:
QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, 8081B, 8082A and AM20GAx (Dissolved gases). Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:

s.u. Standard units

The chain of custody documents preservation of HCL was used in the VOC sample vials. However, the pH of all samples was above the required criteria. Samples were analyzed within the 7 day hold time for unpreserved samples

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-06-GW-08092016 MW-07-GW-08092016 MW-08-GW-08092016 MW-09-GW-08092016 MW-10-GW-08092016 MW-11-GW-08092016 MW-13-GW-08092016	CCV %D	Bromomethane	-25.6%
		Methyl acetate	+22.5%
DUP-1(08092016) DUP-2(08092016) COMPOSITE DRUM SAMPLE		1,2-Dibromo-3-chloropropane	-22.0%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration		Non-detect	UJ

Initial/Continuing	Criteria	Sample Result	Qualification
	%RSD > 15% or a correlation coefficient <0.99	Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-06-GW-08092016/ DUP-2(08092016)	Acetone	66	46	35.7%
	Benzene	6.0	6.0	0%
	Carbon disulfide	1.1 J	0.71 J	AC
	cis-1,2-Dichloroethene	4.3	4.3	AC
	1,2-Dichlorobenzene	2.1	1.9	AC
	1,4-Dichlorobenzene	13	13	0%
	1,2-Dichloroethane	1.6	1.5	AC
	Ethylbenzene	86	85	1.2%
	Isopropylbenzene	5.0	5.0	AC
	Methyl ethyl ketone	25	21	17.4%
	Methyl isobutyl ketone	28	27	3.6%
	Toluene	160	160	0%
	Vinyl chloride	3.6	3.3	8.7%
	Xylenes, Total	340	310	9.2%
MW-13-GW-08092016/ DUP-1(08092016)	Acetone	30	38	AC
	Benzene	430	390	9.8%
	Chlorobenzene	3.1 j	3.2 J	AC
	cis-1,2-Dichloroethene	43	34	23.4%
	1,2-Dichlorobenzene	12	13	AC
	1,1-Dichloroethane	19	16	AC
	Isopropylbenzene	75	100	28.6%
	Trichloroethene	3.7	3.6	AC

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Vinyl chloride	10	11	9.5%
	Ethyl benzene	1200	1400	15.4%
	Toluene	2800	2700	3.6%
	Xylenes, Total	8200	9800	17.8%

Notes:

AC Acceptable

The compound acetone associated with samples locations MW-06-GW-08092016 and DUP-2(08092016) exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-06-GW-08092016	Xylenes, Total	--	340 D	340 D
MW-07-GW-08092016	Toluene	--	420 D	420 D
	Xylenes, Total	--	760 D	760 D
MW-13-GW-08092016	Ethyl benzene	--	1200 D	1200 D
	Toluene	--	2800 D	2800 D
	Xylenes, Total	--	8200 D	8200 D
DUP-1(08092016)	Ethyl benzene	--	1400 D	1400 D
	Toluene	--	2700 D	2700 D
	Xylenes, Total	--	9800 D	9800 D
DUP-2(08092016)	Xylenes, Total	--	310 D	310 D
Composite Drum Sample	Toluene	--	270 D	270 D
	Xylenes, Total	--	560 D	560 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)		X		X	
Matrix Spike Duplicate(MSD)		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DISSOLVED GASES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
AM20GAx (methane, oxygen and nitrogen)	Water	14 days from collection to analysis	Cool to <6 °C; preserved with Trisodium phosphate (TSP) to a pH of >10 s.u.
AM20GAx (carbon dioxide)			Cool to <6 °C; preserved with Benzylakonium Chloride (BAK).

Note:

s.u. Standard units

Notes:

1. According to the case narrative, dissolved gas vials received from Pace/Microseeps for the analysis of Dissolved Gases (methane, oxygen, carbon dioxide and nitrogen) were determined (by TestAmerica laboratory) to be the wrong vials after collection. The correct vials should have been 40 ml vials with Benzylakonium Chloride (BAK) as a preservative. Instead, the lab had shipped 40 ml vials with Trisodium Phosphate (TSP) as a preservative.

   Based on the recommendation of the Pace/Microseeps Technical Director, it was determined that analysis for methane, oxygen and nitrogen would not be affected by the presence of TSP, and the submitted vials could be tested for 3 out of the 4 dissolved gases. However, the TSP would have an effect on the carbon dioxide result since it would lower the pH of the vial, and CO2 would be lost. TestAmerica shipped an extra unopened 250 ml amber glass unpreserved sample to Pace/Microseeps for analysis of the carbon dioxide. Upon analysis the 250 ml amber glass sample bottles were preserved with BAK at the Pace/Microseeps laboratory.

2. Based upon the Pace/Microseeps case narrative, a walk-in cooler malfunctioned at the lab which contained all the samples containers associated with this SDG. Upon discovery of the malfunction the samples were moved to an operating walk-in cooler. A temperature of 20 °C was recorded.

The analyses that exceeded the holding are presented in the following table.

Sample Locations	Temperature	Criteria
MW-06-GW-08092016 MW-07-GW-08092016 MW-08-GW-08092016 MW-09-GW-08092016 MW-10-GW-08092016 MW-11-GW-08092016 MW-13-GW-08092016 DUP-1(08092016) DUP-2(08092016)	20 °C	Cool to <6 °C

Sample	Preservative (pH)	Criteria
For Methane, Oxygen and Nitrogen: MW-06-GW-08092016 MW-07-GW-08092016 MW-09-GW-08092016	9	>10

Sample results associated with sample locations analyzed by analytical method AM20GAx were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times the preservation	J	UJ
Analysis completed greater than two times temperature	J	R

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to Ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

4. **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis**

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-06-GW-08092016/ DUP-2(08092016)	Methane	19000	19000	0%
	Carbon dioxide	24	24	AC
	Oxygen	0.92	0.73	AC
	Nitrogen	7.3	5.1	AC
MW-13-GW-08092016/ DUP-1(08092016)	Methane	21000	22000	4.7%
	Carbon dioxide	32	40	22%
	Oxygen	1.6	0.96	AC
	Nitrogen	6.7	3.1	AC

Notes:

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Sample MW-07-GW-(08092016) was analyzed at a 4X dilution due to foaming occurring during prep procedures.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times/Temperature/Preservation		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method/Initial Calibration/Continuing calibration blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries					X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs					X
Continuing calibration %Ds		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms					X
B. Quantitation Reports					x
C. RT of sample compounds within the established RT windows					X
D. Transcription/calculation errors present					X
E. Reporting limits adjusted to reflect sample dilutions					X

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
MW-06-GW-08092016 MW-08-GW-08092016 MW-09-GW-08092016 MW-10-GW-08092016 MW-11-GW-08092016 DUP-2(08092016)	ICV %RSD	Benzaldehyde	46.2%
		4-Chloronitroaniline	27.1%
		4-Nitroaniline	23.8%
	CCV %D	Benzaldehyde	-38.6%
		N-Nitrosodi-n-propylamine	-29.7%
		Hexachlorocyclopentadiene	-25.9%
		Acetophenone	-25.2%
		Pentachlorophenol	-21.0%
		Indeno[1,2,3-cd]pyrene	+24.6%
MW-07-GW-08092016	CCV %D	Benzaldehyde	-38.4%
		2-Methylphenol	-25.1%
		N-Nitrosodi-n-propylamine	-24.1%
		Acetophenone	-22.0%
		Hexachlorocyclopentadiene	-30.2%
		Pentachlorophenol	-22.1%
		Indeno[1,2,3-cd]pyrene	+26.5%
MW-13-GW-08092016 DUP-1(08092016)	ICV %RSD	Benzaldehyde	34.9%
	CCV %D	Benzaldehyde	+29.1%
		2,4,5-Trichlorophenol	+22.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration		Non-detect	UJ

Initial/Continuing	Criteria	Sample Result	Qualification
	%RSD > 20% or a correlation coefficient <0.99	Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Locations	Internal Standard	Response
MW-13-GW-08092016 DUP-1(08092016)	1,4-Dichlorobenzene-d4	AC
	Naphthalene-d8	AC
	Acenaphthene-d10	AC
	Phenanthrene-d10	AC
	Chrysene-d12	AC
	Perylene-d12	< LL but > 25%

Sample Locations	Internal Standard	Response

Note:

AC Acceptable

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated with this SDG for SVOC.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
MW-13-GW-08092016 DUP-1(08092016)	4-Nitrophenol	AC	<LL but >10%

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-06-GW-08092016/ DUP-2(08092016)	Acetophenone	6.3 J	18 U	AC
	Bis(2-ethylhexyl) phthalate	69	66	AC
	2-Methylnaphthalene	2.8 J	2.8 J	AC
	2-Methylphenol	17	17	AC
	3 & 4 Methylphenol	130	120	8.0%
	Naphthalene	17	18	AC
	N-Nitrosodiphenylamine	3.7 U	1.9 J	AC
	Phenanthrene	1.1 J	3.6 U	AC
	Phenol	44	47	AC
MW-13-GW-08092016/ DUP-1(08092016)	Acenaphthylene	2.7 J	2.5 J	AC
	Diethyl phthalate	9.0	8.8	AC
	2,4-Dimethylphenol	34 J	32 J	AC
	Di-n-butyl phthalate	4.4 J	4.2 J	AC
	2-Methylnaphthalene	11	11	AC
	3 & 4 Methylphenol	54	54	0%
	Naphthalene	170	160	6.0%
	N-Nitrosodiphenylamine	10	3.7 U	AC

	Phenol	37	36	AC

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate(LCSD) %R				X	
LCS/LCSD Precision (RPD)				X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X	X		
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99 is allowed.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. Pesticide analysis requires that one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries reported from the primary column were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated whit this SDG for pesticides.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-06-GW-08092016/ DUP-2(08092016)	All compounds	U	U	AC
MW-13-GW-08092016/ DUP-1(08092016)	All compounds	U	U	AC

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

Compounds were not detected in any of the sample locations.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

PESTICIDES; SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	X
Surrogate Spike Recoveries		X		X	
Column %D $\leq$ 40% (If dual column is performed for reporting-not confirmation)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

PESTICIDES; SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					

%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference
%D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB

analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-07-GW-08092016 (Both original and confirmation runs)	Tetrachloro-m-xylene	< LL but > 10%
	Decachlorobiphenyl	< 10%
MW-07-GW-08092016 RE (Reanalysis) (Original run)	Tetrachloro-m-xylene	< LL but > 10%
	Decachlorobiphenyl	<10%
MW-07-GW-08092016 RE (Reanalysis) (Confirmation run)	Tetrachloro-m-xylene	AC
	Decachlorobiphenyl	<10%

Notes:

Upper control limit (UL)

Lower control limit (LL)

Acceptable (AC)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	

Note :

1. Based on the outlying surrogate recoveries found in sample location MW-07-GW-08092016 (as detailed above) results from the re-extracted reanalysis were reported.
2. Based on one surrogate recovery outlier in the original run of each sample: MW-06-GW-08092016 and DUP-2(08092016); results from the original run should be reported.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample location associated whit this SDG.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD

MW-06-GW-08092016/ DUP-2(08092016)	All compounds	3.5	3.4	2.9%
MW-13-GW-08092016/ DUP-1(08092016)	All compounds	0.37 U	0.37 U	AC

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

Note: The PCBs were analyzed using dual column technique. Therefore, as suggested in SW-846 8000C "11.10.4.2 If no anomalies are noted, review the chromatographic conditions. If there is no evidence of chromatographic problems, then it may be appropriate to report the lower result. "the lower of the two detected Aroclors was reported unless there was any QA/QC issue which required the high result to be chosen.

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (%RPD) of detected sample results must be less than 40%.

Sample locations associated with RPD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	RPD
MW-07-GW-08092016 RE (Reanalysis)	Aroclor 1242	76.3%

The criteria used to evaluate the RPD are presented in the following table. In the case of a RPD deviation, the sample results are qualified as documented in the table below.

Control Limit (%D)	Qualification
>40% to 70%	J
>70% to 100%	JN
>100% [1]	R
>100% to 200% (Interference detected)[2]	J or JN
>50% (PCB sample results less than the RL)	U

When the PCB sample results are less than the RL and the RPD greater than 50% the sample result are raised to the RL and reported as non-detect.

Note 1: If the pattern is confirmed sample results will be qualified as estimated (J). If pattern exhibits interference or if the PCB cannot be positively determined due to weathering the sample results will be qualified as tentative identification estimate (JN).

Note 2: If interference is detected in either column the sample results will be qualified as tentative identification estimate (JN).

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate(MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X	X		
Column (RPD) (If dual column is performed-not confirmation purposes only)		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation					
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	
%RSD – relative standard deviation					

PCBs; SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/ECD)					
%R - percent recovery, RPD - relative percent difference, %D – difference					

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C, 7470A and USEPA Methods 9034 (Sulfate), 9038 (Sulfide), 9060A (TOC), Standard Method (SM)2540D (TSS) and SM4500 (Ammonia, Nitrogen, Nitrite, Nitrogen Nitrate). Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
  - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
  - E The reported value is estimated due to the presence of interference.
  - N Spiked sample recovery is not within control limits.
  - * Duplicate analysis is not within control limits.
- Validation Qualifiers
  - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
  - UB Analyte considered non-detect at the listed value due to associated blank contamination.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Preserved to a pH of less than 2.
SW-846 7470A	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) from the data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
MW-08-GW-08092016 (Total and Dissolved) MW-09-GW-08092016 (Dissolved) MW-10-GW-08092016 (Dissolved) MW-13-GW-08092016 (Dissolved) DUP-1(08092016) (Dissolved) DUP-2(08092016) (Dissolved)	Mercury (Method blank)	Detected sample results <RL and <BAL	“UB” at the RL
MW-06-GW-08092016 (Total) MW-07-GW-08092016 (Dissolved)		Detected sample results >RL and <BAL	“UB” at detected sample concentration
DUP-2(08092016) (Dissolved)	Cadmium Selenium	Detected sample results <RL and <BAL	“UB” at the RL

Sample Locations	Analytes	Sample Result	Qualification
	(Continuing calibration Blank)		

Note:

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All analytes associated with calibration standard recoveries were within control limits.

3.2 RL Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the reporting limit. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the RL standard analysis are presented below in the RL standards evaluation table (if applicable).

All RL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis performed on sample location MW-06-GW-08092016 (for Mercury) exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the

parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

MS/MSD analysis was performed in addition to the laboratory duplicate analysis (for Mercury). The MS/MSD recoveries exhibited acceptable RPD.

The laboratory duplicate was not evaluated due to low concentrations detected in the sample and the duplicate.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
MW-06-GW-08092016/ DUP-2(08092016) Total	Aluminum	0.34	0.38	AC
	Arsenic	0.028	0.028	AC
	Barium	0.34	0.35	2.9%
	Cadmium	0.0019 J	0.0019 J	AC
	Calcium	34	35	2.9%
	Chromium	0.10	0.10	0%
	Cobalt	0.030	0.031	2.9%
	Copper	0.011	0.012	AC
	Iron	1.2	1.4	15%
	Lead	0.096	0.10	4.1%
	Magnesium	29	29	0%
	Manganese	0.011	0.012	AC
	Nickel	0.12	0.12	0%
	Potassium	530	530	0%
	Selenium	0.0069 J	0.0053 J	AC
	Sodium	2800	2700	3.6%
	Vanadium	0.062	0.064	1.6%
	Zinc	0.13	0.14	7.4%
MW-06-GW-08092016/ DUP-2(08092016)	Aluminum	0.16 J	0.21	AC
	Antimony	0.0070 J	0.020 U	AC

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
Dissolved	Arsenic	0.027	0.025	AC
	Barium	0.33	0.30	9.5%
	Cadmium	0.0013 J	0.0020 U	AC
	Calcium	34	30	13%
	Chromium	0.097	0.089	8.6%
	Cobalt	0.030	0.026	14 %
	Copper	0.0046 J	0.0060 J	AC
	Iron	0.96	1.0	AC
	Lead	0.021	0.044	NC
	Magnesium	29	26	11%
	Manganese	0.0093 J	0.0077 J	AC
	Nickel	0.12	0.097	21%
	Potassium	530	470	6%
	Selenium	0.0073 J	0.010 U	AC
	Sodium	2700	2400	12%
	Vanadium	0.056	0.053	5.5%
	Zinc	0.039	0.061	AC
MW-13-GW-08092016/ DUP-1(08092016) Total	Aluminum	0.096 J	0.12 J	AC
	Arsenic	0.0068 J	0.0096 J	AC
	Barium	0.21	0.21	0%
	Cadmium	0.00096 J	0.0020 U	AC
	Calcium	83	93	11%
	Chromium	0.0032 J	0.0039 J	AC
	Cobalt	0.0013 J	0.0015 J	AC
	Copper	0.010 U	0.0029 J	AC
	Iron	6.1	5.6	8.5%
	Lead	0.0032 J	0.0050 U	AC
	Magnesium	42	40	4.9%
	Manganese	0.31	0.29	6.7%
	Nickel	0.0087 J	0.011	AC
	Potassium	58	59	1.7%

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
	Sodium	200	210	4.9%
	Vanadium	0.0037 J	0.0045 J	AC
	Zinc	0.011 J	0.020 U	AC
MW-13-GW-08092016/ DUP-1(08092016) Dissolved	Arsenic	0.0095 J	0.0062 J	AC
	Barium	0.20	0.22	9.5%
	Cadmium	0.0020 U	0.0011 J	AC
	Calcium	91	86	5.6%
	Chromium	0.0032 J	0.0037 J	AC
	Cobalt	0.0016 J	0.0018 J	AC
	Iron	3.3	5.9	NC
	Magnesium	39	45	14%
	Manganese	0.27	0.31	13.8%
	Nickel	0.0098 J	0.0092 J	AC
	Potassium	56	62	10%
	Sodium	200	210	4.9%
	Vanadium	0.0040 J	0.0031 J	AC

Notes:

AC = Acceptable

NC = Non-compliant

The analyte Lead associated with samples locations MW-06-GW-08092016 (Dissolved) and DUP-2(08092016) (Dissolved); and, the analyte Iron in sample locations MW-13-GW-08092016 (Dissolved) and DUP-1(08092016) (Dissolved) exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS/LCS analysis exhibited recoveries within the control limits.

7.Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a

10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution performed on sample location MW-06-GW-08092016 (Mercury) exhibited %D within the control limit.

8. General Assessment – Total vs. Dissolved

When the dissolved concentration exceeded the associated total concentration, and both results were five times greater than the LOQ, then the %D between the total and dissolved concentrations must be less than 20%.

The calculated %D between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS; SW-846 6010C/7470A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)					
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X	X		
ICP Serial Dilution %D		X		X	
Total vs. Dissolved		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
CRDL Standard Recovery		X		X	
ICP Interference Check		X		X	
ICP-MS Internal Standards					X
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%R Percent recovery

RPD	Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Nitrite-N by SM4500-NO2-B		48 hours from collection to analysis	Cool to < 6 °C
Nitrate-N by SM4500-NO3 F		28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
(Nitrate/Nitrite as N) by SM4500-NO3 F		48 hours from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Sulfate by SW-846 9038A		28 days from collection to analysis	Cool to <6 °C.
Sulfide by SW-846 9034		7 days from collection to analysis	Cool to <6 °C.
Total Organic Carbon (TOC) by Sw-846 9060A		28 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.
Total Suspended Solids (TSS) by SM2540 D		7 days from collection to analysis	Cool to <6 °C
Flash Point (Ignitability) by Pensky-Martens Closed Cup Method 1010A		7 days from collection to analysis	Cool to <6 °C.

The analyses that exceeded the holding time are presented in the following table.

Sample Locations	Holding Time	Criteria
Composite Drum Sample	10 days	7 Days

Sample results associated with sample locations analyzed by analytical method SW-846 1010A were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
MW-07-GW-08092016 MW-08-GW-08092016 MW-09-GW-08092016 DUP-2(08092016)	Sulfate (Method and continuing calibration blank)	Detected sample results <RL and <BAL	"UB" at the RL
MW-11-GW-08092016 -6		Detected sample results >RL and <BAL	"UB" at detected sample concentration

Note:

RL Reporting limit

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS analysis performed on sample locations MW-06-GW-08092016 (Sulfide) and MW-11-GW-08092016 (Sulfate) exhibited recoveries within the control limits.

All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
MW-08-GW-08092016	TOC	71%	71%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to the parent sample result associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

MS/MSD analysis was performed in addition to the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPD, except as where indicate above.

All analytes associated with laboratory duplicate RPD were within the control limit for TSS analysis.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-06-GW-08092016/ DUP-2(08092016)	Sulfide	5.4	6.5	15.4%
	Sulfate	49	20 U	AC
	TOC	280	370	27.7%
	Nitrate	0.10 U	0.038 J	AC
	TSS	7.0	4.5 J	AC
	Ammonia	490	490	0%
	Nitrite	0.035 J	0.040 U	AC
	Nitrogen, Nitrate Nitrite	0.10 U	0.038 J	AC
MW-13-GW-08092016/ DUP-1(08092016)	Sulfide	0.61 J	1.7	AC
	Sulfate	86	96	AC

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	TOC	54	56	3.6%
	Nitrate	0.10 U	0.10 U	AC
	TSS	28	22	AC
	Ammonia	56	66	16.3%
	Nitrite	0.020 U	0.020 U	AC
	Nitrogen, Nitrate Nitrite	0.10 U	0.10 U	AC

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA SW-846 9034, 9038, 9060A, SM 2540D and SM4500	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate(MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference,

%D – difference

VALIDATION PERFORMED BY: Lisa Horton

SIGNATURE: Lisa Horton

DATE: October 19, 2016

PEER REVIEW: Dennis Capria

DATE: October 20, 2016

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-115474 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago IL 60603
Phone: 312-575-3700
Fax:
E-Mail: jack.kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-115474
Chain of Custody Number:
Page 1 of 2
Temperature °C of Cooler: 23, 28, 31, 2, 4, 2, 2, 3, 3

Client: Arcadis
Client Project #: CI 001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 50011099
Sampler: M Schettler & B. Thurnhoffer
Lab PM: Theresa Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other Trisodium Phosphate

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total Metals (3)	Dissolved Metals (3)	Ammonia, NO3, NO2 (6)	Sulfide (4.5)	VOCs (1)	TOC (2)	TSS, SO4, NO2 (8)	Dissolved Gases (9)	Comments
1		MW-06-GW-08092016	8/9/16	9:30	18	W										- Diss metals field
2		MW-07-GW-08092016		1145	18	W										filtered.
3		MW-08-GW-08092016		1345	18	W										- unable to remove
4		MW-09-GW-08092016		1530	18	W										all headspace from
5		MW-10-GW-08092016		1410	18	W										VOA vials due to
6		MW-11-GW-08092016		1210	18	W										continuous reaction
7		MW-13-GW-08092016		9:20	18	W										between water +
8		DUP-1(08092016)		—	18	W										preservative. Tiny bubbles
9		DUP-2(08092016)		—	18	W										- See order for
																methods +
																modified TCL lists.

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	8.9.16	17:05	[signature]	TA	8/9/16	1705
[signature]	TA	8/9/16	1755	[signature]	TA-CAN	8/10/16	0720

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Level IV Data package
- 2 empty coolers w/ unused bottles.

Lab Comments:

08/24/2016
TAL 4124-569 (1209)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-115474

Chain of Custody Number:

Page 2 of 2

Temperature °C of Cooler:

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago IL 60603
Phone: 312.575.3700
Fax:
E-Mail: jack.kratzmeyer@arcadis-us.com
PO#/Reference#

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago IL
Lab Project #: 500115099
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Parameter: VOCs (Preservative 1)	Parameter: PH, flashpoint (Preservative 8)								Comments
10		Composite Drum Sample	8/9/16	1600	4	WW	X	X								

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	8-9-16	1305 MS.	[signature]	TA	8/9/16	1705
[signature]	TA	8/9/16	1755	[signature]	TA-CALT	8/10/16	0720
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

08/24/2016

TAL-4124-509 (1208)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
X	Surrogate is outside control limits
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Date Collected: 08/09/16 09:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**66**	J	5.0	1.7	ug/L			08/12/16 01:17	1
Benzene	**6.0**		0.50	0.15	ug/L			08/12/16 01:17	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 01:17	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 01:17	1
Bromomethane	<2.0	J	2.0	0.80	ug/L			08/12/16 01:17	1
Carbon disulfide	**1.1**	J	2.0	0.45	ug/L			08/12/16 01:17	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 01:17	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 01:17	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 01:17	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 01:17	1
cis-1,2-Dichloroethene	**4.3**		1.0	0.41	ug/L			08/12/16 01:17	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 01:17	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 01:17	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 01:17	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 01:17	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
1,2-Dichlorobenzene	**2.1**		1.0	0.33	ug/L			08/12/16 01:17	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 01:17	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			08/12/16 01:17	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 01:17	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 01:17	1
1,2-Dichloroethane	**1.6**		1.0	0.39	ug/L			08/12/16 01:17	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 01:17	1
Ethylbenzene	**86**		0.50	0.18	ug/L			08/12/16 01:17	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 01:17	1
Isopropylbenzene	**5.0**		1.0	0.39	ug/L			08/12/16 01:17	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 01:17	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 01:17	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 01:17	1
Methyl Ethyl Ketone	**25**		5.0	2.1	ug/L			08/12/16 01:17	1
methyl isobutyl ketone	**28**		5.0	2.2	ug/L			08/12/16 01:17	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 01:17	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 01:17	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 01:17	1
Toluene	**160**		0.50	0.15	ug/L			08/12/16 01:17	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 01:17	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 01:17	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 01:17	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 01:17	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 01:17	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 01:17	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 01:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 01:17	1
Vinyl chloride	**3.6**		0.50	0.20	ug/L			08/12/16 01:17	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Date Collected: 08/09/16 09:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 01:17*	*1*
Dibromofluoromethane	*88*		*70 - 120*		*08/12/16 01:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*08/12/16 01:17*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 01:17*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**340**	D	10	2.2	ug/L			08/12/16 01:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 01:44*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 01:44*	*10*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 01:44*	*10*
Toluene-d8 (Surr)	*102*		*75 - 120*		*08/12/16 01:44*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Acenaphthylene	<3.7		3.7	0.98	ug/L		08/10/16 16:28	08/15/16 17:57	5
Acetophenone	**6.3**	J	18	2.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Anthracene	<3.7		3.7	1.2	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[a]pyrene	<0.73	* J	0.73	0.36	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[b]fluoranthene	<0.73	* J	0.73	0.30	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[g,h,i]perylene	<3.7	* J	3.7	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzo[k]fluoranthene	<0.73	* J	0.73	0.23	ug/L		08/10/16 16:28	08/15/16 17:57	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		08/10/16 16:28	08/15/16 17:57	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Bis(2-ethylhexyl) phthalate	**69**		37	6.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:57	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		08/10/16 16:28	08/15/16 17:57	5
Carbazole	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Chloroaniline	<37	J	37	7.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Chloro-3-methylphenol	<37		37	8.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Chlorophenol	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
Chrysene	<1.8		1.8	0.25	ug/L		08/10/16 16:28	08/15/16 17:57	5
Dibenz(a,h)anthracene	<1.1	* J	1.1	0.19	ug/L		08/10/16 16:28	08/15/16 17:57	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		08/10/16 16:28	08/15/16 17:57	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dichlorophenol	<37		37	9.5	ug/L		08/10/16 16:28	08/15/16 17:57	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dimethylphenol	<37		37	6.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		08/10/16 16:28	08/15/16 17:57	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dinitrophenol	<73		73	31	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/10/16 16:28	08/15/16 17:57	5
Di-n-octyl phthalate	<37		37	3.8	ug/L		08/10/16 16:28	08/15/16 17:57	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Date Collected: 08/09/16 09:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.7		3.7	1.7	ug/L		08/10/16 16:28	08/15/16 17:57	5
Fluorene	<3.7		3.7	0.89	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachlorocyclopentadiene	<73	J	73	23	ug/L		08/10/16 16:28	08/15/16 17:57	5
Hexachloroethane	<18		18	2.2	ug/L		08/10/16 16:28	08/15/16 17:57	5
Indeno[1,2,3-cd]pyrene	<0.73	* J	0.73	0.27	ug/L		08/10/16 16:28	08/15/16 17:57	5
Isophorone	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Methylnaphthalene	**2.8**	**J**	7.3	0.24	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Methylphenol	**17**		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
3 & 4 Methylphenol	**130**		7.3	1.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
Naphthalene	**17**		3.7	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Nitroaniline	<18		18	4.7	ug/L		08/10/16 16:28	08/15/16 17:57	5
3-Nitroaniline	<37		37	6.5	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Nitroaniline	<37	J	37	6.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Nitrobenzene	<3.7		3.7	1.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
2-Nitrophenol	<37		37	9.2	ug/L		08/10/16 16:28	08/15/16 17:57	5
4-Nitrophenol	<73		73	27	ug/L		08/10/16 16:28	08/15/16 17:57	5
N-Nitrosodi-n-propylamine	<1.8	J	1.8	0.56	ug/L		08/10/16 16:28	08/15/16 17:57	5
N-Nitrosodiphenylamine	<3.7		3.7	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Pentachlorophenol	<73	J	73	14	ug/L		08/10/16 16:28	08/15/16 17:57	5
Phenanthrene	**1.1**	**J**	3.7	1.1	ug/L		08/10/16 16:28	08/15/16 17:57	5
Phenol	**44**		18	2.5	ug/L		08/10/16 16:28	08/15/16 17:57	5
Pyrene	<3.7		3.7	1.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/10/16 16:28	08/15/16 17:57	5
Benzaldehyde	<150	^ J	150	55	ug/L		08/10/16 16:28	08/15/16 17:57	5
Caprolactam	<37		37	5.4	ug/L		08/10/16 16:28	08/15/16 17:57	5
Atrazine	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:57	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*30 - 123*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
Phenol-d5 (Surr)	*71*		*20 - 100*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
Terphenyl-d14 (Surr)	*154*	*X*	*42 - 150*	*08/10/16 16:28*	*08/15/16 17:57*	*5*
2,4,6-Tribromophenol (Surr)	*75*		*30 - 150*	*08/10/16 16:28*	*08/15/16 17:57*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		08/10/16 16:28	08/15/16 19:24	5
Acenaphthylene	<3.7		3.7	0.98	ug/L		08/10/16 16:28	08/15/16 19:24	5
Acetophenone	<18		18	2.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
Anthracene	<3.7		3.7	1.2	ug/L		08/10/16 16:28	08/15/16 19:24	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		08/10/16 16:28	08/15/16 19:24	5
Benzo[a]pyrene	<0.73	*	0.73	0.36	ug/L		08/10/16 16:28	08/15/16 19:24	5
Benzo[b]fluoranthene	<0.73	*	0.73	0.30	ug/L		08/10/16 16:28	08/15/16 19:24	5
Benzo[g,h,i]perylene	<3.7	*	3.7	1.4	ug/L		08/10/16 16:28	08/15/16 19:24	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.73	*	0.73	0.23	ug/L		08/10/16 16:28	08/15/16 19:24	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		08/10/16 16:28	08/15/16 19:24	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 19:24	5
Bis(2-ethylhexyl) phthalate	**70**		37	6.3	ug/L		08/10/16 16:28	08/15/16 19:24	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 19:24	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		08/10/16 16:28	08/15/16 19:24	5
Carbazole	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 19:24	5
4-Chloroaniline	<37		37	7.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
4-Chloro-3-methylphenol	**26**	**J**	37	8.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		08/10/16 16:28	08/15/16 19:24	5
2-Chlorophenol	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 19:24	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 19:24	5
Chrysene	<1.8		1.8	0.25	ug/L		08/10/16 16:28	08/15/16 19:24	5
Dibenz(a,h)anthracene	<1.1	*	1.1	0.19	ug/L		08/10/16 16:28	08/15/16 19:24	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		08/10/16 16:28	08/15/16 19:24	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,4-Dichlorophenol	<37		37	9.5	ug/L		08/10/16 16:28	08/15/16 19:24	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,4-Dimethylphenol	<37		37	6.6	ug/L		08/10/16 16:28	08/15/16 19:24	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 19:24	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		08/10/16 16:28	08/15/16 19:24	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,4-Dinitrophenol	<73		73	31	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/10/16 16:28	08/15/16 19:24	5
Di-n-octyl phthalate	<37		37	3.8	ug/L		08/10/16 16:28	08/15/16 19:24	5
Fluoranthene	<3.7		3.7	1.7	ug/L		08/10/16 16:28	08/15/16 19:24	5
Fluorene	<3.7		3.7	0.89	ug/L		08/10/16 16:28	08/15/16 19:24	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/10/16 16:28	08/15/16 19:24	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/10/16 16:28	08/15/16 19:24	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		08/10/16 16:28	08/15/16 19:24	5
Hexachloroethane	<18		18	2.2	ug/L		08/10/16 16:28	08/15/16 19:24	5
Indeno[1,2,3-cd]pyrene	<0.73	*	0.73	0.27	ug/L		08/10/16 16:28	08/15/16 19:24	5
Isophorone	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
2-Methylnaphthalene	**2.6**	**J**	7.3	0.24	ug/L		08/10/16 16:28	08/15/16 19:24	5
2-Methylphenol	**17**		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 19:24	5
3 & 4 Methylphenol	**130**		7.3	1.6	ug/L		08/10/16 16:28	08/15/16 19:24	5
Naphthalene	**16**		3.7	1.1	ug/L		08/10/16 16:28	08/15/16 19:24	5
2-Nitroaniline	<18		18	4.7	ug/L		08/10/16 16:28	08/15/16 19:24	5
3-Nitroaniline	<37		37	6.5	ug/L		08/10/16 16:28	08/15/16 19:24	5
4-Nitroaniline	<37		37	6.1	ug/L		08/10/16 16:28	08/15/16 19:24	5
Nitrobenzene	<3.7		3.7	1.6	ug/L		08/10/16 16:28	08/15/16 19:24	5
2-Nitrophenol	<37		37	9.2	ug/L		08/10/16 16:28	08/15/16 19:24	5
4-Nitrophenol	<73		73	27	ug/L		08/10/16 16:28	08/15/16 19:24	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		08/10/16 16:28	08/15/16 19:24	5
N-Nitrosodiphenylamine	<3.7		3.7	1.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
Pentachlorophenol	<73		73	14	ug/L		08/10/16 16:28	08/15/16 19:24	5
Phenanthrene	<3.7		3.7	1.1	ug/L		08/10/16 16:28	08/15/16 19:24	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Date Collected: 08/09/16 09:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**44**		18	2.5	ug/L		08/10/16 16:28	08/15/16 19:24	5
Pyrene	<3.7		3.7	1.6	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/10/16 16:28	08/15/16 19:24	5
Benzaldehyde	<150	^	150	55	ug/L		08/10/16 16:28	08/15/16 19:24	5
Caprolactam	<37		37	5.4	ug/L		08/10/16 16:28	08/15/16 19:24	5
Atrazine	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 19:24	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 19:24	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*30 - 123*	*08/10/16 16:28*	*08/15/16 19:24*	*5*
2-Fluorophenol (Surr)	*70*		*30 - 110*	*08/10/16 16:28*	*08/15/16 19:24*	*5*
Nitrobenzene-d5 (Surr)	*64*		*33 - 139*	*08/10/16 16:28*	*08/15/16 19:24*	*5*
Phenol-d5 (Surr)	*68*		*20 - 100*	*08/10/16 16:28*	*08/15/16 19:24*	*5*
Terphenyl-d14 (Surr)	*160*	*X*	*42 - 150*	*08/10/16 16:28*	*08/15/16 19:24*	*5*
2,4,6-Tribromophenol (Surr)	*78*		*30 - 150*	*08/10/16 16:28*	*08/15/16 19:24*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		08/10/16 09:43	08/19/16 13:54	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		08/10/16 09:43	08/19/16 13:54	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		08/10/16 09:43	08/19/16 13:54	1
beta-BHC	<0.036		0.036	0.0093	ug/L		08/10/16 09:43	08/19/16 13:54	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		08/10/16 09:43	08/19/16 13:54	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		08/10/16 09:43	08/19/16 13:54	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		08/10/16 09:43	08/19/16 13:54	1
delta-BHC	<0.036		0.036	0.0094	ug/L		08/10/16 09:43	08/19/16 13:54	1
Dieldrin	<0.036		0.036	0.012	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endrin	<0.036		0.036	0.013	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		08/10/16 09:43	08/19/16 13:54	1
Endrin ketone	<0.036		0.036	0.015	ug/L		08/10/16 09:43	08/19/16 13:54	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		08/10/16 09:43	08/19/16 13:54	1
gamma-Chlordane	<0.036		0.036	0.0065	ug/L		08/10/16 09:43	08/19/16 13:54	1
Heptachlor	<0.036		0.036	0.012	ug/L		08/10/16 09:43	08/19/16 13:54	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		08/10/16 09:43	08/19/16 13:54	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/10/16 09:43	08/19/16 13:54	1
Toxaphene	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/19/16 13:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*24*	*X*	*30 - 143*	*08/10/16 09:43*	*08/19/16 13:54*	*1*
Tetrachloro-m-xylene	*81*		*30 - 120*	*08/10/16 09:43*	*08/19/16 13:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1016	<0.36		0.36	0.061	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1221	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1232	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1232	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1242	**3.5**		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1242	**3.8**		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1248	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1248	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1254	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1254	<0.36		0.36	0.18	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1260	<0.36		0.36	0.064	ug/L		08/10/16 09:43	08/12/16 15:57	1
PCB-1260	<0.36		0.36	0.064	ug/L		08/10/16 09:43	08/12/16 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*39*		*30 - 127*	*08/10/16 09:43*	*08/12/16 15:57*	*1*
Tetrachloro-m-xylene	*43*		*30 - 127*	*08/10/16 09:43*	*08/12/16 15:57*	*1*
DCB Decachlorobiphenyl	*25*	*X*	*30 - 150*	*08/10/16 09:43*	*08/12/16 15:57*	*1*
DCB Decachlorobiphenyl	*28*	*X*	*30 - 150*	*08/10/16 09:43*	*08/12/16 15:57*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.34**		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:10	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:10	1
Arsenic	**0.028**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:10	1
Barium	**0.34**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:10	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:10	1
Cadmium	**0.0019**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:10	1
Calcium	**34**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:10	1
Chromium	**0.10**		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:10	1
Cobalt	**0.030**		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:10	1
Copper	**0.011**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:10	1
Iron	**1.2**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:10	1
Lead	**0.096**		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:10	1
Magnesium	**29**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:10	1
Manganese	**0.011**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:10	1
Nickel	**0.12**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:10	1
Potassium	**530**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:10	1
Selenium	**0.0069**	**J**	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:10	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:10	1
Sodium	**2800**		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:00	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:10	1
Vanadium	**0.062**		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:10	1
Zinc	**0.13**		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:10	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.16**	**J**	0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:02	1
Antimony	**0.0070**	**J**	0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:02	1
Arsenic	**0.027**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:02	1
Barium	**0.33**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-06-GW-08092016

Lab Sample ID: 500-115474-1

Date Collected: 08/09/16 09:30
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0013	J	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:02	1
Calcium	34		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:02	1
Chromium	0.097		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:02	1
Cobalt	0.030		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:02	1
Copper	0.0046	J	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:02	1
Iron	0.96		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:02	1
Lead	0.021	J	0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:02	1
Magnesium	29		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:02	1
Manganese	0.0093	J	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:02	1
Nickel	0.12		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:02	1
Potassium	530		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:02	1
Selenium	0.0073	J	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:02	1
Sodium	2700		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:16	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:02	1
Vanadium	0.056		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:02	1
Zinc	0.039		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00026	~~B~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:08	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	5.4		1.0	0.18	mg/L			08/11/16 09:15	1
Sulfate	49	~~B~~	20	5.9	mg/L			08/17/16 06:49	4
Total Organic Carbon - Duplicates	280		10	2.7	mg/L			08/16/16 00:33	10
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	7.0		5.0	2.5	mg/L			08/11/16 12:20	1
Ammonia	490	~~B~~	40	5.7	mg/L		08/16/16 21:15	08/18/16 22:33	50
Nitrogen, Nitrite	0.035	~~J~~	0.040	0.018	mg/L			08/10/16 11:11	2
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 23:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**46**		5.0	1.7	ug/L			08/12/16 02:11	1
Benzene	**12**		0.50	0.15	ug/L			08/12/16 02:11	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 02:11	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 02:11	1
Bromomethane	<2.0	J	2.0	0.80	ug/L			08/12/16 02:11	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 02:11	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 02:11	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 02:11	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 02:11	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 02:11	1
cis-1,2-Dichloroethene	**8.9**		1.0	0.41	ug/L			08/12/16 02:11	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 02:11	1
Cyclohexane	**0.73**	**J**	1.0	0.49	ug/L			08/12/16 02:11	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 02:11	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 02:11	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,2-Dichlorobenzene	**8.9**		1.0	0.33	ug/L			08/12/16 02:11	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 02:11	1
1,4-Dichlorobenzene	**15**		1.0	0.36	ug/L			08/12/16 02:11	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 02:11	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 02:11	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 02:11	1
Ethylbenzene	**160**		0.50	0.18	ug/L			08/12/16 02:11	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 02:11	1
Isopropylbenzene	**10**		1.0	0.39	ug/L			08/12/16 02:11	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 02:11	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			08/12/16 02:11	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 02:11	1
Methyl Ethyl Ketone	**24**		5.0	2.1	ug/L			08/12/16 02:11	1
methyl isobutyl ketone	**100**		5.0	2.2	ug/L			08/12/16 02:11	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 02:11	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 02:11	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 02:11	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 02:11	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 02:11	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 02:11	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 02:11	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 02:11	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 02:11	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 02:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 02:11	1
Vinyl chloride	**12**		0.50	0.20	ug/L			08/12/16 02:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 02:11*	*1*

Client Sample ID: MW-07-GW-08092016

Lab Sample ID: 500-115474-2

Date Collected: 08/09/16 11:45

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 02:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 02:11*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*08/12/16 02:11*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**420**	D	5.0	1.5	ug/L			08/12/16 02:38	10
Xylenes, Total	**760**	D	10	2.2	ug/L			08/12/16 02:38	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 02:38*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 02:38*	*10*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 02:38*	*10*
Toluene-d8 (Surr)	*104*		*75 - 120*		*08/12/16 02:38*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.5		7.5	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
Acenaphthylene	<7.5		7.5	2.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
Acetophenone	<38	J	38	5.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
Anthracene	**3.3**	**J**	7.5	2.5	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[a]anthracene	<1.5		1.5	0.43	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[a]pyrene	**3.2**		1.5	0.74	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[b]fluoranthene	**3.6**		1.5	0.61	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[g,h,i]perylene	<7.5		7.5	2.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzo[k]fluoranthene	<1.5		1.5	0.48	ug/L		08/10/16 16:28	08/16/16 19:47	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		08/10/16 16:28	08/16/16 19:47	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
Bis(2-ethylhexyl) phthalate	**270**		75	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Bromophenyl phenyl ether	<38		38	4.1	ug/L		08/10/16 16:28	08/16/16 19:47	10
Butyl benzyl phthalate	<15		15	3.6	ug/L		08/10/16 16:28	08/16/16 19:47	10
Carbazole	**5.7**	**J**	38	2.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Chloroaniline	<75		75	15	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Chloro-3-methylphenol	<75		75	17	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Chloronaphthalene	<15		15	1.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Chlorophenol	<38		38	4.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Chlorophenyl phenyl ether	<38		38	4.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
Chrysene	**3.3**	**J**	3.8	0.51	ug/L		08/10/16 16:28	08/16/16 19:47	10
Dibenz(a,h)anthracene	<2.3		2.3	0.38	ug/L		08/10/16 16:28	08/16/16 19:47	10
Dibenzofuran	<15		15	2.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
3,3'-Dichlorobenzidine	<38		38	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dichlorophenol	<75		75	20	ug/L		08/10/16 16:28	08/16/16 19:47	10
Diethyl phthalate	<15		15	2.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dimethylphenol	**370**		75	14	ug/L		08/10/16 16:28	08/16/16 19:47	10
Dimethyl phthalate	<15		15	2.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Di-n-butyl phthalate	<38		38	5.5	ug/L		08/10/16 16:28	08/16/16 19:47	10
4,6-Dinitro-2-methylphenol	<150		150	44	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dinitrophenol	<150		150	65	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4-Dinitrotoluene	<7.5		7.5	1.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,6-Dinitrotoluene	<3.8		3.8	0.55	ug/L		08/10/16 16:28	08/16/16 19:47	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Date Collected: 08/09/16 11:45
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<75		75	7.9	ug/L		08/10/16 16:28	08/16/16 19:47	10
Fluoranthene	**12**		7.5	3.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Fluorene	<7.5		7.5	1.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachlorobenzene	<3.8		3.8	0.60	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachlorobutadiene	<38		38	3.9	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachlorocyclopentadiene	<150	J	150	48	ug/L		08/10/16 16:28	08/16/16 19:47	10
Hexachloroethane	<38		38	4.5	ug/L		08/10/16 16:28	08/16/16 19:47	10
Indeno[1,2,3-cd]pyrene	**2.0**	J	1.5	0.56	ug/L		08/10/16 16:28	08/16/16 19:47	10
Isophorone	<15		15	2.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Methylnaphthalene	**6.0**	J	15	0.49	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Methylphenol	**75**	J	15	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
3 & 4 Methylphenol	**290**		15	3.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Naphthalene	**38**		7.5	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Nitroaniline	<38		38	9.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
3-Nitroaniline	<75		75	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Nitroaniline	<75		75	13	ug/L		08/10/16 16:28	08/16/16 19:47	10
Nitrobenzene	<7.5		7.5	3.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
2-Nitrophenol	<75		75	19	ug/L		08/10/16 16:28	08/16/16 19:47	10
4-Nitrophenol	<150		150	56	ug/L		08/10/16 16:28	08/16/16 19:47	10
N-Nitrosodi-n-propylamine	<3.8	J	3.8	1.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
N-Nitrosodiphenylamine	<7.5		7.5	2.8	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,2'-oxybis[1-chloropropane]	<15		15	2.9	ug/L		08/10/16 16:28	08/16/16 19:47	10
Pentachlorophenol	<150	J	150	30	ug/L		08/10/16 16:28	08/16/16 19:47	10
Phenanthrene	**16**		7.5	2.3	ug/L		08/10/16 16:28	08/16/16 19:47	10
Phenol	<38		38	5.0	ug/L		08/10/16 16:28	08/16/16 19:47	10
Pyrene	**9.7**		7.5	3.2	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4,5-Trichlorophenol	<75		75	19	ug/L		08/10/16 16:28	08/16/16 19:47	10
2,4,6-Trichlorophenol	<38		38	5.4	ug/L		08/10/16 16:28	08/16/16 19:47	10
Benzaldehyde	<300	^ J	300	110	ug/L		08/10/16 16:28	08/16/16 19:47	10
Caprolactam	<75		75	11	ug/L		08/10/16 16:28	08/16/16 19:47	10
Atrazine	<38		38	4.7	ug/L		08/10/16 16:28	08/16/16 19:47	10
1,1'-Biphenyl	<38		38	2.7	ug/L		08/10/16 16:28	08/16/16 19:47	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*98*		*30 - 123*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
2-Fluorophenol (Surr)	*104*		*30 - 110*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
Nitrobenzene-d5 (Surr)	*105*		*33 - 139*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
Phenol-d5 (Surr)	*105*	*X*	*20 - 100*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
Terphenyl-d14 (Surr)	*154*	*X*	*42 - 150*	*08/10/16 16:28*	*08/16/16 19:47*	*10*
2,4,6-Tribromophenol (Surr)	*102*		*30 - 150*	*08/10/16 16:28*	*08/16/16 19:47*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.19		0.19	0.026	ug/L		08/10/16 09:43	08/19/16 14:13	5
alpha-BHC	<0.19		0.19	0.013	ug/L		08/10/16 09:43	08/19/16 14:13	5
alpha-Chlordane	<0.19		0.19	0.021	ug/L		08/10/16 09:43	08/19/16 14:13	5
beta-BHC	<0.19		0.19	0.049	ug/L		08/10/16 09:43	08/19/16 14:13	5
4,4'-DDD	<0.19		0.19	0.064	ug/L		08/10/16 09:43	08/19/16 14:13	5
4,4'-DDE	<0.19		0.19	0.018	ug/L		08/10/16 09:43	08/19/16 14:13	5
4,4'-DDT	<0.19		0.19	0.016	ug/L		08/10/16 09:43	08/19/16 14:13	5

Client Sample ID: MW-07-GW-08092016

Date Collected: 08/09/16 11:45
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.19		0.19	0.050	ug/L		08/10/16 09:43	08/19/16 14:13	5
Dieldrin	<0.19		0.19	0.063	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endosulfan I	<0.19		0.19	0.020	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endosulfan II	<0.19		0.19	0.014	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endosulfan sulfate	<0.19		0.19	0.057	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endrin	<0.19		0.19	0.069	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endrin aldehyde	<0.19		0.19	0.040	ug/L		08/10/16 09:43	08/19/16 14:13	5
Endrin ketone	<0.19		0.19	0.082	ug/L		08/10/16 09:43	08/19/16 14:13	5
gamma-BHC (Lindane)	<0.19		0.19	0.027	ug/L		08/10/16 09:43	08/19/16 14:13	5
gamma-Chlordane	<0.19		0.19	0.035	ug/L		08/10/16 09:43	08/19/16 14:13	5
Heptachlor	<0.19		0.19	0.065	ug/L		08/10/16 09:43	08/19/16 14:13	5
Heptachlor epoxide	<0.19		0.19	0.067	ug/L		08/10/16 09:43	08/19/16 14:13	5
Methoxychlor	<0.39		0.39	0.11	ug/L		08/10/16 09:43	08/19/16 14:13	5
Toxaphene	<1.9		1.9	0.97	ug/L		08/10/16 09:43	08/19/16 14:13	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*3*	*X*	*30 - 143*	*08/10/16 09:43*	*08/19/16 14:13*	*5*
Tetrachloro-m-xylene	*116*		*30 - 120*	*08/10/16 09:43*	*08/19/16 14:13*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.39		0.39	0.065	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1016	<0.39		0.39	0.065	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1221	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1221	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1232	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1232	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1242	**4.8**		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1242	**7.0**		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1248	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1248	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1254	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1254	<0.39		0.39	0.19	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1260	<0.39		0.39	0.068	ug/L		08/10/16 09:43	08/10/16 17:19	1
PCB-1260	<0.39		0.39	0.068	ug/L		08/10/16 09:43	08/10/16 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*23*	*X*	*30 - 127*	*08/10/16 09:43*	*08/10/16 17:19*	*1*
Tetrachloro-m-xylene	*20*	*X*	*30 - 127*	*08/10/16 09:43*	*08/10/16 17:19*	*1*
DCB Decachlorobiphenyl	*8*	*X*	*30 - 150*	*08/10/16 09:43*	*08/10/16 17:19*	*1*
DCB Decachlorobiphenyl	*7*	*X*	*30 - 150*	*08/10/16 09:43*	*08/10/16 17:19*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1016	<0.37		0.37	0.062	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Date Collected: 08/09/16 11:45
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-2

Matrix: Water

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1242	~~3.6~~		~~0.37~~	~~0.18~~	~~ug/L~~		08/23/16 12:08	08/23/16 17:59	1
PCB-1242	8.1	JN	0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/23/16 12:08	08/23/16 17:59	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/23/16 12:08	08/23/16 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*18*	*X*	*30 - 127*	*08/23/16 12:08*	*08/23/16 17:59*	*1*
Tetrachloro-m-xylene	*32*		*30 - 127*	*08/23/16 12:08*	*08/23/16 17:59*	*1*
DCB Decachlorobiphenyl	*7*	*X*	*30 - 150*	*08/23/16 12:08*	*08/23/16 17:59*	*1*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 150*	*08/23/16 12:08*	*08/23/16 17:59*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.8		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:16	1
Antimony	0.017	J	0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:16	1
Arsenic	0.058		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:16	1
Barium	0.56		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:16	1
Cadmium	0.0076		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:16	1
Calcium	11		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:16	1
Chromium	0.48		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:16	1
Cobalt	0.043		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:16	1
Copper	0.082		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:16	1
Iron	4.3		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:16	1
Lead	0.70		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:16	1
Magnesium	20		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:16	1
Manganese	0.017		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:16	1
Nickel	0.16		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:16	1
Potassium	620		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:16	1
Selenium	0.011		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:16	1
Silver	0.0018	J	0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:16	1
Sodium	3400		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:05	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:16	1
Vanadium	0.081		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:16	1
Zinc	1.1		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.0		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:08	1
Antimony	0.0099	J	0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:08	1
Arsenic	0.052		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:08	1
Barium	0.51		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:08	1
Cadmium	0.0032		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:08	1
Calcium	11		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:08	1
Chromium	0.45		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:08	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-07-GW-08092016

Date Collected: 08/09/16 11:45
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-2

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.045		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:08	1
Copper	0.028		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:08	1
Iron	3.8		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:08	1
Lead	0.15		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:08	1
Magnesium	21		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:08	1
Manganese	0.014		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:08	1
Nickel	0.17		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:08	1
Potassium	660		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:08	1
Selenium	0.012		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:08	1
Sodium	3500		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:21	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:08	1
Vanadium	0.072		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:08	1
Zinc	0.41		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0013	~~B~~	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:26	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00050	~~B~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	5.8		1.0	0.18	mg/L			08/11/16 09:27	1
Sulfate	50 ~~36~~	~~J B~~ UB	50	15	mg/L			08/17/16 06:57	10
Total Organic Carbon - Duplicates	650		40	11	mg/L			08/16/16 00:49	40
Nitrogen, Nitrate	0.12		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	12		5.0	2.5	mg/L			08/11/16 12:24	1
Ammonia	630	~~B~~	40	5.7	mg/L		08/16/16 21:15	08/18/16 22:36	50
Nitrogen, Nitrite	<0.10		0.10	0.044	mg/L			08/10/16 11:12	5
Nitrogen, Nitrate Nitrite	0.12		0.10	0.035	mg/L			08/16/16 23:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 03:05	1
Benzene	<0.50		0.50	0.15	ug/L			08/12/16 03:05	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 03:05	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 03:05	1
Bromomethane	<2.0	J	2.0	0.80	ug/L			08/12/16 03:05	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 03:05	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 03:05	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 03:05	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 03:05	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 03:05	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 03:05	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 03:05	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 03:05	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 03:05	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 03:05	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 03:05	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 03:05	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/12/16 03:05	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 03:05	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 03:05	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 03:05	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 03:05	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 03:05	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 03:05	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 03:05	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 03:05	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 03:05	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 03:05	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 03:05	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 03:05	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 03:05	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 03:05	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 03:05	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 03:05	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 03:05	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 03:05	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 03:05	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 03:05	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 03:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 03:05	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 03:05	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 03:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Date Collected: 08/09/16 13:45
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 03:05*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 03:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 03:05*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 03:05*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.76		0.76	0.24	ug/L		08/10/16 16:28	08/15/16 14:56	1
Acenaphthylene	<0.76		0.76	0.20	ug/L		08/10/16 16:28	08/15/16 14:56	1
Acetophenone	<3.8	J	3.8	0.51	ug/L		08/10/16 16:28	08/15/16 14:56	1
Anthracene	<0.76		0.76	0.25	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[g,h,i]perylene	<0.76		0.76	0.29	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		08/10/16 16:28	08/15/16 14:56	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 14:56	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 14:56	1
Bis(2-ethylhexyl) phthalate	<7.6		7.6	1.3	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		08/10/16 16:28	08/15/16 14:56	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		08/10/16 16:28	08/15/16 14:56	1
Carbazole	<3.8		3.8	0.27	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Chloroaniline	<7.6	J	7.6	1.5	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Chloro-3-methylphenol	<7.6		7.6	1.8	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		08/10/16 16:28	08/15/16 14:56	1
Chrysene	<0.38		0.38	0.052	ug/L		08/10/16 16:28	08/15/16 14:56	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		08/10/16 16:28	08/15/16 14:56	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		08/10/16 16:28	08/15/16 14:56	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dichlorophenol	<7.6		7.6	2.0	ug/L		08/10/16 16:28	08/15/16 14:56	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dimethylphenol	<7.6		7.6	1.4	ug/L		08/10/16 16:28	08/15/16 14:56	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		08/10/16 16:28	08/15/16 14:56	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		08/10/16 16:28	08/15/16 14:56	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4-Dinitrotoluene	<0.76		0.76	0.19	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,6-Dinitrotoluene	<0.38		0.38	0.056	ug/L		08/10/16 16:28	08/15/16 14:56	1
Di-n-octyl phthalate	<7.6		7.6	0.80	ug/L		08/10/16 16:28	08/15/16 14:56	1
Fluoranthene	<0.76		0.76	0.35	ug/L		08/10/16 16:28	08/15/16 14:56	1
Fluorene	<0.76		0.76	0.19	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachlorocyclopentadiene	<15	J	15	4.9	ug/L		08/10/16 16:28	08/15/16 14:56	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		08/10/16 16:28	08/15/16 14:56	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		08/10/16 16:28	08/15/16 14:56	1
Isophorone	<1.5		1.5	0.29	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Methylnaphthalene	<1.5		1.5	0.050	ug/L		08/10/16 16:28	08/15/16 14:56	1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 14:56	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		08/10/16 16:28	08/15/16 14:56	1
Naphthalene	<0.76		0.76	0.24	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Nitroaniline	<3.8		3.8	0.98	ug/L		08/10/16 16:28	08/15/16 14:56	1
3-Nitroaniline	<7.6		7.6	1.4	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Nitroaniline	<7.6	J	7.6	1.3	ug/L		08/10/16 16:28	08/15/16 14:56	1
Nitrobenzene	<0.76		0.76	0.34	ug/L		08/10/16 16:28	08/15/16 14:56	1
2-Nitrophenol	<7.6		7.6	1.9	ug/L		08/10/16 16:28	08/15/16 14:56	1
4-Nitrophenol	<15		15	5.7	ug/L		08/10/16 16:28	08/15/16 14:56	1
N-Nitrosodi-n-propylamine	<0.38	J	0.38	0.12	ug/L		08/10/16 16:28	08/15/16 14:56	1
N-Nitrosodiphenylamine	<0.76		0.76	0.28	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		08/10/16 16:28	08/15/16 14:56	1
Pentachlorophenol	<15	J	15	3.0	ug/L		08/10/16 16:28	08/15/16 14:56	1
Phenanthrene	<0.76		0.76	0.23	ug/L		08/10/16 16:28	08/15/16 14:56	1
Phenol	<3.8		3.8	0.51	ug/L		08/10/16 16:28	08/15/16 14:56	1
Pyrene	<0.76		0.76	0.32	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4,5-Trichlorophenol	<7.6		7.6	2.0	ug/L		08/10/16 16:28	08/15/16 14:56	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		08/10/16 16:28	08/15/16 14:56	1
Benzaldehyde	<30	^ J	30	12	ug/L		08/10/16 16:28	08/15/16 14:56	1
Caprolactam	<7.6		7.6	1.1	ug/L		08/10/16 16:28	08/15/16 14:56	1
Atrazine	<3.8		3.8	0.48	ug/L		08/10/16 16:28	08/15/16 14:56	1
1,1'-Biphenyl	<3.8		3.8	0.28	ug/L		08/10/16 16:28	08/15/16 14:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*30 - 123*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
Nitrobenzene-d5 (Surr)	*62*		*33 - 139*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
Phenol-d5 (Surr)	*45*		*20 - 100*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
Terphenyl-d14 (Surr)	*88*		*42 - 150*	*08/10/16 16:28*	*08/15/16 14:56*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*08/10/16 16:28*	*08/15/16 14:56*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0050	ug/L		08/10/16 09:43	08/19/16 14:32	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		08/10/16 09:43	08/19/16 14:32	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/10/16 09:43	08/19/16 14:32	1
beta-BHC	<0.037		0.037	0.0096	ug/L		08/10/16 09:43	08/19/16 14:32	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 14:32	1
4,4'-DDE	<0.037		0.037	0.0036	ug/L		08/10/16 09:43	08/19/16 14:32	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/10/16 09:43	08/19/16 14:32	1
delta-BHC	<0.037		0.037	0.0096	ug/L		08/10/16 09:43	08/19/16 14:32	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endrin	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endrin aldehyde	<0.037		0.037	0.0077	ug/L		08/10/16 09:43	08/19/16 14:32	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/10/16 09:43	08/19/16 14:32	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		08/10/16 09:43	08/19/16 14:32	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		08/10/16 09:43	08/19/16 14:32	1

Client Sample ID: MW-08-GW-08092016

Lab Sample ID: 500-115474-3

Date Collected: 08/09/16 13:45

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 14:32	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 14:32	1
Methoxychlor	<0.075		0.075	0.022	ug/L		08/10/16 09:43	08/19/16 14:32	1
Toxaphene	<0.37		0.37	0.19	ug/L		08/10/16 09:43	08/19/16 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*89*		*30 - 143*	*08/10/16 09:43*	*08/19/16 14:32*	*1*
Tetrachloro-m-xylene	*58*		*30 - 120*	*08/10/16 09:43*	*08/19/16 14:32*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/15/16 17:48	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/15/16 09:16	08/15/16 17:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*85*		*30 - 127*	*08/15/16 09:16*	*08/15/16 17:48*	*1*
DCB Decachlorobiphenyl	*140*		*30 - 150*	*08/15/16 09:16*	*08/15/16 17:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:21	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:21	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:21	1
Barium	**0.65**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:21	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:21	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:21	1
Calcium	**110**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:21	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:21	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:21	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:21	1
Iron	**10**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:21	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:21	1
Magnesium	**82**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:21	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:21	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:21	1
Potassium	**37**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:21	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:21	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:21	1
Sodium	**230**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:21	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:21	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:21	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:21	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-08-GW-08092016

Date Collected: 08/09/16 13:45
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:13	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:13	1
Barium	**0.71**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:13	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:13	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:13	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:13	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:13	1
Iron	**10**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:13	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:13	1
Magnesium	**91**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:13	1
Manganese	**0.18**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:13	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:13	1
Potassium	**41**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:13	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:13	1
Sodium	**250**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:13	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:13	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury 0.0002	~~**0.00017**~~	~~**J B**~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury 0.00020	~~**0.00011**~~	~~**J B**~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/11/16 09:30	1
Sulfate 5.0	~~**2.4**~~	~~**J B**~~ UB	5.0	1.5	mg/L			08/17/16 06:50	1
Total Organic Carbon - Duplicates	**16**	~~**F1**~~ J	1.0	0.27	mg/L			08/16/16 01:06	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**23**		5.0	2.5	mg/L			08/11/16 12:25	1
Ammonia	**41**	~~**B**~~	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 20:58	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:12	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 03:31	1
Benzene	**1.6**		0.50	0.15	ug/L			08/12/16 03:31	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 03:31	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 03:31	1
Bromomethane	<2.0	J	2.0	0.80	ug/L			08/12/16 03:31	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 03:31	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 03:31	1
Chlorobenzene	**15**		1.0	0.39	ug/L			08/12/16 03:31	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 03:31	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 03:31	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 03:31	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 03:31	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 03:31	1
Cyclohexane	**1.8**		1.0	0.49	ug/L			08/12/16 03:31	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 03:31	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 03:31	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 03:31	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 03:31	1
1,4-Dichlorobenzene	**1.5**		1.0	0.36	ug/L			08/12/16 03:31	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 03:31	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 03:31	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 03:31	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 03:31	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 03:31	1
Isopropylbenzene	**3.4**		1.0	0.39	ug/L			08/12/16 03:31	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 03:31	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			08/12/16 03:31	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 03:31	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 03:31	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 03:31	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 03:31	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 03:31	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 03:31	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 03:31	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 03:31	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 03:31	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 03:31	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 03:31	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 03:31	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 03:31	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 03:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 03:31	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 03:31	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 03:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Date Collected: 08/09/16 15:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*71 - 120*		*08/12/16 03:31*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 03:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*08/12/16 03:31*	*1*
Toluene-d8 (Surr)	*106*		*75 - 120*		*08/12/16 03:31*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.0**		0.78	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
Acenaphthylene	<0.78		0.78	0.21	ug/L		08/10/16 16:28	08/15/16 15:22	1
Acetophenone	<3.9	J	3.9	0.51	ug/L		08/10/16 16:28	08/15/16 15:22	1
Anthracene	<0.78		0.78	0.26	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[a]anthracene	<0.16		0.16	0.044	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[a]pyrene	<0.16		0.16	0.077	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[b]fluoranthene	<0.16		0.16	0.063	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[g,h,i]perylene	<0.78		0.78	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzo[k]fluoranthene	<0.16		0.16	0.050	ug/L		08/10/16 16:28	08/15/16 15:22	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.22	ug/L		08/10/16 16:28	08/15/16 15:22	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		08/10/16 16:28	08/15/16 15:22	1
Bis(2-ethylhexyl) phthalate	<7.8		7.8	1.3	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Bromophenyl phenyl ether	<3.9		3.9	0.42	ug/L		08/10/16 16:28	08/15/16 15:22	1
Butyl benzyl phthalate	<1.6		1.6	0.37	ug/L		08/10/16 16:28	08/15/16 15:22	1
Carbazole	<3.9		3.9	0.27	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Chloroaniline	<7.8	J	7.8	1.6	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Chloro-3-methylphenol	<7.8		7.8	1.8	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Chloronaphthalene	<1.6		1.6	0.18	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Chlorophenol	<3.9		3.9	0.43	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Chlorophenyl phenyl ether	<3.9		3.9	0.49	ug/L		08/10/16 16:28	08/15/16 15:22	1
Chrysene	<0.39		0.39	0.053	ug/L		08/10/16 16:28	08/15/16 15:22	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		08/10/16 16:28	08/15/16 15:22	1
Dibenzofuran	**0.22**	**J**	1.6	0.20	ug/L		08/10/16 16:28	08/15/16 15:22	1
3,3'-Dichlorobenzidine	<3.9		3.9	1.3	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dichlorophenol	<7.8		7.8	2.0	ug/L		08/10/16 16:28	08/15/16 15:22	1
Diethyl phthalate	<1.6		1.6	0.28	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dimethylphenol	<7.8		7.8	1.4	ug/L		08/10/16 16:28	08/15/16 15:22	1
Dimethyl phthalate	<1.6		1.6	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
Di-n-butyl phthalate	<3.9		3.9	0.57	ug/L		08/10/16 16:28	08/15/16 15:22	1
4,6-Dinitro-2-methylphenol	<16		16	4.6	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dinitrophenol	<16		16	6.7	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4-Dinitrotoluene	<0.78		0.78	0.19	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,6-Dinitrotoluene	<0.39		0.39	0.057	ug/L		08/10/16 16:28	08/15/16 15:22	1
Di-n-octyl phthalate	<7.8		7.8	0.81	ug/L		08/10/16 16:28	08/15/16 15:22	1
Fluoranthene	<0.78		0.78	0.35	ug/L		08/10/16 16:28	08/15/16 15:22	1
Fluorene	**0.49**	**J**	0.78	0.19	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachlorobenzene	<0.39		0.39	0.062	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachlorobutadiene	<3.9		3.9	0.40	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachlorocyclopentadiene	<16	J	16	4.9	ug/L		08/10/16 16:28	08/15/16 15:22	1
Hexachloroethane	<3.9		3.9	0.46	ug/L		08/10/16 16:28	08/15/16 15:22	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.058	ug/L		08/10/16 16:28	08/15/16 15:22	1
Isophorone	<1.6		1.6	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Methylnaphthalene	**2.5**		1.6	0.051	ug/L		08/10/16 16:28	08/15/16 15:22	1

Client Sample ID: MW-09-GW-08092016

Date Collected: 08/09/16 15:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.6		1.6	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
3 & 4 Methylphenol	**2.5**		1.6	0.35	ug/L		08/10/16 16:28	08/15/16 15:22	1
Naphthalene	**0.33**	J	0.78	0.24	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Nitroaniline	<3.9		3.9	1.0	ug/L		08/10/16 16:28	08/15/16 15:22	1
3-Nitroaniline	<7.8		7.8	1.4	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Nitroaniline	<7.8	J	7.8	1.3	ug/L		08/10/16 16:28	08/15/16 15:22	1
Nitrobenzene	<0.78		0.78	0.35	ug/L		08/10/16 16:28	08/15/16 15:22	1
2-Nitrophenol	<7.8		7.8	1.9	ug/L		08/10/16 16:28	08/15/16 15:22	1
4-Nitrophenol	<16		16	5.8	ug/L		08/10/16 16:28	08/15/16 15:22	1
N-Nitrosodi-n-propylamine	<0.39	J	0.39	0.12	ug/L		08/10/16 16:28	08/15/16 15:22	1
N-Nitrosodiphenylamine	<0.78		0.78	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.29	ug/L		08/10/16 16:28	08/15/16 15:22	1
Pentachlorophenol	<16	J	16	3.1	ug/L		08/10/16 16:28	08/15/16 15:22	1
Phenanthrene	**0.55**	J	0.78	0.23	ug/L		08/10/16 16:28	08/15/16 15:22	1
Phenol	<3.9		3.9	0.52	ug/L		08/10/16 16:28	08/15/16 15:22	1
Pyrene	<0.78		0.78	0.33	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4,5-Trichlorophenol	<7.8		7.8	2.0	ug/L		08/10/16 16:28	08/15/16 15:22	1
2,4,6-Trichlorophenol	<3.9		3.9	0.56	ug/L		08/10/16 16:28	08/15/16 15:22	1
Benzaldehyde	<31	J	31	12	ug/L		08/10/16 16:28	08/15/16 15:22	1
Caprolactam	<7.8		7.8	1.2	ug/L		08/10/16 16:28	08/15/16 15:22	1
Atrazine	<3.9		3.9	0.48	ug/L		08/10/16 16:28	08/15/16 15:22	1
1,1'-Biphenyl	<3.9		3.9	0.28	ug/L		08/10/16 16:28	08/15/16 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*56*		*30 - 123*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
2-Fluorophenol (Surr)	*43*		*30 - 110*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
Nitrobenzene-d5 (Surr)	*47*		*33 - 139*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
Terphenyl-d14 (Surr)	*92*		*42 - 150*	*08/10/16 16:28*	*08/15/16 15:22*	*1*
2,4,6-Tribromophenol (Surr)	*77*		*30 - 150*	*08/10/16 16:28*	*08/15/16 15:22*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		08/10/16 09:43	08/19/16 14:51	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		08/10/16 09:43	08/19/16 14:51	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		08/10/16 09:43	08/19/16 14:51	1
beta-BHC	<0.038		0.038	0.0097	ug/L		08/10/16 09:43	08/19/16 14:51	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		08/10/16 09:43	08/19/16 14:51	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		08/10/16 09:43	08/19/16 14:51	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		08/10/16 09:43	08/19/16 14:51	1
delta-BHC	<0.038		0.038	0.0098	ug/L		08/10/16 09:43	08/19/16 14:51	1
Dieldrin	<0.038		0.038	0.012	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endrin	<0.038		0.038	0.014	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		08/10/16 09:43	08/19/16 14:51	1
Endrin ketone	<0.038		0.038	0.016	ug/L		08/10/16 09:43	08/19/16 14:51	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		08/10/16 09:43	08/19/16 14:51	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		08/10/16 09:43	08/19/16 14:51	1

Client Sample ID: MW-09-GW-08092016

Lab Sample ID: 500-115474-4

Date Collected: 08/09/16 15:30

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.038		0.038	0.013	ug/L		08/10/16 09:43	08/19/16 14:51	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		08/10/16 09:43	08/19/16 14:51	1
Methoxychlor	<0.076		0.076	0.022	ug/L		08/10/16 09:43	08/19/16 14:51	1
Toxaphene	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/19/16 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*08/10/16 09:43*	*08/19/16 14:51*	*1*
Tetrachloro-m-xylene	*61*		*30 - 120*	*08/10/16 09:43*	*08/19/16 14:51*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1221	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1232	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1242	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1248	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1254	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/10/16 17:49	1
PCB-1260	<0.38		0.38	0.067	ug/L		08/10/16 09:43	08/10/16 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*65*		*30 - 127*	*08/10/16 09:43*	*08/10/16 17:49*	*1*
DCB Decachlorobiphenyl	*80*		*30 - 150*	*08/10/16 09:43*	*08/10/16 17:49*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:26	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:26	1
Barium	**0.83**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:26	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:26	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:26	1
Chromium	**0.0044**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:26	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:26	1
Iron	**25**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:26	1
Magnesium	**83**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:26	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:26	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:26	1
Potassium	**76**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:26	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:26	1
Sodium	**200**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:26	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:26	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:26	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-09-GW-08092016

Date Collected: 08/09/16 15:30
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:18	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:18	1
Barium	**0.81**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:18	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:18	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:18	1
Chromium	**0.0039**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:18	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:18	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:18	1
Iron	**25**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:18	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:18	1
Magnesium	**82**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:18	1
Manganese	**0.17**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:18	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:18	1
Potassium	**75**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:18	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:18	1
Sodium	**200**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:18	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:18	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:18	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury 0.00020	~~**0.00012**~~	~~**J B**~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			08/11/16 09:34	1
Sulfate 5.0	~~**3.9**~~	~~**J B**~~ UB	5.0	1.5	mg/L			08/17/16 06:58	1
Total Organic Carbon - Duplicates	**27**		1.0	0.27	mg/L			08/16/16 02:02	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**52**		5.0	2.5	mg/L			08/11/16 12:27	1
Ammonia	**74**	~~**B**~~	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:01	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:12	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			08/12/16 03:58	1
Benzene	**0.56**		0.50	0.15	ug/L			08/12/16 03:58	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 03:58	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 03:58	1
Bromomethane	<2.0	J	2.0	0.80	ug/L			08/12/16 03:58	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 03:58	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 03:58	1
Chlorobenzene	**1.6**		1.0	0.39	ug/L			08/12/16 03:58	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 03:58	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 03:58	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 03:58	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 03:58	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 03:58	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 03:58	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 03:58	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 03:58	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			08/12/16 03:58	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 03:58	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			08/12/16 03:58	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 03:58	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 03:58	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 03:58	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			08/12/16 03:58	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 03:58	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 03:58	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 03:58	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 03:58	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 03:58	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 03:58	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 03:58	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 03:58	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 03:58	1
Toluene	<0.50		0.50	0.15	ug/L			08/12/16 03:58	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 03:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 03:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 03:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 03:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 03:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 03:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 03:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 03:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 03:58	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			08/12/16 03:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-10-GW-08092016

Date Collected: 08/09/16 14:10
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*08/12/16 03:58*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 03:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*08/12/16 03:58*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 03:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		08/10/16 16:28	08/15/16 15:48	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		08/10/16 16:28	08/15/16 15:48	1
Acetophenone	<3.6	J	3.6	0.48	ug/L		08/10/16 16:28	08/15/16 15:48	1
Anthracene	<0.73		0.73	0.24	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		08/10/16 16:28	08/15/16 15:48	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/10/16 16:28	08/15/16 15:48	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		08/10/16 16:28	08/15/16 15:48	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.2	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		08/10/16 16:28	08/15/16 15:48	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/10/16 16:28	08/15/16 15:48	1
Carbazole	<3.6		3.6	0.26	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Chloroaniline	<7.3	J	7.3	1.5	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Chlorophenol	<3.6		3.6	0.41	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		08/10/16 16:28	08/15/16 15:48	1
Chrysene	<0.36		0.36	0.050	ug/L		08/10/16 16:28	08/15/16 15:48	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		08/10/16 16:28	08/15/16 15:48	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		08/10/16 16:28	08/15/16 15:48	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		08/10/16 16:28	08/15/16 15:48	1
Diethyl phthalate	**0.34**	**J**	1.5	0.26	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 15:48	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		08/10/16 16:28	08/15/16 15:48	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,6-Dinitrotoluene	<0.36		0.36	0.054	ug/L		08/10/16 16:28	08/15/16 15:48	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		08/10/16 16:28	08/15/16 15:48	1
Fluoranthene	<0.73		0.73	0.33	ug/L		08/10/16 16:28	08/15/16 15:48	1
Fluorene	<0.73		0.73	0.18	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachlorobutadiene	<3.6		3.6	0.38	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachlorocyclopentadiene	<15	J	15	4.6	ug/L		08/10/16 16:28	08/15/16 15:48	1
Hexachloroethane	<3.6		3.6	0.44	ug/L		08/10/16 16:28	08/15/16 15:48	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		08/10/16 16:28	08/15/16 15:48	1
Isophorone	<1.5		1.5	0.27	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		08/10/16 16:28	08/15/16 15:48	1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 15:48	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		08/10/16 16:28	08/15/16 15:48	1
Naphthalene	<0.73		0.73	0.23	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		08/10/16 16:28	08/15/16 15:48	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Nitroaniline	<7.3	J	7.3	1.2	ug/L		08/10/16 16:28	08/15/16 15:48	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		08/10/16 16:28	08/15/16 15:48	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		08/10/16 16:28	08/15/16 15:48	1
4-Nitrophenol	<15		15	5.4	ug/L		08/10/16 16:28	08/15/16 15:48	1
N-Nitrosodi-n-propylamine	<0.36	J	0.36	0.11	ug/L		08/10/16 16:28	08/15/16 15:48	1
N-Nitrosodiphenylamine	**0.96**		0.73	0.27	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 15:48	1
Pentachlorophenol	<15	J	15	2.9	ug/L		08/10/16 16:28	08/15/16 15:48	1
Phenanthrene	<0.73		0.73	0.22	ug/L		08/10/16 16:28	08/15/16 15:48	1
Phenol	<3.6		3.6	0.49	ug/L		08/10/16 16:28	08/15/16 15:48	1
Pyrene	<0.73		0.73	0.31	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		08/10/16 16:28	08/15/16 15:48	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		08/10/16 16:28	08/15/16 15:48	1
Benzaldehyde	<29	~~J~~ J	29	11	ug/L		08/10/16 16:28	08/15/16 15:48	1
Caprolactam	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 15:48	1
Atrazine	<3.6		3.6	0.46	ug/L		08/10/16 16:28	08/15/16 15:48	1
1,1'-Biphenyl	<3.6		3.6	0.26	ug/L		08/10/16 16:28	08/15/16 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*30 - 123*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
Phenol-d5 (Surr)	*50*		*20 - 100*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
Terphenyl-d14 (Surr)	*94*		*42 - 150*	*08/10/16 16:28*	*08/15/16 15:48*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*30 - 150*	*08/10/16 16:28*	*08/15/16 15:48*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		08/10/16 09:43	08/19/16 15:10	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		08/10/16 09:43	08/19/16 15:10	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		08/10/16 09:43	08/19/16 15:10	1
beta-BHC	<0.037		0.037	0.0094	ug/L		08/10/16 09:43	08/19/16 15:10	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:10	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/10/16 09:43	08/19/16 15:10	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		08/10/16 09:43	08/19/16 15:10	1
delta-BHC	<0.037		0.037	0.0095	ug/L		08/10/16 09:43	08/19/16 15:10	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endrin	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		08/10/16 09:43	08/19/16 15:10	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/10/16 09:43	08/19/16 15:10	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		08/10/16 09:43	08/19/16 15:10	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/10/16 09:43	08/19/16 15:10	1

Client Sample ID: MW-10-GW-08092016

Lab Sample ID: 500-115474-5

Date Collected: 08/09/16 14:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:10	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:10	1
Methoxychlor	<0.074		0.074	0.021	ug/L		08/10/16 09:43	08/19/16 15:10	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/19/16 15:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*08/10/16 09:43*	*08/19/16 15:10*	*1*
Tetrachloro-m-xylene	*56*		*30 - 120*	*08/10/16 09:43*	*08/19/16 15:10*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:12	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/10/16 09:43	08/12/16 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*08/10/16 09:43*	*08/12/16 16:12*	*1*
DCB Decachlorobiphenyl	*78*		*30 - 150*	*08/10/16 09:43*	*08/12/16 16:12*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:31	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:31	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:31	1
Barium	**0.46**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:31	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:31	1
Calcium	**120**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:31	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:31	1
Copper	**0.0033**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:31	1
Iron	**7.0**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:31	1
Lead	**0.0035**	**J**	0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:31	1
Magnesium	**60**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:31	1
Manganese	**0.56**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:31	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:31	1
Potassium	**56**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:31	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:31	1
Sodium	**160**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:31	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:31	1
Zinc	**0.032**		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-10-GW-08092016

Date Collected: 08/09/16 14:10
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-5

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:22	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:22	1
Barium	**0.47**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:22	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:22	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:22	1
Calcium	**130**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:22	1
Chromium	<0.010		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:22	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:22	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:22	1
Iron	**7.4**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:22	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:22	1
Magnesium	**64**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:22	1
Manganese	**0.61**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:22	1
Nickel	<0.010		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:22	1
Potassium	**58**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:22	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:22	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:22	1
Sodium	**170**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:22	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:22	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:22	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury 0.00020	~~**0.00014**~~	~~**J B**~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.57**	**J**	1.0	0.18	mg/L			08/11/16 09:38	1
Sulfate	**75**	~~**B**~~	20	5.9	mg/L			08/17/16 06:59	4
Total Organic Carbon - Duplicates	**17**		1.0	0.27	mg/L			08/16/16 02:18	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**17**		5.0	2.5	mg/L			08/11/16 12:29	1
Ammonia	**14**	~~**B**~~	1.0	0.14	mg/L		08/16/16 21:15	08/18/16 21:04	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:13	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**16**		5.0	1.7	ug/L			08/12/16 04:25	1
Benzene	**100**		0.50	0.15	ug/L			08/12/16 04:25	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 04:25	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 04:25	1
Bromomethane	<2.0	J	2.0	0.80	ug/L			08/12/16 04:25	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 04:25	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 04:25	1
Chlorobenzene	**10**		1.0	0.39	ug/L			08/12/16 04:25	1
Chloroethane	**4.6**		1.0	0.51	ug/L			08/12/16 04:25	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 04:25	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 04:25	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			08/12/16 04:25	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 04:25	1
Cyclohexane	**100**		1.0	0.49	ug/L			08/12/16 04:25	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 04:25	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			08/12/16 04:25	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,2-Dichlorobenzene	**1.1**		1.0	0.33	ug/L			08/12/16 04:25	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 04:25	1
1,4-Dichlorobenzene	**3.2**		1.0	0.36	ug/L			08/12/16 04:25	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 04:25	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 04:25	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 04:25	1
Ethylbenzene	**11**		0.50	0.18	ug/L			08/12/16 04:25	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 04:25	1
Isopropylbenzene	**51**		1.0	0.39	ug/L			08/12/16 04:25	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 04:25	1
Methylcyclohexane	**110**		1.0	0.32	ug/L			08/12/16 04:25	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 04:25	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			08/12/16 04:25	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			08/12/16 04:25	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 04:25	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 04:25	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 04:25	1
Toluene	**8.2**		0.50	0.15	ug/L			08/12/16 04:25	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 04:25	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 04:25	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 04:25	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 04:25	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 04:25	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 04:25	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 04:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 04:25	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			08/12/16 04:25	1
Xylenes, Total	**67**		1.0	0.22	ug/L			08/12/16 04:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Date Collected: 08/09/16 12:10
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 04:25*	*1*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 04:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*08/12/16 04:25*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 04:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		08/10/16 16:28	08/15/16 16:13	1
Acetophenone	**0.57**	**J**	3.7	0.49	ug/L		08/10/16 16:28	08/15/16 16:13	1
Anthracene	<0.74		0.74	0.25	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		08/10/16 16:28	08/15/16 16:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		08/10/16 16:28	08/15/16 16:13	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		08/10/16 16:28	08/15/16 16:13	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		08/10/16 16:28	08/15/16 16:13	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		08/10/16 16:28	08/15/16 16:13	1
Carbazole	<3.7		3.7	0.26	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Chloroaniline	<7.4	J	7.4	1.5	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		08/10/16 16:28	08/15/16 16:13	1
Chrysene	<0.37		0.37	0.050	ug/L		08/10/16 16:28	08/15/16 16:13	1
Dibenz(a,h)anthracene	<0.22		0.22	0.038	ug/L		08/10/16 16:28	08/15/16 16:13	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		08/10/16 16:28	08/15/16 16:13	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		08/10/16 16:28	08/15/16 16:13	1
Diethyl phthalate	**0.62**	**J**	1.5	0.27	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		08/10/16 16:28	08/15/16 16:13	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,6-Dinitrotoluene	<0.37		0.37	0.055	ug/L		08/10/16 16:28	08/15/16 16:13	1
Di-n-octyl phthalate	<7.4		7.4	0.78	ug/L		08/10/16 16:28	08/15/16 16:13	1
Fluoranthene	<0.74		0.74	0.34	ug/L		08/10/16 16:28	08/15/16 16:13	1
Fluorene	<0.74		0.74	0.18	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachlorocyclopentadiene	<15	J	15	4.7	ug/L		08/10/16 16:28	08/15/16 16:13	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		08/10/16 16:28	08/15/16 16:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		08/10/16 16:28	08/15/16 16:13	1
Isophorone	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Methylnaphthalene	**2.3**		1.5	0.048	ug/L		08/10/16 16:28	08/15/16 16:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Date Collected: 08/09/16 12:10
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-6

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		08/10/16 16:28	08/15/16 16:13	1
Naphthalene	**2.4**		0.74	0.23	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		08/10/16 16:28	08/15/16 16:13	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Nitroaniline	<7.4	J	7.4	1.2	ug/L		08/10/16 16:28	08/15/16 16:13	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		08/10/16 16:28	08/15/16 16:13	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		08/10/16 16:28	08/15/16 16:13	1
4-Nitrophenol	<15		15	5.5	ug/L		08/10/16 16:28	08/15/16 16:13	1
N-Nitrosodi-n-propylamine	<0.37	J	0.37	0.11	ug/L		08/10/16 16:28	08/15/16 16:13	1
N-Nitrosodiphenylamine	**1.3**		0.74	0.27	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		08/10/16 16:28	08/15/16 16:13	1
Pentachlorophenol	<15	J	15	2.9	ug/L		08/10/16 16:28	08/15/16 16:13	1
Phenanthrene	**0.36**	**J**	0.74	0.22	ug/L		08/10/16 16:28	08/15/16 16:13	1
Phenol	**0.97**	**J**	3.7	0.50	ug/L		08/10/16 16:28	08/15/16 16:13	1
Pyrene	<0.74		0.74	0.32	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		08/10/16 16:28	08/15/16 16:13	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		08/10/16 16:28	08/15/16 16:13	1
Benzaldehyde	<30	^ J	30	11	ug/L		08/10/16 16:28	08/15/16 16:13	1
Caprolactam	<7.4		7.4	1.1	ug/L		08/10/16 16:28	08/15/16 16:13	1
Atrazine	<3.7		3.7	0.46	ug/L		08/10/16 16:28	08/15/16 16:13	1
1,1'-Biphenyl	**2.6**	**J**	3.7	0.27	ug/L		08/10/16 16:28	08/15/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*48*		*30 - 123*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
2-Fluorophenol (Surr)	*42*		*30 - 110*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
Nitrobenzene-d5 (Surr)	*46*		*33 - 139*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
Terphenyl-d14 (Surr)	*79*		*42 - 150*	*08/10/16 16:28*	*08/15/16 16:13*	*1*
2,4,6-Tribromophenol (Surr)	*64*		*30 - 150*	*08/10/16 16:28*	*08/15/16 16:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		08/10/16 09:43	08/19/16 15:30	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		08/10/16 09:43	08/19/16 15:30	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		08/10/16 09:43	08/19/16 15:30	1
beta-BHC	<0.037		0.037	0.0093	ug/L		08/10/16 09:43	08/19/16 15:30	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:30	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		08/10/16 09:43	08/19/16 15:30	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		08/10/16 09:43	08/19/16 15:30	1
delta-BHC	<0.037		0.037	0.0094	ug/L		08/10/16 09:43	08/19/16 15:30	1
Dieldrin	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endrin	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		08/10/16 09:43	08/19/16 15:30	1
Endrin ketone	<0.037		0.037	0.016	ug/L		08/10/16 09:43	08/19/16 15:30	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		08/10/16 09:43	08/19/16 15:30	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		08/10/16 09:43	08/19/16 15:30	1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		08/10/16 09:43	08/19/16 15:30	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		08/10/16 09:43	08/19/16 15:30	1
Methoxychlor	<0.073		0.073	0.021	ug/L		08/10/16 09:43	08/19/16 15:30	1
Toxaphene	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/19/16 15:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*45*		*30 - 143*	*08/10/16 09:43*	*08/19/16 15:30*	*1*
Tetrachloro-m-xylene	*76*		*30 - 120*	*08/10/16 09:43*	*08/19/16 15:30*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1221	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1232	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1242	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1248	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1254	<0.37		0.37	0.19	ug/L		08/15/16 09:16	08/15/16 18:04	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/15/16 09:16	08/15/16 18:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*08/15/16 09:16*	*08/15/16 18:04*	*1*
DCB Decachlorobiphenyl	*77*		*30 - 150*	*08/15/16 09:16*	*08/15/16 18:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:35	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:35	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:35	1
Barium	**0.85**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:35	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:35	1
Calcium	**130**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:35	1
Chromium	**0.0088**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:35	1
Cobalt	**0.0014**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:35	1
Copper	**0.0026**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:35	1
Iron	**29**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:35	1
Lead	**0.0043**	**J**	0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:35	1
Magnesium	**110**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:35	1
Manganese	**0.24**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:35	1
Nickel	**0.017**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:35	1
Potassium	**110**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:35	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:35	1
Sodium	**350**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:35	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:35	1
Vanadium	**0.0058**		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:35	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-11-GW-08092016

Lab Sample ID: 500-115474-6

Date Collected: 08/09/16 12:10
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:27	1
Arsenic	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:27	1
Barium	**0.82**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:27	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:27	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:27	1
Calcium	**130**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:27	1
Chromium	**0.0081**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:27	1
Cobalt	**0.0013**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:27	1
Copper	**0.0028**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:27	1
Iron	**28**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:27	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:27	1
Magnesium	**110**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:27	1
Manganese	**0.23**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:27	1
Nickel	**0.016**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:27	1
Potassium	**110**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:27	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:27	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:27	1
Sodium	**350**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:27	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:27	1
Vanadium	**0.0050**		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:27	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.46**	**J**	1.0	0.18	mg/L			08/11/16 09:42	1
Sulfate	**5.9**	~~**B**~~ UB	5.0	1.5	mg/L			08/18/16 06:38	1
Total Organic Carbon - Duplicates	**67**		4.0	1.1	mg/L			08/16/16 02:35	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**73**		5.0	2.5	mg/L			08/11/16 12:31	1
Ammonia	**60**	~~**B**~~	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:07	20
Nitrogen, Nitrite	<0.040		0.040	0.018	mg/L			08/10/16 11:13	2
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		25	8.7	ug/L			08/12/16 04:51	5
Benzene	**430**		2.5	0.73	ug/L			08/12/16 04:51	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
Bromoform	<5.0		5.0	2.4	ug/L			08/12/16 04:51	5
Bromomethane	<10	J	10	4.0	ug/L			08/12/16 04:51	5
Carbon disulfide	<10		10	2.2	ug/L			08/12/16 04:51	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
Chlorobenzene	**3.1**	**J**	5.0	1.9	ug/L			08/12/16 04:51	5
Chloroethane	<5.0		5.0	2.5	ug/L			08/12/16 04:51	5
Chloroform	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
Chloromethane	<5.0		5.0	1.6	ug/L			08/12/16 04:51	5
cis-1,2-Dichloroethene	**43**		5.0	2.0	ug/L			08/12/16 04:51	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			08/12/16 04:51	5
Cyclohexane	<5.0		5.0	2.4	ug/L			08/12/16 04:51	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			08/12/16 04:51	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			08/12/16 04:51	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
1,2-Dichlorobenzene	**12**		5.0	1.7	ug/L			08/12/16 04:51	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			08/12/16 04:51	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			08/12/16 04:51	5
1,1-Dichloroethane	**19**		5.0	2.1	ug/L			08/12/16 04:51	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			08/12/16 04:51	5
2-Hexanone	<25		25	7.8	ug/L			08/12/16 04:51	5
Isopropylbenzene	**75**		5.0	1.9	ug/L			08/12/16 04:51	5
Methyl acetate	<25		25	10	ug/L			08/12/16 04:51	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			08/12/16 04:51	5
Methylene Chloride	<25		25	8.2	ug/L			08/12/16 04:51	5
Methyl Ethyl Ketone	<25		25	11	ug/L			08/12/16 04:51	5
methyl isobutyl ketone	<25		25	11	ug/L			08/12/16 04:51	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
Styrene	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			08/12/16 04:51	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			08/12/16 04:51	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			08/12/16 04:51	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			08/12/16 04:51	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			08/12/16 04:51	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			08/12/16 04:51	5
Trichloroethene	**3.7**		2.5	0.82	ug/L			08/12/16 04:51	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			08/12/16 04:51	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			08/12/16 04:51	5
Vinyl chloride	**10**		2.5	1.0	ug/L			08/12/16 04:51	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 04:51*	*5*
Dibromofluoromethane	*91*		*70 - 120*		*08/12/16 04:51*	*5*

Client Sample ID: MW-13-GW-08092016

Date Collected: 08/09/16 09:20
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-7

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		71 - 127		08/12/16 04:51	5
Toluene-d8 (Surr)	104		75 - 120		08/12/16 04:51	5

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1200**	D	25	9.2	ug/L			08/12/16 05:18	50
Toluene	**2800**	D	25	7.6	ug/L			08/12/16 05:18	50
Xylenes, Total	**8200**	D	50	11	ug/L			08/12/16 05:18	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		71 - 120		08/12/16 05:18	50
Dibromofluoromethane	90		70 - 120		08/12/16 05:18	50
1,2-Dichloroethane-d4 (Surr)	91		71 - 127		08/12/16 05:18	50
Toluene-d8 (Surr)	103		75 - 120		08/12/16 05:18	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Acenaphthylene	**2.7**	J	3.7	1.0	ug/L		08/16/16 17:36	08/17/16 16:08	5
Acetophenone	<19		19	2.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
Anthracene	<3.7		3.7	1.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[a]pyrene	<0.74		0.74	0.37	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		08/16/16 17:36	08/17/16 16:08	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Bis(2-ethylhexyl) phthalate	<37		37	6.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Bromophenyl phenyl ether	<19		19	2.0	ug/L		08/16/16 17:36	08/17/16 16:08	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		08/16/16 17:36	08/17/16 16:08	5
Carbazole	<19		19	1.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Chloroaniline	<37		37	7.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Chloro-3-methylphenol	<37		37	8.6	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Chloronaphthalene	<7.4		7.4	0.87	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Chlorophenol	<19		19	2.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Chlorophenyl phenyl ether	<19		19	2.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
Chrysene	<1.9		1.9	0.25	ug/L		08/16/16 17:36	08/17/16 16:08	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		08/16/16 17:36	08/17/16 16:08	5
Dibenzofuran	<7.4		7.4	0.98	ug/L		08/16/16 17:36	08/17/16 16:08	5
3,3'-Dichlorobenzidine	<19		19	6.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dichlorophenol	<37		37	9.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Diethyl phthalate	**9.0**		7.4	1.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dimethylphenol	**34**	J	37	6.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Di-n-butyl phthalate	**4.4**	J	19	2.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
4,6-Dinitro-2-methylphenol	<74		74	22	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dinitrophenol	<74		74	32	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4-Dinitrotoluene	<3.7		3.7	0.91	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,6-Dinitrotoluene	<1.9		1.9	0.27	ug/L		08/16/16 17:36	08/17/16 16:08	5

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<37		37	3.9	ug/L		08/16/16 17:36	08/17/16 16:08	5
Fluoranthene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Fluorene	<3.7		3.7	0.91	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachlorobenzene	<1.9		1.9	0.30	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachlorobutadiene	<19		19	1.9	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachlorocyclopentadiene	<74		74	24	ug/L		08/16/16 17:36	08/17/16 16:08	5
Hexachloroethane	<19		19	2.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		08/16/16 17:36	08/17/16 16:08	5
Isophorone	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Methylnaphthalene	**11**		7.4	0.24	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Methylphenol	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
3 & 4 Methylphenol	**54**		7.4	1.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Naphthalene	**170**		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Nitroaniline	<19		19	4.8	ug/L		08/16/16 17:36	08/17/16 16:08	5
3-Nitroaniline	<37		37	6.6	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Nitroaniline	<37		37	6.2	ug/L		08/16/16 17:36	08/17/16 16:08	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
2-Nitrophenol	<37		37	9.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
4-Nitrophenol	<74	* J	74	28	ug/L		08/16/16 17:36	08/17/16 16:08	5
N-Nitrosodi-n-propylamine	<1.9		1.9	0.57	ug/L		08/16/16 17:36	08/17/16 16:08	5
N-Nitrosodiphenylamine	**10**		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:08	5
Pentachlorophenol	<74		74	15	ug/L		08/16/16 17:36	08/17/16 16:08	5
Phenanthrene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:08	5
Phenol	**37**		19	2.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
Pyrene	<3.7		3.7	1.6	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4,5-Trichlorophenol	<37		37	9.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
2,4,6-Trichlorophenol	<19		19	2.7	ug/L		08/16/16 17:36	08/17/16 16:08	5
Benzaldehyde	<150	^ J	150	56	ug/L		08/16/16 17:36	08/17/16 16:08	5
Caprolactam	<37		37	5.5	ug/L		08/16/16 17:36	08/17/16 16:08	5
Atrazine	<19		19	2.3	ug/L		08/16/16 17:36	08/17/16 16:08	5
1,1'-Biphenyl	<19		19	1.3	ug/L		08/16/16 17:36	08/17/16 16:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
2-Fluorophenol (Surr)	*59*		*30 - 110*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
Terphenyl-d14 (Surr)	*106*		*42 - 150*	*08/16/16 17:36*	*08/17/16 16:08*	*5*
2,4,6-Tribromophenol (Surr)	*85*		*30 - 150*	*08/16/16 17:36*	*08/17/16 16:08*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.024	ug/L		08/10/16 09:43	08/19/16 15:49	5
alpha-BHC	<0.18		0.18	0.012	ug/L		08/10/16 09:43	08/19/16 15:49	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		08/10/16 09:43	08/19/16 15:49	5
beta-BHC	<0.18		0.18	0.047	ug/L		08/10/16 09:43	08/19/16 15:49	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		08/10/16 09:43	08/19/16 15:49	5
4,4'-DDE	<0.18		0.18	0.017	ug/L		08/10/16 09:43	08/19/16 15:49	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		08/10/16 09:43	08/19/16 15:49	5

Client Sample ID: MW-13-GW-08092016

Date Collected: 08/09/16 09:20
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-7

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.18		0.18	0.047	ug/L		08/10/16 09:43	08/19/16 15:49	5
Dieldrin	<0.18		0.18	0.059	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endosulfan I	<0.18		0.18	0.019	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endosulfan II	<0.18		0.18	0.013	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endrin	<0.18		0.18	0.065	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		08/10/16 09:43	08/19/16 15:49	5
Endrin ketone	<0.18		0.18	0.078	ug/L		08/10/16 09:43	08/19/16 15:49	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		08/10/16 09:43	08/19/16 15:49	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		08/10/16 09:43	08/19/16 15:49	5
Heptachlor	<0.18		0.18	0.062	ug/L		08/10/16 09:43	08/19/16 15:49	5
Heptachlor epoxide	<0.18		0.18	0.064	ug/L		08/10/16 09:43	08/19/16 15:49	5
Methoxychlor	<0.37		0.37	0.11	ug/L		08/10/16 09:43	08/19/16 15:49	5
Toxaphene	<1.8		1.8	0.92	ug/L		08/10/16 09:43	08/19/16 15:49	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*59*		*30 - 143*	*08/10/16 09:43*	*08/19/16 15:49*	*5*
Tetrachloro-m-xylene	*468*	*X*	*30 - 120*	*08/10/16 09:43*	*08/19/16 15:49*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/10/16 09:43	08/12/16 16:27	1
PCB-1260	<0.37		0.37	0.064	ug/L		08/10/16 09:43	08/12/16 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*89*		*30 - 127*	*08/10/16 09:43*	*08/12/16 16:27*	*1*
DCB Decachlorobiphenyl	*84*		*30 - 150*	*08/10/16 09:43*	*08/12/16 16:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.096**	**J**	0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:40	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:40	1
Arsenic	**0.0068**	**J**	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:40	1
Barium	**0.21**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:40	1
Cadmium	**0.00096**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:40	1
Calcium	**83**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:40	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:40	1
Cobalt	**0.0013**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:40	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:40	1
Iron	**6.1**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:40	1
Lead	**0.0032**	**J**	0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:40	1
Magnesium	**42**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:40	1
Manganese	**0.31**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:40	1
Nickel	**0.0087**	**J**	0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20
Matrix: Water
Date Received: 08/09/16 17:55

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	**58**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:40	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:40	1
Sodium	**200**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:40	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:40	1
Vanadium	**0.0037**	**J**	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:40	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:40	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:32	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:32	1
Arsenic	**0.0095**	**J**	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:32	1
Barium	**0.20**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:32	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:32	1
Calcium	**91**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:32	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:32	1
Cobalt	**0.0016**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:32	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:32	1
Iron	**3.3**	J	0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:32	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:32	1
Magnesium	**39**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:32	1
Manganese	**0.27**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:32	1
Nickel	**0.0098**	**J**	0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:32	1
Potassium	**56**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:32	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:32	1
Sodium	**200**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:32	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:32	1
Vanadium	**0.0040**	**J**	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:32	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:45	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020 ~~**0.00014**~~	~~**J B**~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.61**	**J**	1.0	0.18	mg/L			08/11/16 09:45	1
Sulfate	**86**	~~**B**~~	20	5.9	mg/L			08/18/16 06:41	4
Total Organic Carbon - Duplicates	**54**		4.0	1.1	mg/L			08/16/16 02:51	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**28**		5.0	2.5	mg/L			08/11/16 12:32	1
Ammonia	**56**	~~**B**~~	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:09	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:14	1

Client Sample ID: MW-13-GW-08092016

Lab Sample ID: 500-115474-7

Date Collected: 08/09/16 09:20

Matrix: Water

Date Received: 08/09/16 17:55

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**38**		25	8.7	ug/L			08/12/16 12:25	5
Benzene	**390**		2.5	0.73	ug/L			08/12/16 12:25	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
Bromoform	<5.0		5.0	2.4	ug/L			08/12/16 12:25	5
Bromomethane	<10		10	4.0	ug/L			08/12/16 12:25	5
Carbon disulfide	<10		10	2.2	ug/L			08/12/16 12:25	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
Chlorobenzene	**3.2**	J	5.0	1.9	ug/L			08/12/16 12:25	5
Chloroethane	<5.0		5.0	2.5	ug/L			08/12/16 12:25	5
Chloroform	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
Chloromethane	<5.0		5.0	1.6	ug/L			08/12/16 12:25	5
cis-1,2-Dichloroethene	**34**		5.0	2.0	ug/L			08/12/16 12:25	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			08/12/16 12:25	5
Cyclohexane	<5.0		5.0	2.4	ug/L			08/12/16 12:25	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			08/12/16 12:25	5
1,2-Dibromo-3-Chloropropane	<25	J	25	10	ug/L			08/12/16 12:25	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
1,2-Dichlorobenzene	**13**		5.0	1.7	ug/L			08/12/16 12:25	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			08/12/16 12:25	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			08/12/16 12:25	5
1,1-Dichloroethane	**16**		5.0	2.1	ug/L			08/12/16 12:25	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			08/12/16 12:25	5
2-Hexanone	<25		25	7.8	ug/L			08/12/16 12:25	5
Isopropylbenzene	**100**		5.0	1.9	ug/L			08/12/16 12:25	5
Methyl acetate	<25		25	10	ug/L			08/12/16 12:25	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			08/12/16 12:25	5
Methylene Chloride	<25		25	8.2	ug/L			08/12/16 12:25	5
Methyl Ethyl Ketone	<25		25	11	ug/L			08/12/16 12:25	5
methyl isobutyl ketone	<25		25	11	ug/L			08/12/16 12:25	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
Styrene	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			08/12/16 12:25	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			08/12/16 12:25	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			08/12/16 12:25	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			08/12/16 12:25	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			08/12/16 12:25	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			08/12/16 12:25	5
Trichloroethene	**3.6**		2.5	0.82	ug/L			08/12/16 12:25	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			08/12/16 12:25	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			08/12/16 12:25	5
Vinyl chloride	**11**		2.5	1.0	ug/L			08/12/16 12:25	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*08/12/16 12:25*	*5*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 12:25*	*5*

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		71 - 127		08/12/16 12:25	5
Toluene-d8 (Surr)	104		75 - 120		08/12/16 12:25	5

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1400**	D	25	9.2	ug/L			08/12/16 12:51	50
Toluene	**2700**	D	25	7.6	ug/L			08/12/16 12:51	50
Xylenes, Total	**9800**	D	50	11	ug/L			08/12/16 12:51	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		71 - 120		08/12/16 12:51	50
Dibromofluoromethane	88		70 - 120		08/12/16 12:51	50
1,2-Dichloroethane-d4 (Surr)	92		71 - 127		08/12/16 12:51	50
Toluene-d8 (Surr)	104		75 - 120		08/12/16 12:51	50

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
Acenaphthylene	**2.5**	J	3.7	0.99	ug/L		08/16/16 17:36	08/17/16 16:33	5
Acetophenone	<18		18	2.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
Anthracene	<3.7		3.7	1.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[a]pyrene	<0.74		0.74	0.37	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		08/16/16 17:36	08/17/16 16:33	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.0	ug/L		08/16/16 17:36	08/17/16 16:33	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/16/16 17:36	08/17/16 16:33	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		08/16/16 17:36	08/17/16 16:33	5
Carbazole	<18		18	1.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Chloroaniline	<37		37	7.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Chloro-3-methylphenol	<37		37	8.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Chloronaphthalene	<7.4		7.4	0.87	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Chlorophenol	<18		18	2.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
Chrysene	<1.8		1.8	0.25	ug/L		08/16/16 17:36	08/17/16 16:33	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		08/16/16 17:36	08/17/16 16:33	5
Dibenzofuran	<7.4		7.4	0.97	ug/L		08/16/16 17:36	08/17/16 16:33	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dichlorophenol	<37		37	9.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
Diethyl phthalate	**8.8**		7.4	1.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dimethylphenol	**32**	J	37	6.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Di-n-butyl phthalate	**4.2**	J	18	2.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
4,6-Dinitro-2-methylphenol	<74		74	22	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dinitrophenol	<74		74	32	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4-Dinitrotoluene	<3.7		3.7	0.91	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/16/16 17:36	08/17/16 16:33	5

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<37		37	3.9	ug/L		08/16/16 17:36	08/17/16 16:33	5
Fluoranthene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
Fluorene	<3.7		3.7	0.90	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachlorocyclopentadiene	<74		74	24	ug/L		08/16/16 17:36	08/17/16 16:33	5
Hexachloroethane	<18		18	2.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		08/16/16 17:36	08/17/16 16:33	5
Isophorone	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Methylnaphthalene	**11**		7.4	0.24	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Methylphenol	<7.4		7.4	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
3 & 4 Methylphenol	**54**		7.4	1.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
Naphthalene	**160**		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Nitroaniline	<18		18	4.8	ug/L		08/16/16 17:36	08/17/16 16:33	5
3-Nitroaniline	<37		37	6.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Nitroaniline	<37		37	6.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		08/16/16 17:36	08/17/16 16:33	5
2-Nitrophenol	<37		37	9.2	ug/L		08/16/16 17:36	08/17/16 16:33	5
4-Nitrophenol	<74	* J	74	27	ug/L		08/16/16 17:36	08/17/16 16:33	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.57	ug/L		08/16/16 17:36	08/17/16 16:33	5
N-Nitrosodiphenylamine	<3.7		3.7	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		08/16/16 17:36	08/17/16 16:33	5
Pentachlorophenol	<74		74	15	ug/L		08/16/16 17:36	08/17/16 16:33	5
Phenanthrene	<3.7		3.7	1.1	ug/L		08/16/16 17:36	08/17/16 16:33	5
Phenol	**36**		18	2.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
Pyrene	<3.7		3.7	1.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4,5-Trichlorophenol	<37		37	9.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/16/16 17:36	08/17/16 16:33	5
Benzaldehyde	<150	* J	150	56	ug/L		08/16/16 17:36	08/17/16 16:33	5
Caprolactam	<37		37	5.5	ug/L		08/16/16 17:36	08/17/16 16:33	5
Atrazine	<18		18	2.3	ug/L		08/16/16 17:36	08/17/16 16:33	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/16/16 17:36	08/17/16 16:33	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*58*		*30 - 123*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
Phenol-d5 (Surr)	*48*		*20 - 100*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*08/16/16 17:36*	*08/17/16 16:33*	*5*
2,4,6-Tribromophenol (Surr)	*90*		*30 - 150*	*08/16/16 17:36*	*08/17/16 16:33*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.025	ug/L		08/10/16 09:43	08/19/16 16:08	5
alpha-BHC	<0.18		0.18	0.012	ug/L		08/10/16 09:43	08/19/16 16:08	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		08/10/16 09:43	08/19/16 16:08	5
beta-BHC	<0.18		0.18	0.047	ug/L		08/10/16 09:43	08/19/16 16:08	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		08/10/16 09:43	08/19/16 16:08	5
4,4'-DDE	<0.18		0.18	0.018	ug/L		08/10/16 09:43	08/19/16 16:08	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		08/10/16 09:43	08/19/16 16:08	5

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.18		0.18	0.048	ug/L		08/10/16 09:43	08/19/16 16:08	5
Dieldrin	<0.18		0.18	0.060	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endosulfan I	<0.18		0.18	0.019	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endosulfan II	<0.18		0.18	0.013	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endrin	<0.18		0.18	0.066	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		08/10/16 09:43	08/19/16 16:08	5
Endrin ketone	<0.18		0.18	0.079	ug/L		08/10/16 09:43	08/19/16 16:08	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		08/10/16 09:43	08/19/16 16:08	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		08/10/16 09:43	08/19/16 16:08	5
Heptachlor	<0.18		0.18	0.062	ug/L		08/10/16 09:43	08/19/16 16:08	5
Heptachlor epoxide	<0.18		0.18	0.064	ug/L		08/10/16 09:43	08/19/16 16:08	5
Methoxychlor	<0.37		0.37	0.11	ug/L		08/10/16 09:43	08/19/16 16:08	5
Toxaphene	<1.8		1.8	0.92	ug/L		08/10/16 09:43	08/19/16 16:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*34*		*30 - 143*	*08/10/16 09:43*	*08/19/16 16:08*	*5*
Tetrachloro-m-xylene	*475*	*X*	*30 - 120*	*08/10/16 09:43*	*08/19/16 16:08*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1221	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1232	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1242	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1248	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1254	<0.37		0.37	0.18	ug/L		08/15/16 09:16	08/22/16 13:38	1
PCB-1260	<0.37		0.37	0.065	ug/L		08/15/16 09:16	08/22/16 13:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*62*		*30 - 127*	*08/15/16 09:16*	*08/22/16 13:38*	*1*
DCB Decachlorobiphenyl	*45*		*30 - 150*	*08/15/16 09:16*	*08/22/16 13:38*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.12**	**J**	0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:52	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:52	1
Arsenic	**0.0096**	**J**	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:52	1
Barium	**0.21**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:52	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:52	1
Calcium	**93**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:52	1
Chromium	**0.0039**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:52	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:52	1
Copper	**0.0029**	**J**	0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:52	1
Iron	**5.6**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:52	1
Magnesium	**40**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:52	1
Manganese	**0.29**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:52	1
Nickel	**0.011**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-1(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-8

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	**59**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:52	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:52	1
Sodium	**210**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 21:52	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:52	1
Vanadium	**0.0045**	**J**	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:52	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:52	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:36	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 22:36	1
Arsenic	**0.0062**	**J**	0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:36	1
Barium	**0.22**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:36	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:36	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:36	1
Calcium	**86**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:36	1
Chromium	**0.0037**	**J**	0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:36	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 22:36	1
Copper	<0.010		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:36	1
Iron	**5.9**	J	0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:36	1
Lead	<0.0050		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 22:36	1
Magnesium	**45**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:36	1
Manganese	**0.31**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:36	1
Nickel	**0.0092**	**J**	0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 22:36	1
Potassium	**62**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:36	1
Selenium	<0.010		0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:36	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:36	1
Sodium	**210**		1.0	0.43	mg/L		08/10/16 08:27	08/10/16 22:36	1
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:36	1
Vanadium	**0.0031**	**J**	0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:36	1
Zinc	<0.020		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:51	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020 ~~**0.00012**~~	~~**J B**~~ UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.7**		1.0	0.18	mg/L			08/11/16 09:49	1
Sulfate	**96**	~~**B**~~	20	5.9	mg/L			08/17/16 07:01	4
Total Organic Carbon - Duplicates	**56**		4.0	1.1	mg/L			08/16/16 03:08	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids	**22**		5.0	2.5	mg/L			08/11/16 12:34	1
Ammonia	**66**	~~**B**~~	4.0	0.57	mg/L		08/16/16 21:15	08/18/16 21:12	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			08/10/16 11:15	1

Client Sample ID: DUP-1(08092016)

Lab Sample ID: 500-115474-8

Date Collected: 08/09/16 00:00

Matrix: Water

Date Received: 08/09/16 17:55

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			08/16/16 22:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Lab Sample ID: 500-115474-9

Date Collected: 08/09/16 00:00
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**46**	J	5.0	1.7	ug/L			08/12/16 13:18	1
Benzene	**6.0**		0.50	0.15	ug/L			08/12/16 13:18	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 13:18	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 13:18	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 13:18	1
Carbon disulfide	**0.71**	J	2.0	0.45	ug/L			08/12/16 13:18	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 13:18	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 13:18	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 13:18	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 13:18	1
cis-1,2-Dichloroethene	**4.3**		1.0	0.41	ug/L			08/12/16 13:18	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 13:18	1
Cyclohexane	<1.0		1.0	0.49	ug/L			08/12/16 13:18	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 13:18	1
1,2-Dibromo-3-Chloropropane	<5.0	J	5.0	2.0	ug/L			08/12/16 13:18	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
1,2-Dichlorobenzene	**1.9**		1.0	0.33	ug/L			08/12/16 13:18	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 13:18	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			08/12/16 13:18	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 13:18	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			08/12/16 13:18	1
1,2-Dichloroethane	**1.5**		1.0	0.39	ug/L			08/12/16 13:18	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 13:18	1
Ethylbenzene	**85**		0.50	0.18	ug/L			08/12/16 13:18	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 13:18	1
Isopropylbenzene	**5.0**		1.0	0.39	ug/L			08/12/16 13:18	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 13:18	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			08/12/16 13:18	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 13:18	1
Methyl Ethyl Ketone	**21**		5.0	2.1	ug/L			08/12/16 13:18	1
methyl isobutyl ketone	**27**		5.0	2.2	ug/L			08/12/16 13:18	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 13:18	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 13:18	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 13:18	1
Toluene	**160**		0.50	0.15	ug/L			08/12/16 13:18	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 13:18	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 13:18	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 13:18	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 13:18	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 13:18	1
Trichloroethene	<0.50		0.50	0.16	ug/L			08/12/16 13:18	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 13:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 13:18	1
Vinyl chloride	**3.3**		0.50	0.20	ug/L			08/12/16 13:18	1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*71 - 120*		*08/12/16 13:18*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*08/12/16 13:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 13:18*	*1*
Toluene-d8 (Surr)	*105*		*75 - 120*		*08/12/16 13:18*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**310**	D	10	2.2	ug/L			08/12/16 13:45	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*		*08/12/16 13:45*	*10*
Dibromofluoromethane	*90*		*70 - 120*		*08/12/16 13:45*	*10*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 13:45*	*10*
Toluene-d8 (Surr)	*103*		*75 - 120*		*08/12/16 13:45*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Acenaphthylene	<3.6		3.6	0.97	ug/L		08/10/16 16:28	08/15/16 17:31	5
Acetophenone	<18	J	18	2.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Anthracene	<3.6		3.6	1.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[a]pyrene	<0.73	* J	0.73	0.36	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[b]fluoranthene	<0.73	* J	0.73	0.29	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[g,h,i]perylene	<3.6	* J	3.6	1.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzo[k]fluoranthene	<0.73	* J	0.73	0.23	ug/L		08/10/16 16:28	08/15/16 17:31	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		08/10/16 16:28	08/15/16 17:31	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Bis(2-ethylhexyl) phthalate	**66**		36	6.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:31	5
Butyl benzyl phthalate	<7.3		7.3	1.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
Carbazole	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Chloroaniline	<36	J	36	7.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Chlorophenol	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
Chrysene	<1.8		1.8	0.25	ug/L		08/10/16 16:28	08/15/16 17:31	5
Dibenz(a,h)anthracene	<1.1	* J	1.1	0.18	ug/L		08/10/16 16:28	08/15/16 17:31	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		08/10/16 16:28	08/15/16 17:31	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		08/10/16 16:28	08/15/16 17:31	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dimethylphenol	<36		36	6.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
4,6-Dinitro-2-methylphenol	<73		73	21	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dinitrophenol	<73		73	31	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/10/16 16:28	08/15/16 17:31	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		08/10/16 16:28	08/15/16 17:31	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
Fluorene	<3.6		3.6	0.89	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachlorocyclopentadiene	<73	J	73	23	ug/L		08/10/16 16:28	08/15/16 17:31	5
Hexachloroethane	<18		18	2.2	ug/L		08/10/16 16:28	08/15/16 17:31	5
Indeno[1,2,3-cd]pyrene	<0.73	* J	0.73	0.27	ug/L		08/10/16 16:28	08/15/16 17:31	5
Isophorone	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Methylnaphthalene	**2.8**	**J**	7.3	0.24	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Methylphenol	**17**		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
3 & 4 Methylphenol	**120**		7.3	1.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
Naphthalene	**18**		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Nitroaniline	<18		18	4.7	ug/L		08/10/16 16:28	08/15/16 17:31	5
3-Nitroaniline	<36		36	6.5	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Nitroaniline	<36	J	36	6.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
2-Nitrophenol	<36		36	9.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
4-Nitrophenol	<73		73	27	ug/L		08/10/16 16:28	08/15/16 17:31	5
N-Nitrosodi-n-propylamine	<1.8	J	1.8	0.56	ug/L		08/10/16 16:28	08/15/16 17:31	5
N-Nitrosodiphenylamine	**1.9**	**J**	3.6	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Pentachlorophenol	<73	J	73	14	ug/L		08/10/16 16:28	08/15/16 17:31	5
Phenanthrene	<3.6		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 17:31	5
Phenol	**47**		18	2.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Pyrene	<3.6		3.6	1.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/10/16 16:28	08/15/16 17:31	5
Benzaldehyde	<150	^ J	150	55	ug/L		08/10/16 16:28	08/15/16 17:31	5
Caprolactam	<36		36	5.4	ug/L		08/10/16 16:28	08/15/16 17:31	5
Atrazine	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 17:31	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 17:31	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*30 - 123*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
2-Fluorophenol (Surr)	*67*		*30 - 110*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
Nitrobenzene-d5 (Surr)	*72*		*33 - 139*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
Phenol-d5 (Surr)	*62*		*20 - 100*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
Terphenyl-d14 (Surr)	*151*	*X*	*42 - 150*	*08/10/16 16:28*	*08/15/16 17:31*	*5*
2,4,6-Tribromophenol (Surr)	*76*		*30 - 150*	*08/10/16 16:28*	*08/15/16 17:31*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 19:50	5
Acenaphthylene	<3.6		3.6	0.97	ug/L		08/10/16 16:28	08/15/16 19:50	5
Acetophenone	<18		18	2.4	ug/L		08/10/16 16:28	08/15/16 19:50	5
Anthracene	<3.6		3.6	1.2	ug/L		08/10/16 16:28	08/15/16 19:50	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		08/10/16 16:28	08/15/16 19:50	5
Benzo[a]pyrene	<0.73	*	0.73	0.36	ug/L		08/10/16 16:28	08/15/16 19:50	5
Benzo[b]fluoranthene	<0.73	*	0.73	0.29	ug/L		08/10/16 16:28	08/15/16 19:50	5
Benzo[g,h,i]perylene	<3.6	*	3.6	1.4	ug/L		08/10/16 16:28	08/15/16 19:50	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	<0.73	*	0.73	0.23	ug/L		08/10/16 16:28	08/15/16 19:50	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		08/10/16 16:28	08/15/16 19:50	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 19:50	5
Bis(2-ethylhexyl) phthalate	**74**		36	6.2	ug/L		08/10/16 16:28	08/15/16 19:50	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 19:50	5
Butyl benzyl phthalate	<7.3		7.3	1.7	ug/L		08/10/16 16:28	08/15/16 19:50	5
Carbazole	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 19:50	5
4-Chloroaniline	<36		36	7.3	ug/L		08/10/16 16:28	08/15/16 19:50	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		08/10/16 16:28	08/15/16 19:50	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		08/10/16 16:28	08/15/16 19:50	5
2-Chlorophenol	<18		18	2.0	ug/L		08/10/16 16:28	08/15/16 19:50	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 19:50	5
Chrysene	<1.8		1.8	0.25	ug/L		08/10/16 16:28	08/15/16 19:50	5
Dibenz(a,h)anthracene	<1.1	*	1.1	0.18	ug/L		08/10/16 16:28	08/15/16 19:50	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		08/10/16 16:28	08/15/16 19:50	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		08/10/16 16:28	08/15/16 19:50	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,4-Dimethylphenol	<36		36	6.6	ug/L		08/10/16 16:28	08/15/16 19:50	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 19:50	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		08/10/16 16:28	08/15/16 19:50	5
4,6-Dinitro-2-methylphenol	<73		73	21	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,4-Dinitrophenol	<73		73	31	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,6-Dinitrotoluene	<1.8		1.8	0.27	ug/L		08/10/16 16:28	08/15/16 19:50	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		08/10/16 16:28	08/15/16 19:50	5
Fluoranthene	<3.6		3.6	1.7	ug/L		08/10/16 16:28	08/15/16 19:50	5
Fluorene	<3.6		3.6	0.89	ug/L		08/10/16 16:28	08/15/16 19:50	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		08/10/16 16:28	08/15/16 19:50	5
Hexachlorobutadiene	<18		18	1.9	ug/L		08/10/16 16:28	08/15/16 19:50	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		08/10/16 16:28	08/15/16 19:50	5
Hexachloroethane	<18		18	2.2	ug/L		08/10/16 16:28	08/15/16 19:50	5
Indeno[1,2,3-cd]pyrene	<0.73	*	0.73	0.27	ug/L		08/10/16 16:28	08/15/16 19:50	5
Isophorone	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 19:50	5
2-Methylnaphthalene	**2.5**	**J**	7.3	0.24	ug/L		08/10/16 16:28	08/15/16 19:50	5
2-Methylphenol	**16**		7.3	1.1	ug/L		08/10/16 16:28	08/15/16 19:50	5
3 & 4 Methylphenol	**120**		7.3	1.6	ug/L		08/10/16 16:28	08/15/16 19:50	5
Naphthalene	**17**		3.6	1.1	ug/L		08/10/16 16:28	08/15/16 19:50	5
2-Nitroaniline	<18		18	4.7	ug/L		08/10/16 16:28	08/15/16 19:50	5
3-Nitroaniline	<36		36	6.5	ug/L		08/10/16 16:28	08/15/16 19:50	5
4-Nitroaniline	<36		36	6.1	ug/L		08/10/16 16:28	08/15/16 19:50	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		08/10/16 16:28	08/15/16 19:50	5
2-Nitrophenol	<36		36	9.1	ug/L		08/10/16 16:28	08/15/16 19:50	5
4-Nitrophenol	<73		73	27	ug/L		08/10/16 16:28	08/15/16 19:50	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		08/10/16 16:28	08/15/16 19:50	5
N-Nitrosodiphenylamine	<3.6		3.6	1.3	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		08/10/16 16:28	08/15/16 19:50	5
Pentachlorophenol	<73		73	14	ug/L		08/10/16 16:28	08/15/16 19:50	5
Phenanthrene	**1.1**	**J**	3.6	1.1	ug/L		08/10/16 16:28	08/15/16 19:50	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RA (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**46**		18	2.4	ug/L		08/10/16 16:28	08/15/16 19:50	5
Pyrene	<3.6		3.6	1.6	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		08/10/16 16:28	08/15/16 19:50	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		08/10/16 16:28	08/15/16 19:50	5
Benzaldehyde	<150	^	150	55	ug/L		08/10/16 16:28	08/15/16 19:50	5
Caprolactam	<36		36	5.4	ug/L		08/10/16 16:28	08/15/16 19:50	5
Atrazine	<18		18	2.3	ug/L		08/10/16 16:28	08/15/16 19:50	5
1,1'-Biphenyl	<18		18	1.3	ug/L		08/10/16 16:28	08/15/16 19:50	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*30 - 123*	*08/10/16 16:28*	*08/15/16 19:50*	*5*
2-Fluorophenol (Surr)	*67*		*30 - 110*	*08/10/16 16:28*	*08/15/16 19:50*	*5*
Nitrobenzene-d5 (Surr)	*64*		*33 - 139*	*08/10/16 16:28*	*08/15/16 19:50*	*5*
Phenol-d5 (Surr)	*60*		*20 - 100*	*08/10/16 16:28*	*08/15/16 19:50*	*5*
Terphenyl-d14 (Surr)	*168*	*X*	*42 - 150*	*08/10/16 16:28*	*08/15/16 19:50*	*5*
2,4,6-Tribromophenol (Surr)	*81*		*30 - 150*	*08/10/16 16:28*	*08/15/16 19:50*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.19		0.19	0.025	ug/L		08/10/16 09:43	08/19/16 16:27	5
alpha-BHC	<0.19		0.19	0.012	ug/L		08/10/16 09:43	08/19/16 16:27	5
alpha-Chlordane	<0.19		0.19	0.021	ug/L		08/10/16 09:43	08/19/16 16:27	5
beta-BHC	<0.19		0.19	0.048	ug/L		08/10/16 09:43	08/19/16 16:27	5
4,4'-DDD	<0.19		0.19	0.063	ug/L		08/10/16 09:43	08/19/16 16:27	5
4,4'-DDE	<0.19		0.19	0.018	ug/L		08/10/16 09:43	08/19/16 16:27	5
4,4'-DDT	<0.19		0.19	0.015	ug/L		08/10/16 09:43	08/19/16 16:27	5
delta-BHC	<0.19		0.19	0.049	ug/L		08/10/16 09:43	08/19/16 16:27	5
Dieldrin	<0.19		0.19	0.061	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endosulfan I	<0.19		0.19	0.019	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endosulfan II	<0.19		0.19	0.013	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endosulfan sulfate	<0.19		0.19	0.055	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endrin	<0.19		0.19	0.067	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endrin aldehyde	<0.19		0.19	0.039	ug/L		08/10/16 09:43	08/19/16 16:27	5
Endrin ketone	<0.19		0.19	0.080	ug/L		08/10/16 09:43	08/19/16 16:27	5
gamma-BHC (Lindane)	<0.19		0.19	0.026	ug/L		08/10/16 09:43	08/19/16 16:27	5
gamma-Chlordane	<0.19		0.19	0.034	ug/L		08/10/16 09:43	08/19/16 16:27	5
Heptachlor	<0.19		0.19	0.064	ug/L		08/10/16 09:43	08/19/16 16:27	5
Heptachlor epoxide	<0.19		0.19	0.065	ug/L		08/10/16 09:43	08/19/16 16:27	5
Methoxychlor	<0.38		0.38	0.11	ug/L		08/10/16 09:43	08/19/16 16:27	5
Toxaphene	<1.9		1.9	0.94	ug/L		08/10/16 09:43	08/19/16 16:27	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*2*	*X*	*30 - 143*	*08/10/16 09:43*	*08/19/16 16:27*	*5*
Tetrachloro-m-xylene	*90*		*30 - 120*	*08/10/16 09:43*	*08/19/16 16:27*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.063	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1016	<0.38		0.38	0.063	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1221	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1232	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1232	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1242	**3.4**		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
~~**PCB-1242**~~	~~**3.9**~~		~~0.38~~	~~0.19~~	~~ug/L~~		08/10/16 09:43	08/23/16 08:48	1
PCB-1248	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1248	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1254	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1254	<0.38		0.38	0.19	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1260	<0.38		0.38	0.066	ug/L		08/10/16 09:43	08/23/16 08:48	1
PCB-1260	<0.38		0.38	0.066	ug/L		08/10/16 09:43	08/23/16 08:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*39*		*30 - 127*	*08/10/16 09:43*	*08/23/16 08:48*	*1*
Tetrachloro-m-xylene	*47*		*30 - 127*	*08/10/16 09:43*	*08/23/16 08:48*	*1*
DCB Decachlorobiphenyl	*17*	*X*	*30 - 150*	*08/10/16 09:43*	*08/23/16 08:48*	*1*
DCB Decachlorobiphenyl	*19*	*X*	*30 - 150*	*08/10/16 09:43*	*08/23/16 08:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.38**		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 21:57	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/10/16 21:57	1
Arsenic	**0.028**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:57	1
Barium	**0.35**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 21:57	1
Cadmium	**0.0019**	**J**	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 21:57	1
Calcium	**35**		0.20	0.059	mg/L		08/10/16 08:27	08/10/16 21:57	1
Chromium	**0.10**		0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 21:57	1
Cobalt	**0.031**		0.0050	0.00096	mg/L		08/10/16 08:27	08/10/16 21:57	1
Copper	**0.012**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 21:57	1
Iron	**1.4**		0.20	0.10	mg/L		08/10/16 08:27	08/10/16 21:57	1
Lead	**0.10**		0.0050	0.0025	mg/L		08/10/16 08:27	08/10/16 21:57	1
Magnesium	**29**		0.10	0.041	mg/L		08/10/16 08:27	08/10/16 21:57	1
Manganese	**0.012**		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:57	1
Nickel	**0.12**		0.010	0.0037	mg/L		08/10/16 08:27	08/10/16 21:57	1
Potassium	**530**		0.50	0.16	mg/L		08/10/16 08:27	08/10/16 21:57	1
Selenium	**0.0053**	**J**	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 21:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 21:57	1
Sodium	**2700**		5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:10	5
Thallium	<0.010		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 21:57	1
Vanadium	**0.064**		0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 21:57	1
Zinc	**0.14**		0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 21:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.21**		0.20	0.062	mg/L		08/10/16 08:27	08/10/16 22:49	1
Antimony	<0.020		0.020	0.0064	mg/L		08/10/16 08:27	08/11/16 14:10	1
Arsenic	**0.025**		0.010	0.0034	mg/L		08/10/16 08:27	08/11/16 14:10	1
Barium	**0.30**		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		08/10/16 08:27	08/10/16 22:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: DUP-2(08092016)

Date Collected: 08/09/16 00:00
Date Received: 08/09/16 17:55

Lab Sample ID: 500-115474-9

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte		Result	Qualifier		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0020	~~0.0014~~	~~J ^~~	UB	0.0020	0.00094	mg/L		08/10/16 08:27	08/10/16 22:49	1
Calcium		30			0.20	0.059	mg/L		08/10/16 08:27	08/10/16 22:49	1
Chromium		0.089			0.010	0.0024	mg/L		08/10/16 08:27	08/10/16 22:49	1
Cobalt		0.026			0.0050	0.00096	mg/L		08/10/16 08:27	08/11/16 14:10	1
Copper		0.0060	J		0.010	0.0022	mg/L		08/10/16 08:27	08/10/16 22:49	1
Iron		1.0			0.20	0.10	mg/L		08/10/16 08:27	08/10/16 22:49	1
Lead		0.044	~~^~~	J	0.0050	0.0025	mg/L		08/10/16 08:27	08/13/16 00:00	1
Magnesium		26			0.10	0.041	mg/L		08/10/16 08:27	08/10/16 22:49	1
Manganese		0.0077	J		0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:49	1
Nickel		0.097			0.010	0.0037	mg/L		08/10/16 08:27	08/11/16 14:10	1
Potassium		470			0.50	0.16	mg/L		08/10/16 08:27	08/10/16 22:49	1
Selenium	0.0020	~~0.0057~~	~~J ^~~	UB	0.010	0.0051	mg/L		08/10/16 08:27	08/10/16 22:49	1
Silver		<0.0050			0.0050	0.0013	mg/L		08/10/16 08:27	08/10/16 22:49	1
Sodium		2400			5.0	2.2	mg/L		08/10/16 08:27	08/11/16 16:26	5
Thallium		<0.010			0.010	0.0034	mg/L		08/10/16 08:27	08/10/16 22:49	1
Vanadium		0.053			0.0050	0.0019	mg/L		08/10/16 08:27	08/10/16 22:49	1
Zinc		0.061			0.020	0.0090	mg/L		08/10/16 08:27	08/10/16 22:49	1

Method: 7470A - Mercury (CVAA)

Analyte		Result	Qualifier		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	~~0.00018~~	~~J B~~	UB	0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:54	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		08/10/16 11:00	08/11/16 14:55	1

General Chemistry

Analyte		Result	Qualifier		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide		6.5			1.0	0.18	mg/L			08/11/16 09:53	1
Sulfate	20	~~12~~	~~J B~~	UB	20	5.9	mg/L			08/17/16 07:00	4
Total Organic Carbon - Duplicates		370			20	5.3	mg/L			08/16/16 03:24	20
Nitrogen, Nitrate		0.038	J		0.10	0.035	mg/L			08/19/16 14:22	1
Total Suspended Solids		4.5	J		5.0	2.5	mg/L			08/11/16 12:36	1
Ammonia		490	~~B~~		40	5.7	mg/L		08/16/16 21:15	08/18/16 22:39	50
Nitrogen, Nitrite		<0.040			0.040	0.018	mg/L			08/10/16 11:15	2
Nitrogen, Nitrate Nitrite		0.038	J		0.10	0.035	mg/L			08/16/16 23:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-115474-1

Client Sample ID: Composite Drum Sample

Lab Sample ID: 500-115474-10

Date Collected: 08/09/16 16:00
Matrix: Water
Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			08/12/16 14:12	1
Chloromethane	<1.0		1.0	0.32	ug/L			08/12/16 14:12	1
Vinyl chloride	**1.4**		0.50	0.20	ug/L			08/12/16 14:12	1
Bromomethane	<2.0		2.0	0.80	ug/L			08/12/16 14:12	1
Chloroethane	<1.0		1.0	0.51	ug/L			08/12/16 14:12	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			08/12/16 14:12	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			08/12/16 14:12	1
Acetone	**44**		5.0	1.7	ug/L			08/12/16 14:12	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			08/12/16 14:12	1
Methyl acetate	<5.0		5.0	2.0	ug/L			08/12/16 14:12	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			08/12/16 14:12	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			08/12/16 14:12	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
1,1-Dichloroethane	**2.6**		1.0	0.41	ug/L			08/12/16 14:12	1
cis-1,2-Dichloroethene	**5.4**		1.0	0.41	ug/L			08/12/16 14:12	1
Methyl Ethyl Ketone	**17**		5.0	2.1	ug/L			08/12/16 14:12	1
Chloroform	<1.0		1.0	0.37	ug/L			08/12/16 14:12	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			08/12/16 14:12	1
Cyclohexane	**3.3**		1.0	0.49	ug/L			08/12/16 14:12	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			08/12/16 14:12	1
Benzene	**55**		0.50	0.15	ug/L			08/12/16 14:12	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
Trichloroethene	**0.42**	**J**	0.50	0.16	ug/L			08/12/16 14:12	1
Methylcyclohexane	**3.0**		1.0	0.32	ug/L			08/12/16 14:12	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			08/12/16 14:12	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			08/12/16 14:12	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			08/12/16 14:12	1
methyl isobutyl ketone	**16**		5.0	2.2	ug/L			08/12/16 14:12	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			08/12/16 14:12	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			08/12/16 14:12	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			08/12/16 14:12	1
2-Hexanone	<5.0		5.0	1.6	ug/L			08/12/16 14:12	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			08/12/16 14:12	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
Chlorobenzene	**3.6**		1.0	0.39	ug/L			08/12/16 14:12	1
Ethylbenzene	**110**		0.50	0.18	ug/L			08/12/16 14:12	1
Styrene	<1.0		1.0	0.39	ug/L			08/12/16 14:12	1
Bromoform	<1.0		1.0	0.48	ug/L			08/12/16 14:12	1
Isopropylbenzene	**7.4**		1.0	0.39	ug/L			08/12/16 14:12	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			08/12/16 14:12	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			08/12/16 14:12	1
1,4-Dichlorobenzene	**0.73**	**J**	1.0	0.36	ug/L			08/12/16 14:12	1
1,2-Dichlorobenzene	**1.5**		1.0	0.33	ug/L			08/12/16 14:12	1
1,2-Dibromo-3-Chloropropane	<5.0	J	5.0	2.0	ug/L			08/12/16 14:12	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			08/12/16 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*		*08/12/16 14:12*	*1*

Client Sample ID: Composite Drum Sample

Lab Sample ID: 500-115474-10

Date Collected: 08/09/16 16:00

Matrix: Water

Date Received: 08/09/16 17:55

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*75 - 120*		*08/12/16 14:12*	*1*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*08/12/16 14:12*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*08/12/16 14:12*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**270**	D	5.0	1.5	ug/L			08/12/16 14:38	10
Xylenes, Total	**560**	D	10	2.2	ug/L			08/12/16 14:38	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*08/12/16 14:38*	*10*
Toluene-d8 (Surr)	*105*		*75 - 120*		*08/12/16 14:38*	*10*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*08/12/16 14:38*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*08/12/16 14:38*	*10*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	**>176**	J	40.0	40.0	Degrees F			08/19/16 12:39	1
pH	**8.0**	HF	0.2	0.2	SU			08/11/16 16:27	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19879

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

08/25/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76652.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115474-1
Address: 220 William Pitt Way, ,	Due Date Requested: 8/19/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - ~~Methane,~~ Carbon Dioxide, ~~Oxygen and Nitrogen~~)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-06-GW-08092016 (500-115474-1)	8/9/16	09:30 Central		Water			X	1	
MW-07-GW-08092016 (500-115474-2)	8/9/16	11:45 Central		Water			X	1	
MW-08-GW-08092016 (500-115474-3)	8/9/16	13:45 Central		Water			X	1	
MW-09-GW-08092016 (500-115474-4)	8/9/16	15:30 Central		Water			X	1	
MW-10-GW-08092016 (500-115474-5)	8/9/16	14:10 Central		Water			X	1	
MW-11-GW-08092016 (500-115474-6)	8/9/16	12:10 Central		Water			X	1	
MW-13-GW-08092016 (500-115474-7)	8/9/16	09:20 Central		Water			X	1	
DUP-1(08092016) (500-115474-8)	8/9/16	Central		Water			X	1	
DUP-2(08092016) (500-115474-9)	8/9/16	Central		Water			X	1	

Possible Hazard Identification
Unconfirmed 0.5°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 08/10/16 1600	Company: TA	Received by:	Date/Time: 8.11.16 1100	Company: PAES
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

19879

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

08/25/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-76650.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-115474-1
Address: 220 William Pitt Way, ,	Due Date Requested: 8/19/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, ~~Carbon Dioxide~~, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-06-GW-08092016 (500-115474-1)	8/9/16	09:30 Central		Water			X	2	
MW-07-GW-08092016 (500-115474-2)	8/9/16	11:45 Central		Water			X	2	
MW-08-GW-08092016 (500-115474-3)	8/9/16	13:45 Central		Water			X	2	
MW-09-GW-08092016 (500-115474-4)	8/9/16	15:30 Central		Water			X	2	
MW-10-GW-08092016 (500-115474-5)	8/9/16	14:10 Central		Water			X	2	
MW-11-GW-08092016 (500-115474-6)	8/9/16	12:10 Central		Water			X	2	
MW-13-GW-08092016 (500-115474-7)	8/9/16	09:20 Central		Water			X	2	
DUP-1(08092016) (500-115474-8)	8/9/16	Central		Water			X	2	
DUP-2(08092016) (500-115474-9)	8/9/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed 0.5°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 08/10/16 1100	Company TA	Received by:	Date/Time: 8.11.16 11 00	Company PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 19879 500-115474-1

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
d	The analyte concentration was determined from a dilution.

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790001** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-06-GW-08092016** Date Collected: 8/9/2016 09:30

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**19000**	ug/l	J	0.50	0.027	1	8/17/2016 06:37	TD	n
Carbon Dioxide	**24**	mg/l	J	5.0	0.24	1	8/17/2016 11:08	TD	n
Oxygen	**0.92**	mg/l	J	0.50	0.13	1	8/17/2016 06:37	TD	n
Nitrogen	**7.3**	mg/l	J	2.0	0.24	1	8/17/2016 06:37	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790002** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-07-GW-08092016** Date Collected: 8/9/2016 11:45

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**20000**	ug/l	J	0.50	0.027	1	8/17/2016 06:52	TD	n
Carbon Dioxide	**47**	mg/l	J	20	0.96	4	8/17/2016 11:35	TD	d,n
Oxygen	**0.65**	mg/l	J	0.50	0.13	1	8/17/2016 06:52	TD	n
Nitrogen	**4.6**	mg/l	J	2.0	0.24	1	8/17/2016 06:52	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790003** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-08-GW-08092016** Date Collected: 8/9/2016 13:45

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**17000**	ug/l	J	0.50	0.027	1	8/17/2016 07:05	TD	n
Carbon Dioxide	**150**	mg/l	J	5.0	0.24	1	8/17/2016 11:22	TD	n
Oxygen	**1.5**	mg/l	J	0.50	0.13	1	8/17/2016 07:05	TD	n
Nitrogen	**4.8**	mg/l	J	2.0	0.24	1	8/17/2016 07:05	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790004**
Sample ID: **MW-09-GW-08092016**

Date Received: 8/11/2016 11:00 Matrix: Water
Date Collected: 8/9/2016 15:30

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**20000**	ug/l	J	0.50	0.027	1	8/17/2016 07:21	TD	n
Carbon Dioxide	**340**	mg/l	J	5.0	0.24	1	8/17/2016 11:50	TD	n
Oxygen	**1.2**	mg/l	J	0.50	0.13	1	8/17/2016 07:21	TD	n
Nitrogen	**3.8**	mg/l	J	2.0	0.24	1	8/17/2016 07:21	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790005** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-10-GW-08092016** Date Collected: 8/9/2016 14:10

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**6000**	ug/l	J	0.50	0.027	1	8/17/2016 07:35	TD	n
Carbon Dioxide	**78**	mg/l	J	5.0	0.24	1	8/17/2016 12:06	TD	n
Oxygen	**2.1**	mg/l	J	0.50	0.13	1	8/17/2016 07:35	TD	n
Nitrogen	**16**	mg/l	J	2.0	0.24	1	8/17/2016 07:35	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790006**
Sample ID: **MW-11-GW-08092016**

Date Received: 8/11/2016 11:00 Matrix: Water
Date Collected: 8/9/2016 12:10

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**22000**	ug/l	J	0.50	0.027	1	8/17/2016 07:48	TD	n
Carbon Dioxide	**160**	mg/l	J	5.0	0.24	1	8/17/2016 12:18	TD	n
Oxygen	**1.4**	mg/l	J	0.50	0.13	1	8/17/2016 07:48	TD	n
Nitrogen	**5.9**	mg/l	J	2.0	0.24	1	8/17/2016 07:48	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790007** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **MW-13-GW-08092016** Date Collected: 8/9/2016 09:20

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**21000**	ug/l	J	0.50	0.027	1	8/17/2016 08:07	TD	n
Carbon Dioxide	**32**	mg/l	J	5.0	0.24	1	8/17/2016 12:36	TD	n
Oxygen	**1.6**	mg/l	J	0.50	0.13	1	8/17/2016 08:07	TD	n
Nitrogen	**6.7**	mg/l	J	2.0	0.24	1	8/17/2016 08:07	TD	n

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ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790008** Date Received: 8/11/2016 11:00 Matrix: Water

Sample ID: **DUP-1(8092016)** Date Collected: 8/9/2016 00:00

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**22000**	ug/l	J	0.50	0.027	1	8/17/2016 08:20	TD	n
Carbon Dioxide	**40**	mg/l	J	5.0	0.24	1	8/17/2016 12:50	TD	n
Oxygen	**0.96**	mg/l	J	0.50	0.13	1	8/17/2016 08:20	TD	n
Nitrogen	**3.1**	mg/l	J	2.0	0.24	1	8/17/2016 08:20	TD	n

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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 19879 500-115474-1

Lab ID: **198790009**
Sample ID: **DUP-2(8092016)**

Date Received: 8/11/2016 11:00 Matrix: Water
Date Collected: 8/9/2016 00:00

Parameters	Results	Units		PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Methane	**19000**	ug/l	J	0.50	0.027	1	8/17/2016 08:34	TD	n
Carbon Dioxide	**24**	mg/l	J	5.0	0.24	1	8/17/2016 13:04	TD	n
Oxygen	**0.73**	mg/l	J	0.50	0.13	1	8/17/2016 08:34	TD	n
Nitrogen	**5.1**	mg/l	J	2.0	0.24	1	8/17/2016 08:34	TD	n

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118024-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/17/2016 1:57:03 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-118024-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118024-1

Comments
No additional comments.

Receipt
The samples were received on 10/3/2016 4:38 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4º C.

GC/MS VOA
Method(s) 8260B: One surrogate recovery for the following sample was outside control limits: MW-01-GW-10032016 (500-118024-1). Evidence of matrix interference is present (pH=11). The sample was re-analyzed at a dilution for target compounds. The diluted analysis had all surrogates within limits.

Method(s) 8260B: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-01-GW-10032016 (500-118024-1). The sample was analyzed within 7 days per EPA recommendation therefore no further corrective action was needed.

Method(s) 8260B: The initial calibration verification (ICV) result for Dichlorodifluoromethane was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: ICV 500-354143/13 was outside method criteria for Benzaldehyde (35.8%D, low). ICV 500-354787/13 was outside method criteria for Benzaldehyde (35.2%D, low). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.(ICV 500-354143/13)

Method(s) 8270D: CCVIS 500-354791/2 was outside the method criteria for Benzaldehyde (43.8%D, low); 4-Chloroaniline (36.4%D, high) and 4-Nitroaniline (21.4%D, low). CCVIS 500-355873/2 was outside the method criteria for Benzaldehyde (44.0%D, low); Nitrobenzene (20.2%D, high); Caprolactam (72.5%D, high); Hexachlorocyclopentadiene (35.7%D, low); 4-Nitroaniline (48.4%D, high) and Carbazole (25.5%D, high). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.(CCVIS 500-354791/2) and (CCVIS 500-355873/2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method(s) 6010C: The CRI was outside of the control limits for Copper.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016 — Lab Sample ID: 500-118024-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	110		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	36		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	5.3		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.5		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.6		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.8		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	24		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	11		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.4		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	110		5.0	2.1	ug/L	1		8260B	Total/NA
Toluene	13		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.33	J	0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	27		1.0	0.22	ug/L	1		8260B	Total/NA
methyl isobutyl ketone - DL	230		50	22	ug/L	10		8260B	Total/NA
Acenaphthene	6.9		0.75	0.23	ug/L	1		8270D	Total/NA
Acetophenone	2.2	J	3.8	0.50	ug/L	1		8270D	Total/NA
Carbazole	6.7		3.8	0.27	ug/L	1		8270D	Total/NA
4-Chloroaniline	13		7.5	1.5	ug/L	1		8270D	Total/NA
Dibenzofuran	0.91	J	1.5	0.20	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	5.9	J	7.5	1.4	ug/L	1		8270D	Total/NA
Fluorene	1.7		0.75	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	5.0		1.5	0.049	ug/L	1		8270D	Total/NA
2-Methylphenol	2.3		1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	10		1.5	0.34	ug/L	1		8270D	Total/NA
Phenanthrene	0.88		0.75	0.23	ug/L	1		8270D	Total/NA
Naphthalene - DL	230		7.5	2.3	ug/L	10		8270D	Total/NA
Phenol - DL	160		38	5.1	ug/L	10		8270D	Total/NA
Aluminum	0.42		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.82		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	730		1.0	0.30	mg/L	5		6010C	Total/NA
Iron	0.12	J	0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	0.25		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.0045	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.023		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	52		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	200		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.015	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.40		0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.0079	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.0045	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.81		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	790		1.0	0.30	mg/L	5		6010C	Dissolved
Magnesium	0.051	J	0.10	0.041	mg/L	1		6010C	Dissolved
Nickel	0.021		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	50		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.012	J	0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfide	3.6		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	44	B	10	2.9	mg/L	2		9038	Total/NA
Total Organic Carbon - Duplicates	49	B	4.0	1.1	mg/L	4		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016 (Continued) — Lab Sample ID: 500-118024-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	10		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	59	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-02-GW-10032016 — Lab Sample ID: 500-118024-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.0		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	15		0.50	0.15	ug/L	1		8260B	Total/NA
Chloroethane	5.0		1.0	0.51	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	5.6		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	3.9		1.0	0.40	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	9.2		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	1.7		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.2		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	1.4		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	4.4		1.0	0.22	ug/L	1		8260B	Total/NA
Chlorobenzene - DL	560		10	3.9	ug/L	10		8260B	Total/NA
Acenaphthene	0.98		0.72	0.22	ug/L	1		8270D	Total/NA
Bis(2-chloroethyl)ether	1.2	J	1.4	0.21	ug/L	1		8270D	Total/NA
Carbazole	0.29	J	3.6	0.26	ug/L	1		8270D	Total/NA
2-Chloronaphthalene	0.55	J	1.4	0.17	ug/L	1		8270D	Total/NA
2-Chlorophenol	2.7	J	3.6	0.40	ug/L	1		8270D	Total/NA
Dibenzofuran	0.29	J	1.4	0.19	ug/L	1		8270D	Total/NA
Diethyl phthalate	0.43	J	1.4	0.26	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	0.79	J	3.6	0.53	ug/L	1		8270D	Total/NA
Fluorene	0.53	J	0.72	0.18	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	2.7		1.4	0.32	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	6.3		0.72	0.27	ug/L	1		8270D	Total/NA
Phenanthrene	0.26	J	0.72	0.22	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	0.53	J	3.6	0.26	ug/L	1		8270D	Total/NA
2-Methylnaphthalene - DL	120		7.2	0.24	ug/L	5		8270D	Total/NA
Naphthalene - DL	92		3.6	1.1	ug/L	5		8270D	Total/NA
Barium	0.36		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.00096	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	110		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0035	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0012	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Iron	41		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0028	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	54		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.30		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0037	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	38		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0053	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	180		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.067		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.35		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0028	J	0.010	0.0024	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016 (Continued) — Lab Sample ID: 500-118024-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	39		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	51		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.28		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0037	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	36		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	170		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.021		0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfate	4.0	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	20	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	57		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	45	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-118024-1	MW-01-GW-10032016	Water	10/03/16 11:05	10/03/16 16:38
500-118024-2	MW-02-GW-10032016	Water	10/03/16 13:50	10/03/16 16:38

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**110**		5.0	1.7	ug/L			10/05/16 13:55	1
Benzene	**36**		0.50	0.15	ug/L			10/05/16 13:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/05/16 13:55	1
Bromoform	<1.0		1.0	0.48	ug/L			10/05/16 13:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/05/16 13:55	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/05/16 13:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/05/16 13:55	1
Chlorobenzene	**5.3**		1.0	0.39	ug/L			10/05/16 13:55	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/05/16 13:55	1
Chloroform	<1.0		1.0	0.37	ug/L			10/05/16 13:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/05/16 13:55	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/05/16 13:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/05/16 13:55	1
Cyclohexane	**1.5**		1.0	0.49	ug/L			10/05/16 13:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/05/16 13:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/05/16 13:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/05/16 13:55	1
1,2-Dichlorobenzene	**1.6**		1.0	0.33	ug/L			10/05/16 13:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/05/16 13:55	1
1,4-Dichlorobenzene	**2.8**		1.0	0.36	ug/L			10/05/16 13:55	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/05/16 13:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/05/16 13:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/05/16 13:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/05/16 13:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/05/16 13:55	1
Ethylbenzene	**24**		0.50	0.18	ug/L			10/05/16 13:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/05/16 13:55	1
Isopropylbenzene	**11**		1.0	0.39	ug/L			10/05/16 13:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/05/16 13:55	1
Methylcyclohexane	**1.4**		1.0	0.32	ug/L			10/05/16 13:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/05/16 13:55	1
Methyl Ethyl Ketone	**110**		5.0	2.1	ug/L			10/05/16 13:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/05/16 13:55	1
Styrene	<1.0		1.0	0.39	ug/L			10/05/16 13:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/05/16 13:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/05/16 13:55	1
Toluene	**13**		0.50	0.15	ug/L			10/05/16 13:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/05/16 13:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/05/16 13:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/05/16 13:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/05/16 13:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/05/16 13:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/05/16 13:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/05/16 13:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/05/16 13:55	1
Vinyl chloride	**0.33**	**J**	0.50	0.20	ug/L			10/05/16 13:55	1
Xylenes, Total	**27**		1.0	0.22	ug/L			10/05/16 13:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*71 - 120*		*10/05/16 13:55*	*1*
Dibromofluoromethane	*14*	*X*	*70 - 120*		*10/05/16 13:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*10/05/16 13:55*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/05/16 13:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
methyl isobutyl ketone	**230**		50	22	ug/L			10/06/16 11:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*71 - 120*		*10/06/16 11:44*	*10*
Dibromofluoromethane	*101*		*70 - 120*		*10/06/16 11:44*	*10*
1,2-Dichloroethane-d4 (Surr)	*120*		*71 - 127*		*10/06/16 11:44*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/06/16 11:44*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**6.9**		0.75	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		10/04/16 15:42	10/13/16 00:58	1
Acetophenone	**2.2**	**J**	3.8	0.50	ug/L		10/04/16 15:42	10/13/16 00:58	1
Anthracene	<0.75		0.75	0.25	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		10/04/16 15:42	10/13/16 00:58	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		10/04/16 15:42	10/13/16 00:58	1
Carbazole	**6.7**		3.8	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chloroaniline	**13**		7.5	1.5	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		10/04/16 15:42	10/13/16 00:58	1
Chrysene	<0.38		0.38	0.051	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dibenzofuran	**0.91**	**J**	1.5	0.20	ug/L		10/04/16 15:42	10/13/16 00:58	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		10/04/16 15:42	10/13/16 00:58	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dimethylphenol	**5.9**	**J**	7.5	1.4	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		10/04/16 15:42	10/13/16 00:58	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		10/04/16 15:42	10/13/16 00:58	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,6-Dinitrotoluene	<0.75		0.75	0.056	ug/L		10/04/16 15:42	10/13/16 00:58	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		10/04/16 15:42	10/13/16 00:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.75		0.75	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
Fluorene	**1.7**		0.75	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorocyclopentadiene	<15		15	4.8	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		10/04/16 15:42	10/13/16 00:58	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		10/04/16 15:42	10/13/16 00:58	1
Isophorone	<1.5		1.5	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Methylnaphthalene	**5.0**		1.5	0.049	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Methylphenol	**2.3**		1.5	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
3 & 4 Methylphenol	**10**		1.5	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		10/04/16 15:42	10/13/16 00:58	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Nitrophenol	<15		15	5.6	ug/L		10/04/16 15:42	10/13/16 00:58	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		10/04/16 15:42	10/13/16 00:58	1
N-Nitrosodiphenylamine	<0.75		0.75	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		10/04/16 15:42	10/13/16 00:58	1
Pentachlorophenol	<15		15	3.0	ug/L		10/04/16 15:42	10/13/16 00:58	1
Phenanthrene	**0.88**		0.75	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
Pyrene	<0.75		0.75	0.32	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzaldehyde	<30	^	30	11	ug/L		10/04/16 15:42	10/13/16 00:58	1
Caprolactam	<7.5		7.5	1.1	ug/L		10/04/16 15:42	10/13/16 00:58	1
Atrazine	<3.8		3.8	0.47	ug/L		10/04/16 15:42	10/13/16 00:58	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*30 - 123*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Nitrobenzene-d5 (Surr)	*81*		*33 - 139*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
2,4,6-Tribromophenol (Surr)	*111*		*30 - 150*	*10/04/16 15:42*	*10/13/16 00:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**230**		7.5	2.3	ug/L		10/04/16 15:42	10/06/16 02:49	10
Phenol	**160**		38	5.1	ug/L		10/04/16 15:42	10/06/16 02:49	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 16:27	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 16:27	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/05/16 16:27	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/05/16 16:27	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 16:27	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/05/16 16:27	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 16:27	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 16:27	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 16:27	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/05/16 16:27	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:27	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/05/16 16:27	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*110*		*30 - 143*	*10/05/16 07:55*	*10/05/16 16:27*	*1*
Tetrachloro-m-xylene	*86*		*30 - 120*	*10/05/16 07:55*	*10/05/16 16:27*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*71*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:11*	*1*
DCB Decachlorobiphenyl	*103*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.42**		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:01	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:01	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Barium	**0.82**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:01	1
Calcium	**730**		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 18:00	5
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:01	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:01	1
Iron	**0.12**	**J**	0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:01	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 17:55	1
Magnesium	**0.25**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.0045	J	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Nickel	0.023		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:01	1
Potassium	52		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:01	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:01	1
Sodium	200		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:01	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:01	1
Zinc	0.015	J	0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.40		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:06	1
Antimony	0.0079	J	0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:06	1
Arsenic	0.0045	J	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Barium	0.81		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:06	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:06	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:06	1
Calcium	790		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 18:07	5
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:06	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:06	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:06	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:06	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:03	1
Magnesium	0.051	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:06	1
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Nickel	0.021		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:06	1
Potassium	50		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:06	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:06	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:06	1
Sodium	200		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:06	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:06	1
Zinc	0.012	J	0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:08	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.6		1.0	0.18	mg/L			10/05/16 06:24	1
Sulfate	44	B	10	2.9	mg/L			10/07/16 08:28	2
Total Organic Carbon - Duplicates	49	B	4.0	1.1	mg/L			10/07/16 19:29	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	10		5.0	2.5	mg/L			10/06/16 12:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016
Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**59**	**B**	5.0	2.5	mg/L		10/12/16 11:30	10/12/16 14:29	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/04/16 16:16	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/07/16 23:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Lab Sample ID: 500-118024-2

Date Collected: 10/03/16 13:50
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.0**		5.0	1.7	ug/L			10/05/16 14:21	1
Benzene	**15**		0.50	0.15	ug/L			10/05/16 14:21	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Bromoform	<1.0		1.0	0.48	ug/L			10/05/16 14:21	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/05/16 14:21	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/05/16 14:21	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/05/16 14:21	1
Chloroethane	**5.0**		1.0	0.51	ug/L			10/05/16 14:21	1
Chloroform	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/05/16 14:21	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/05/16 14:21	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/05/16 14:21	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/05/16 14:21	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/05/16 14:21	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/05/16 14:21	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,2-Dichlorobenzene	**5.6**		1.0	0.33	ug/L			10/05/16 14:21	1
1,3-Dichlorobenzene	**3.9**		1.0	0.40	ug/L			10/05/16 14:21	1
1,4-Dichlorobenzene	**9.2**		1.0	0.36	ug/L			10/05/16 14:21	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/05/16 14:21	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/05/16 14:21	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/05/16 14:21	1
Ethylbenzene	**1.7**		0.50	0.18	ug/L			10/05/16 14:21	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/05/16 14:21	1
Isopropylbenzene	**4.2**		1.0	0.39	ug/L			10/05/16 14:21	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/05/16 14:21	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/05/16 14:21	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/05/16 14:21	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/05/16 14:21	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/05/16 14:21	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
Styrene	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/05/16 14:21	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Toluene	**1.4**		0.50	0.15	ug/L			10/05/16 14:21	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/05/16 14:21	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/05/16 14:21	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/05/16 14:21	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/05/16 14:21	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/05/16 14:21	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/05/16 14:21	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/05/16 14:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/05/16 14:21	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/05/16 14:21	1
Xylenes, Total	**4.4**		1.0	0.22	ug/L			10/05/16 14:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*71 - 120*		*10/05/16 14:21*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*10/05/16 14:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*10/05/16 14:21*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/05/16 14:21*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**560**		10	3.9	ug/L			10/06/16 12:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*71 - 120*		*10/06/16 12:09*	*10*
Dibromofluoromethane	*114*		*70 - 120*		*10/06/16 12:09*	*10*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*10/06/16 12:09*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/06/16 12:09*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.98**		0.72	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
Acenaphthylene	<0.72		0.72	0.19	ug/L		10/04/16 15:42	10/06/16 03:18	1
Acetophenone	<3.6		3.6	0.48	ug/L		10/04/16 15:42	10/06/16 03:18	1
Anthracene	<0.72		0.72	0.24	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[a]anthracene	<0.14		0.14	0.041	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[a]pyrene	<0.14		0.14	0.071	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[b]fluoranthene	<0.14		0.14	0.058	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[g,h,i]perylene	<0.72		0.72	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[k]fluoranthene	<0.14		0.14	0.046	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-chloroethoxy)methane	<1.4		1.4	0.21	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-chloroethyl)ether	**1.2**	**J**	1.4	0.21	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-ethylhexyl) phthalate	<7.2		7.2	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		10/04/16 15:42	10/06/16 03:18	1
Butyl benzyl phthalate	<1.4		1.4	0.35	ug/L		10/04/16 15:42	10/06/16 03:18	1
Carbazole	**0.29**	**J**	3.6	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chloroaniline	<7.2		7.2	1.5	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chloro-3-methylphenol	<7.2		7.2	1.7	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Chloronaphthalene	**0.55**	**J**	1.4	0.17	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Chlorophenol	**2.7**	**J**	3.6	0.40	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		10/04/16 15:42	10/06/16 03:18	1
Chrysene	<0.36		0.36	0.049	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dibenzofuran	**0.29**	**J**	1.4	0.19	ug/L		10/04/16 15:42	10/06/16 03:18	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dichlorophenol	<7.2		7.2	1.9	ug/L		10/04/16 15:42	10/06/16 03:18	1
Diethyl phthalate	**0.43**	**J**	1.4	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dimethylphenol	<7.2		7.2	1.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dimethyl phthalate	<1.4		1.4	0.23	ug/L		10/04/16 15:42	10/06/16 03:18	1
Di-n-butyl phthalate	**0.79**	**J**	3.6	0.53	ug/L		10/04/16 15:42	10/06/16 03:18	1
4,6-Dinitro-2-methylphenol	<14		14	4.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dinitrophenol	<14		14	6.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dinitrotoluene	<0.72		0.72	0.18	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,6-Dinitrotoluene	<0.72		0.72	0.053	ug/L		10/04/16 15:42	10/06/16 03:18	1
Di-n-octyl phthalate	<7.2		7.2	0.76	ug/L		10/04/16 15:42	10/06/16 03:18	1

Client Sample ID: MW-02-GW-10032016

Lab Sample ID: 500-118024-2

Date Collected: 10/03/16 13:50

Matrix: Water

Date Received: 10/03/16 16:38

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.72		0.72	0.33	ug/L		10/04/16 15:42	10/06/16 03:18	1
Fluorene	**0.53**	**J**	0.72	0.18	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorobenzene	<0.36		0.36	0.057	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorobutadiene	<3.6		3.6	0.37	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorocyclopentadiene	<14		14	4.6	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachloroethane	<3.6		3.6	0.43	ug/L		10/04/16 15:42	10/06/16 03:18	1
Indeno[1,2,3-cd]pyrene	<0.14		0.14	0.054	ug/L		10/04/16 15:42	10/06/16 03:18	1
Isophorone	<1.4		1.4	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Methylphenol	<1.4		1.4	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
3 & 4 Methylphenol	**2.7**		1.4	0.32	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Nitroaniline	<3.6		3.6	0.93	ug/L		10/04/16 15:42	10/06/16 03:18	1
3-Nitroaniline	<7.2		7.2	1.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Nitroaniline	<7.2		7.2	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
Nitrobenzene	<0.72		0.72	0.32	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Nitrophenol	<7.2		7.2	1.8	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Nitrophenol	<14		14	5.4	ug/L		10/04/16 15:42	10/06/16 03:18	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		10/04/16 15:42	10/06/16 03:18	1
N-Nitrosodiphenylamine	**6.3**		0.72	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,2'-oxybis[1-chloropropane]	<1.4		1.4	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
Pentachlorophenol	<14		14	2.8	ug/L		10/04/16 15:42	10/06/16 03:18	1
Phenanthrene	**0.26**	**J**	0.72	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
Phenol	<3.6		3.6	0.49	ug/L		10/04/16 15:42	10/06/16 03:18	1
Pyrene	<0.72		0.72	0.31	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4,5-Trichlorophenol	<7.2		7.2	1.9	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzaldehyde	<29	^	29	11	ug/L		10/04/16 15:42	10/06/16 03:18	1
Caprolactam	<7.2		7.2	1.1	ug/L		10/04/16 15:42	10/06/16 03:18	1
Atrazine	<3.6		3.6	0.45	ug/L		10/04/16 15:42	10/06/16 03:18	1
1,1'-Biphenyl	**0.53**	**J**	3.6	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*30 - 123*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
2-Fluorophenol (Surr)	*73*		*30 - 110*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Nitrobenzene-d5 (Surr)	*77*		*33 - 139*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Phenol-d5 (Surr)	*53*		*20 - 100*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Terphenyl-d14 (Surr)	*105*		*42 - 150*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*10/04/16 15:42*	*10/06/16 03:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**120**		7.2	0.24	ug/L		10/04/16 15:42	10/13/16 19:32	5
Naphthalene	**92**		3.6	1.1	ug/L		10/04/16 15:42	10/13/16 19:32	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 16:46	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 16:46	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/05/16 16:46	1
beta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 16:46	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:46	1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 16:46	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/05/16 07:55	10/05/16 16:46	1
delta-BHC	<0.037		0.037	0.0096	ug/L		10/05/16 07:55	10/05/16 16:46	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 16:46	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 16:46	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/05/16 07:55	10/05/16 16:46	1
Heptachlor	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Methoxychlor	<0.075		0.075	0.021	ug/L		10/05/16 07:55	10/05/16 16:46	1
Toxaphene	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*30 - 143*	*10/05/16 07:55*	*10/05/16 16:46*	*1*
Tetrachloro-m-xylene	*109*		*30 - 120*	*10/05/16 07:55*	*10/05/16 16:46*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1221	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1232	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1242	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1248	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1254	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 20:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:26*	*1*
DCB Decachlorobiphenyl	*92*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:11	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:11	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Barium	**0.36**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:11	1
Cadmium	**0.00096**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:11	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:11	1
Chromium	**0.0035**	**J**	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:11	1
Cobalt	**0.0012**	**J**	0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:11	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:11	1
Iron	**41**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:11	1
Lead	**0.0028**	**J**	0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:10	1
Magnesium	**54**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.30**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Nickel	**0.0037**	**J**	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:11	1
Potassium	**38**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:11	1
Selenium	**0.0053**	**J**	0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:11	1
Sodium	**180**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:11	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:11	1
Zinc	**0.067**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:15	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:15	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Barium	**0.35**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:15	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:15	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:15	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:15	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:15	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:15	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:15	1
Iron	**39**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:15	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:14	1
Magnesium	**51**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:15	1
Manganese	**0.28**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Nickel	**0.0037**	**J**	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:15	1
Potassium	**36**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:15	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:15	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:15	1
Sodium	**170**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:15	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:15	1
Zinc	**0.021**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:14	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 06:36	1
Sulfate	**4.0**	**J B**	5.0	1.5	mg/L			10/07/16 08:31	1
Total Organic Carbon - Duplicates	**20**	**B**	1.0	0.27	mg/L			10/07/16 02:18	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**57**		5.0	2.5	mg/L			10/05/16 10:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016
Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**45**	**B**	5.0	2.5	mg/L		10/12/16 11:30	10/12/16 14:32	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:42	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/07/16 23:51	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

GC/MS VOA

Analysis Batch: 354652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	8260B	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	8260B	
MB 500-354652/7	Method Blank	Total/NA	Water	8260B	
LCS 500-354652/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 354841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1 - DL	MW-01-GW-10032016	Total/NA	Water	8260B	
500-118024-2 - DL	MW-02-GW-10032016	Total/NA	Water	8260B	
MB 500-354841/7	Method Blank	Total/NA	Water	8260B	
LCS 500-354841/5	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 354582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1 - DL	MW-01-GW-10032016	Total/NA	Water	3510C	
500-118024-1	MW-01-GW-10032016	Total/NA	Water	3510C	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	3510C	
500-118024-2 - DL	MW-02-GW-10032016	Total/NA	Water	3510C	
MB 500-354582/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354582/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 354791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1 - DL	MW-01-GW-10032016	Total/NA	Water	8270D	354582
500-118024-2	MW-02-GW-10032016	Total/NA	Water	8270D	354582
MB 500-354582/1-A	Method Blank	Total/NA	Water	8270D	354582
LCS 500-354582/2-A	Lab Control Sample	Total/NA	Water	8270D	354582

Analysis Batch: 355873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	8270D	354582

Analysis Batch: 356045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-2 - DL	MW-02-GW-10032016	Total/NA	Water	8270D	354582

GC Semi VOA

Prep Batch: 354671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	3510C	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	3510C	
MB 500-354671/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354671/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-354671/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354671/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Analysis Batch: 354743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	8081B	354671
500-118024-2	MW-02-GW-10032016	Total/NA	Water	8081B	354671
MB 500-354671/1-A	Method Blank	Total/NA	Water	8081B	354671
LCS 500-354671/2-A	Lab Control Sample	Total/NA	Water	8081B	354671
LCSD 500-354671/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	354671

Analysis Batch: 354768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	8082A	354671
500-118024-2	MW-02-GW-10032016	Total/NA	Water	8082A	354671
MB 500-354671/1-A	Method Blank	Total/NA	Water	8082A	354671
LCS 500-354671/4-A	Lab Control Sample	Total/NA	Water	8082A	354671

Metals

Prep Batch: 355131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Dissolved	Water	7470A	
500-118024-1	MW-01-GW-10032016	Total/NA	Water	7470A	
500-118024-2	MW-02-GW-10032016	Dissolved	Water	7470A	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	7470A	
MB 500-355131/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-355131/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 355216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Dissolved	Water	7470A	355131
500-118024-1	MW-01-GW-10032016	Total/NA	Water	7470A	355131
500-118024-2	MW-02-GW-10032016	Dissolved	Water	7470A	355131
500-118024-2	MW-02-GW-10032016	Total/NA	Water	7470A	355131
MB 500-355131/12-A	Method Blank	Total/NA	Water	7470A	355131
LCS 500-355131/13-A	Lab Control Sample	Total/NA	Water	7470A	355131

Prep Batch: 355531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Dissolved	Water	3010A	
500-118024-1	MW-01-GW-10032016	Total/NA	Water	3010A	
500-118024-2	MW-02-GW-10032016	Dissolved	Water	3010A	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	3010A	
MB 500-355531/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355531/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 500-355531/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Analysis Batch: 355956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Dissolved	Water	6010C	355531
500-118024-1	MW-01-GW-10032016	Total/NA	Water	6010C	355531
500-118024-2	MW-02-GW-10032016	Dissolved	Water	6010C	355531
500-118024-2	MW-02-GW-10032016	Total/NA	Water	6010C	355531
MB 500-355531/1-A	Method Blank	Total/NA	Water	6010C	355531

Metals (Continued)

Analysis Batch: 355956 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-355531/2-A	Lab Control Sample	Total/NA	Water	6010C	355531
LCSD 500-355531/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	355531

Analysis Batch: 356193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Dissolved	Water	6010C	355531
500-118024-1	MW-01-GW-10032016	Dissolved	Water	6010C	355531
500-118024-1	MW-01-GW-10032016	Total/NA	Water	6010C	355531
500-118024-1	MW-01-GW-10032016	Total/NA	Water	6010C	355531
500-118024-2	MW-02-GW-10032016	Dissolved	Water	6010C	355531
500-118024-2	MW-02-GW-10032016	Total/NA	Water	6010C	355531
MB 500-355531/1-A	Method Blank	Total/NA	Water	6010C	355531
LCS 500-355531/2-A	Lab Control Sample	Total/NA	Water	6010C	355531
LCSD 500-355531/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	355531

General Chemistry

Analysis Batch: 354645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	9034	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	9034	
MB 500-354645/1	Method Blank	Total/NA	Water	9034	
LCS 500-354645/2	Lab Control Sample	Total/NA	Water	9034	
500-118024-1 MS	MW-01-GW-10032016	Total/NA	Water	9034	
500-118024-1 MSD	MW-01-GW-10032016	Total/NA	Water	9034	

Analysis Batch: 354719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-2	MW-02-GW-10032016	Total/NA	Water	SM 2540D	
MB 500-354719/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-354719/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 354929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	SM 2540D	
MB 500-354929/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-354929/2	Lab Control Sample	Total/NA	Water	SM 2540D	
500-118024-1 MS	MW-01-GW-10032016	Total/NA	Water	SM 2540D	
500-118024-1 DU	MW-01-GW-10032016	Total/NA	Water	SM 2540D	

Analysis Batch: 355060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	9038	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	9038	
MB 500-355060/3	Method Blank	Total/NA	Water	9038	
LCS 500-355060/4	Lab Control Sample	Total/NA	Water	9038	
500-118024-1 MS	MW-01-GW-10032016	Total/NA	Water	9038	
500-118024-1 MSD	MW-01-GW-10032016	Total/NA	Water	9038	

General Chemistry (Continued)

Analysis Batch: 355160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-2	MW-02-GW-10032016	Total/NA	Water	9060A	
MB 500-355160/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355160/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 355179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-2	MW-02-GW-10032016	Total/NA	Water	SM 4500 NO2 B	
MB 500-355179/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-355179/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 355180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	SM 4500 NO2 B	
MB 500-355180/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-355180/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	
500-118024-1 MS	MW-01-GW-10032016	Total/NA	Water	SM 4500 NO2 B	
500-118024-1 MSD	MW-01-GW-10032016	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 355260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	SM 4500 NO3 F	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	SM 4500 NO3 F	
MB 500-355260/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-355260/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	
500-118024-1 MS	MW-01-GW-10032016	Total/NA	Water	SM 4500 NO3 F	
500-118024-1 MSD	MW-01-GW-10032016	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 355461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	Nitrate by calc	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	Nitrate by calc	

Analysis Batch: 355462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	9060A	
MB 500-355462/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355462/5	Lab Control Sample	Total/NA	Water	9060A	

Prep Batch: 355797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	SM 4500 NH3 B	
500-118024-2	MW-02-GW-10032016	Total/NA	Water	SM 4500 NH3 B	
MB 500-355797/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-355797/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 355913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118024-1	MW-01-GW-10032016	Total/NA	Water	SM 4500 NH3 G	355797
500-118024-2	MW-02-GW-10032016	Total/NA	Water	SM 4500 NH3 G	355797
MB 500-355797/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	355797
LCS 500-355797/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	355797

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-118024-1	MW-01-GW-10032016	108	14 X	112	95
500-118024-1 - DL	MW-01-GW-10032016	113	101	120	96
500-118024-2	MW-02-GW-10032016	108	94	109	95
500-118024-2 - DL	MW-02-GW-10032016	114	114	113	95
LCS 500-354652/5	Lab Control Sample	105	90	103	95
LCS 500-354841/5	Lab Control Sample	105	88	101	98
MB 500-354652/7	Method Blank	113	93	109	95
MB 500-354841/7	Method Blank	109	95	113	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-118024-1 - DL	MW-01-GW-10032016	97	66	80	69	120	115
500-118024-1	MW-01-GW-10032016	76	60	81	57	102	111
500-118024-2	MW-02-GW-10032016	82	73	77	53	105	114
500-118024-2 - DL	MW-02-GW-10032016	101	59	91	30	122	135
LCS 500-354582/2-A	Lab Control Sample	88	86	93	65	107	111
MB 500-354582/1-A	Method Blank	81	78	80	54	109	97

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118024-1	MW-01-GW-10032016	110	86
500-118024-2	MW-02-GW-10032016	81	109
LCS 500-354671/2-A	Lab Control Sample	105	66
LCSD 500-354671/3-A	Lab Control Sample Dup	102	59
MB 500-354671/1-A	Method Blank	73	65

Surrogate Legend

DCB = DCB Decachlorobiphenyl

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	**Client Sample ID**	**TCX2 (30-127)**	**DCB2 (30-150)**
500-118024-1	MW-01-GW-10032016	71	103
500-118024-2	MW-02-GW-10032016	72	92
LCS 500-354671/4-A	Lab Control Sample	71	98
MB 500-354671/1-A	Method Blank	67	99

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-354652/7
Matrix: Water
Analysis Batch: 354652

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/05/16 10:32	1
Benzene	<0.50		0.50	0.15	ug/L			10/05/16 10:32	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/05/16 10:32	1
Bromoform	<1.0		1.0	0.48	ug/L			10/05/16 10:32	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/05/16 10:32	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/05/16 10:32	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/05/16 10:32	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/05/16 10:32	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/05/16 10:32	1
Chloroform	<1.0		1.0	0.37	ug/L			10/05/16 10:32	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/05/16 10:32	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/05/16 10:32	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/05/16 10:32	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/05/16 10:32	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/05/16 10:32	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/05/16 10:32	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/05/16 10:32	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/05/16 10:32	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/05/16 10:32	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/05/16 10:32	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/05/16 10:32	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/05/16 10:32	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/05/16 10:32	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/05/16 10:32	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/05/16 10:32	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/05/16 10:32	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/05/16 10:32	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/05/16 10:32	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/05/16 10:32	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/05/16 10:32	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/05/16 10:32	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/05/16 10:32	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/05/16 10:32	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/05/16 10:32	1
Styrene	<1.0		1.0	0.39	ug/L			10/05/16 10:32	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/05/16 10:32	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/05/16 10:32	1
Toluene	<0.50		0.50	0.15	ug/L			10/05/16 10:32	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/05/16 10:32	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/05/16 10:32	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/05/16 10:32	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/05/16 10:32	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/05/16 10:32	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/05/16 10:32	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/05/16 10:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/05/16 10:32	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/05/16 10:32	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/05/16 10:32	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		71 - 120		10/05/16 10:32	1
Dibromofluoromethane	93		70 - 120		10/05/16 10:32	1
1,2-Dichloroethane-d4 (Surr)	109		71 - 127		10/05/16 10:32	1
Toluene-d8 (Surr)	95		75 - 120		10/05/16 10:32	1

Lab Sample ID: LCS 500-354652/5
Matrix: Water
Analysis Batch: 354652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	40.6		ug/L		81	37 - 141
Benzene	50.0	47.3		ug/L		95	70 - 125
Bromodichloromethane	50.0	51.9		ug/L		104	70 - 125
Bromoform	50.0	55.5		ug/L		111	54 - 128
Bromomethane	50.0	39.1		ug/L		78	40 - 150
Carbon disulfide	50.0	44.5		ug/L		89	68 - 125
Carbon tetrachloride	50.0	46.0		ug/L		92	70 - 125
Chlorobenzene	50.0	50.2		ug/L		100	70 - 125
Chloroethane	50.0	47.2		ug/L		94	60 - 139
Chloroform	50.0	48.9		ug/L		98	70 - 125
Chloromethane	50.0	55.9		ug/L		112	60 - 140
cis-1,2-Dichloroethene	50.0	43.1		ug/L		86	70 - 125
cis-1,3-Dichloropropene	50.0	51.7		ug/L		103	70 - 125
Cyclohexane	50.0	53.1		ug/L		106	56 - 149
Dibromochloromethane	50.0	49.8		ug/L		100	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	54.0		ug/L		108	51 - 125
1,2-Dibromoethane	50.0	49.4		ug/L		99	70 - 125
1,2-Dichlorobenzene	50.0	44.3		ug/L		89	70 - 125
1,3-Dichlorobenzene	50.0	44.5		ug/L		89	70 - 125
1,4-Dichlorobenzene	50.0	43.2		ug/L		86	70 - 125
Dichlorodifluoromethane	50.0	57.0		ug/L		114	51 - 140
1,1-Dichloroethane	50.0	50.2		ug/L		100	70 - 125
1,2-Dichloroethane	50.0	54.3		ug/L		109	70 - 125
1,1-Dichloroethene	50.0	43.5		ug/L		87	70 - 125
1,2-Dichloropropane	50.0	52.4		ug/L		105	70 - 125
Ethylbenzene	50.0	47.4		ug/L		95	70 - 125
2-Hexanone	50.0	50.0		ug/L		100	49 - 139
Isopropylbenzene	50.0	47.2		ug/L		94	70 - 125
Methyl acetate	250	246		ug/L		98	60 - 148
Methylcyclohexane	50.0	45.4		ug/L		91	70 - 127
Methylene Chloride	50.0	43.0		ug/L		86	68 - 125
Methyl Ethyl Ketone	50.0	46.9		ug/L		94	52 - 142
methyl isobutyl ketone	50.0	47.7		ug/L		95	47 - 140
Methyl tert-butyl ether	50.0	45.1		ug/L		90	67 - 125
Styrene	50.0	50.3		ug/L		101	70 - 125
1,1,2,2-Tetrachloroethane	50.0	49.9		ug/L		100	68 - 125
Tetrachloroethene	50.0	51.9		ug/L		104	70 - 125
Toluene	50.0	48.7		ug/L		97	70 - 125
trans-1,2-Dichloroethene	50.0	42.9		ug/L		86	70 - 125
trans-1,3-Dichloropropene	50.0	55.1		ug/L		110	70 - 125
1,2,4-Trichlorobenzene	50.0	48.4		ug/L		97	64 - 126
1,1,1-Trichloroethane	50.0	47.6		ug/L		95	70 - 125
1,1,2-Trichloroethane	50.0	49.8		ug/L		100	70 - 125
Trichloroethene	50.0	43.6		ug/L		87	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354652/5
Matrix: Water
Analysis Batch: 354652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	50.0		ug/L		100	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	46.5		ug/L		93	57 - 141
Vinyl chloride	50.0	47.3		ug/L		95	70 - 126
Xylenes, Total	100	103		ug/L		103	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*71 - 120*
Dibromofluoromethane	*90*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*
Toluene-d8 (Surr)	*95*		*75 - 120*

Lab Sample ID: MB 500-354841/7
Matrix: Water
Analysis Batch: 354841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/06/16 10:28	1
Benzene	<0.50		0.50	0.15	ug/L			10/06/16 10:28	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/06/16 10:28	1
Bromoform	<1.0		1.0	0.48	ug/L			10/06/16 10:28	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/06/16 10:28	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/06/16 10:28	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/06/16 10:28	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/06/16 10:28	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/06/16 10:28	1
Chloroform	<1.0		1.0	0.37	ug/L			10/06/16 10:28	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/06/16 10:28	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/06/16 10:28	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/06/16 10:28	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/06/16 10:28	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/06/16 10:28	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/06/16 10:28	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/06/16 10:28	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/06/16 10:28	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/06/16 10:28	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/06/16 10:28	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/06/16 10:28	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/06/16 10:28	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/06/16 10:28	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/06/16 10:28	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/06/16 10:28	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/06/16 10:28	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/06/16 10:28	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/06/16 10:28	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/06/16 10:28	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/06/16 10:28	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/06/16 10:28	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354841/7
Matrix: Water
Analysis Batch: 354841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/06/16 10:28	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/06/16 10:28	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/06/16 10:28	1
Styrene	<1.0		1.0	0.39	ug/L			10/06/16 10:28	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/06/16 10:28	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/06/16 10:28	1
Toluene	<0.50		0.50	0.15	ug/L			10/06/16 10:28	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/06/16 10:28	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/06/16 10:28	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/06/16 10:28	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/06/16 10:28	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/06/16 10:28	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/06/16 10:28	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/06/16 10:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/06/16 10:28	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/06/16 10:28	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/06/16 10:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*71 - 120*		*10/06/16 10:28*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*10/06/16 10:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*10/06/16 10:28*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*10/06/16 10:28*	*1*

Lab Sample ID: LCS 500-354841/5
Matrix: Water
Analysis Batch: 354841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	33.7		ug/L		67	37 - 141
Benzene	50.0	46.1		ug/L		92	70 - 125
Bromodichloromethane	50.0	52.6		ug/L		105	70 - 125
Bromoform	50.0	56.1		ug/L		112	54 - 128
Bromomethane	50.0	38.8		ug/L		78	40 - 150
Carbon disulfide	50.0	44.9		ug/L		90	68 - 125
Carbon tetrachloride	50.0	48.4		ug/L		97	70 - 125
Chlorobenzene	50.0	52.0		ug/L		104	70 - 125
Chloroethane	50.0	48.2		ug/L		96	60 - 139
Chloroform	50.0	50.7		ug/L		101	70 - 125
Chloromethane	50.0	59.9		ug/L		120	60 - 140
cis-1,2-Dichloroethene	50.0	43.0		ug/L		86	70 - 125
cis-1,3-Dichloropropene	50.0	56.1		ug/L		112	70 - 125
Cyclohexane	50.0	53.3		ug/L		107	56 - 149
Dibromochloromethane	50.0	51.6		ug/L		103	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	52.9		ug/L		106	51 - 125
1,2-Dibromoethane	50.0	50.9		ug/L		102	70 - 125
1,2-Dichlorobenzene	50.0	46.1		ug/L		92	70 - 125
1,3-Dichlorobenzene	50.0	46.9		ug/L		94	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354841/5
Matrix: Water
Analysis Batch: 354841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 125
Dichlorodifluoromethane	50.0	57.7		ug/L		115	51 - 140
1,1-Dichloroethane	50.0	49.6		ug/L		99	70 - 125
1,2-Dichloroethane	50.0	53.9		ug/L		108	70 - 125
1,1-Dichloroethene	50.0	42.6		ug/L		85	70 - 125
1,2-Dichloropropane	50.0	51.3		ug/L		103	70 - 125
Ethylbenzene	50.0	50.3		ug/L		101	70 - 125
2-Hexanone	50.0	45.6		ug/L		91	49 - 139
Isopropylbenzene	50.0	49.5		ug/L		99	70 - 125
Methyl acetate	250	241		ug/L		96	60 - 148
Methylcyclohexane	50.0	47.0		ug/L		94	70 - 127
Methylene Chloride	50.0	43.5		ug/L		87	68 - 125
Methyl Ethyl Ketone	50.0	42.1		ug/L		84	52 - 142
methyl isobutyl ketone	50.0	44.5		ug/L		89	47 - 140
Methyl tert-butyl ether	50.0	44.6		ug/L		89	67 - 125
Styrene	50.0	51.2		ug/L		102	70 - 125
1,1,2,2-Tetrachloroethane	50.0	50.7		ug/L		101	68 - 125
Tetrachloroethene	50.0	54.2		ug/L		108	70 - 125
Toluene	50.0	51.6		ug/L		103	70 - 125
trans-1,2-Dichloroethene	50.0	43.2		ug/L		86	70 - 125
trans-1,3-Dichloropropene	50.0	58.1		ug/L		116	70 - 125
1,2,4-Trichlorobenzene	50.0	49.2		ug/L		98	64 - 126
1,1,1-Trichloroethane	50.0	50.6		ug/L		101	70 - 125
1,1,2-Trichloroethane	50.0	51.4		ug/L		103	70 - 125
Trichloroethene	50.0	43.8		ug/L		88	70 - 125
Trichlorofluoromethane	50.0	54.6		ug/L		109	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	47.5		ug/L		95	57 - 141
Vinyl chloride	50.0	48.3		ug/L		97	70 - 126
Xylenes, Total	100	106		ug/L		106	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*71 - 120*
Dibromofluoromethane	*88*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*71 - 127*
Toluene-d8 (Surr)	*98*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-354582/1-A
Matrix: Water
Analysis Batch: 354791

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354582

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		10/04/16 15:42	10/05/16 20:26	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		10/04/16 15:42	10/05/16 20:26	1
Acetophenone	<4.0		4.0	0.53	ug/L		10/04/16 15:42	10/05/16 20:26	1
Anthracene	<0.80		0.80	0.27	ug/L		10/04/16 15:42	10/05/16 20:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354582/1-A
Matrix: Water
Analysis Batch: 354791

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354582

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		10/04/16 15:42	10/05/16 20:26	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		10/04/16 15:42	10/05/16 20:26	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		10/04/16 15:42	10/05/16 20:26	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		10/04/16 15:42	10/05/16 20:26	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		10/04/16 15:42	10/05/16 20:26	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		10/04/16 15:42	10/05/16 20:26	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		10/04/16 15:42	10/05/16 20:26	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		10/04/16 15:42	10/05/16 20:26	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		10/04/16 15:42	10/05/16 20:26	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		10/04/16 15:42	10/05/16 20:26	1
Carbazole	<4.0		4.0	0.28	ug/L		10/04/16 15:42	10/05/16 20:26	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		10/04/16 15:42	10/05/16 20:26	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		10/04/16 15:42	10/05/16 20:26	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		10/04/16 15:42	10/05/16 20:26	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		10/04/16 15:42	10/05/16 20:26	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		10/04/16 15:42	10/05/16 20:26	1
Chrysene	<0.40		0.40	0.055	ug/L		10/04/16 15:42	10/05/16 20:26	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		10/04/16 15:42	10/05/16 20:26	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		10/04/16 15:42	10/05/16 20:26	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		10/04/16 15:42	10/05/16 20:26	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		10/04/16 15:42	10/05/16 20:26	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		10/04/16 15:42	10/05/16 20:26	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		10/04/16 15:42	10/05/16 20:26	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		10/04/16 15:42	10/05/16 20:26	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		10/04/16 15:42	10/05/16 20:26	1
Fluoranthene	<0.80		0.80	0.36	ug/L		10/04/16 15:42	10/05/16 20:26	1
Fluorene	<0.80		0.80	0.20	ug/L		10/04/16 15:42	10/05/16 20:26	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		10/04/16 15:42	10/05/16 20:26	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		10/04/16 15:42	10/05/16 20:26	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		10/04/16 15:42	10/05/16 20:26	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		10/04/16 15:42	10/05/16 20:26	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		10/04/16 15:42	10/05/16 20:26	1
Isophorone	<1.6		1.6	0.30	ug/L		10/04/16 15:42	10/05/16 20:26	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		10/04/16 15:42	10/05/16 20:26	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		10/04/16 15:42	10/05/16 20:26	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		10/04/16 15:42	10/05/16 20:26	1
Naphthalene	<0.80		0.80	0.25	ug/L		10/04/16 15:42	10/05/16 20:26	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		10/04/16 15:42	10/05/16 20:26	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		10/04/16 15:42	10/05/16 20:26	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		10/04/16 15:42	10/05/16 20:26	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		10/04/16 15:42	10/05/16 20:26	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		10/04/16 15:42	10/05/16 20:26	1
4-Nitrophenol	<16		16	5.9	ug/L		10/04/16 15:42	10/05/16 20:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354582/1-A
Matrix: Water
Analysis Batch: 354791

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354582

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		10/04/16 15:42	10/05/16 20:26	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		10/04/16 15:42	10/05/16 20:26	1
Pentachlorophenol	<16		16	3.2	ug/L		10/04/16 15:42	10/05/16 20:26	1
Phenanthrene	<0.80		0.80	0.24	ug/L		10/04/16 15:42	10/05/16 20:26	1
Phenol	<4.0		4.0	0.54	ug/L		10/04/16 15:42	10/05/16 20:26	1
Pyrene	<0.80		0.80	0.34	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		10/04/16 15:42	10/05/16 20:26	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		10/04/16 15:42	10/05/16 20:26	1
Benzaldehyde	<32	^	32	12	ug/L		10/04/16 15:42	10/05/16 20:26	1
Caprolactam	<8.0		8.0	1.2	ug/L		10/04/16 15:42	10/05/16 20:26	1
Atrazine	<4.0		4.0	0.50	ug/L		10/04/16 15:42	10/05/16 20:26	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		10/04/16 15:42	10/05/16 20:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*81*		*30 - 123*	*10/04/16 15:42*	*10/05/16 20:26*	*1*
2-Fluorophenol (Surr)	*78*		*30 - 110*	*10/04/16 15:42*	*10/05/16 20:26*	*1*
Nitrobenzene-d5 (Surr)	*80*		*33 - 139*	*10/04/16 15:42*	*10/05/16 20:26*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*10/04/16 15:42*	*10/05/16 20:26*	*1*
Terphenyl-d14 (Surr)	*109*		*42 - 150*	*10/04/16 15:42*	*10/05/16 20:26*	*1*
2,4,6-Tribromophenol (Surr)	*97*		*30 - 150*	*10/04/16 15:42*	*10/05/16 20:26*	*1*

Lab Sample ID: LCS 500-354582/2-A
Matrix: Water
Analysis Batch: 354791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354582

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	28.7		ug/L		90	41 - 112
Acenaphthylene	32.0	27.0		ug/L		84	48 - 110
Acetophenone	32.0	28.3		ug/L		88	54 - 116
Anthracene	32.0	29.3		ug/L		91	65 - 118
Benzo[a]anthracene	32.0	31.3		ug/L		98	69 - 121
Benzo[a]pyrene	32.0	31.9		ug/L		100	69 - 130
Benzo[b]fluoranthene	32.0	34.5		ug/L		108	66 - 133
Benzo[g,h,i]perylene	32.0	31.9		ug/L		100	47 - 145
Benzo[k]fluoranthene	32.0	32.0		ug/L		100	64 - 134
Bis(2-chloroethoxy)methane	32.0	30.0		ug/L		94	55 - 115
Bis(2-chloroethyl)ether	32.0	27.3		ug/L		85	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	30.8		ug/L		96	60 - 132
4-Bromophenyl phenyl ether	32.0	30.3		ug/L		95	60 - 124
Butyl benzyl phthalate	32.0	30.8		ug/L		96	63 - 127
Carbazole	32.0	30.0		ug/L		94	71 - 132
4-Chloroaniline	32.0	25.2		ug/L		79	15 - 125
4-Chloro-3-methylphenol	32.0	31.0		ug/L		97	63 - 120
2-Chloronaphthalene	32.0	26.7		ug/L		83	38 - 110
2-Chlorophenol	32.0	29.0		ug/L		90	49 - 110
4-Chlorophenyl phenyl ether	32.0	29.7		ug/L		93	55 - 115
Chrysene	32.0	29.7		ug/L		93	70 - 126

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354582/2-A
Matrix: Water
Analysis Batch: 354791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354582

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibenz(a,h)anthracene	32.0	31.3		ug/L		98	59 - 145
Dibenzofuran	32.0	29.0		ug/L		91	54 - 111
3,3'-Dichlorobenzidine	32.0	34.6		ug/L		108	57 - 145
2,4-Dichlorophenol	32.0	32.5		ug/L		101	53 - 123
Diethyl phthalate	32.0	29.8		ug/L		93	64 - 126
2,4-Dimethylphenol	32.0	26.7		ug/L		83	42 - 115
Dimethyl phthalate	32.0	30.0		ug/L		94	66 - 120
Di-n-butyl phthalate	32.0	30.8		ug/L		96	67 - 125
4,6-Dinitro-2-methylphenol	64.0	66.2		ug/L		103	34 - 152
2,4-Dinitrophenol	64.0	71.9		ug/L		112	20 - 140
2,4-Dinitrotoluene	32.0	31.6		ug/L		99	67 - 131
2,6-Dinitrotoluene	32.0	29.9		ug/L		93	66 - 125
Di-n-octyl phthalate	32.0	31.8		ug/L		99	63 - 133
Fluoranthene	32.0	30.6		ug/L		96	68 - 127
Fluorene	32.0	28.9		ug/L		90	54 - 113
Hexachlorobenzene	32.0	29.2		ug/L		91	63 - 127
Hexachlorobutadiene	32.0	21.7		ug/L		68	20 - 110
Hexachlorocyclopentadiene	32.0	21.4		ug/L		67	10 - 110
Hexachloroethane	32.0	21.1		ug/L		66	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	31.8		ug/L		99	52 - 150
Isophorone	32.0	27.8		ug/L		87	55 - 120
2-Methylnaphthalene	32.0	24.6		ug/L		77	32 - 110
2-Methylphenol	32.0	29.3		ug/L		92	49 - 113
3 & 4 Methylphenol	32.0	29.7		ug/L		93	49 - 114
Naphthalene	32.0	24.8		ug/L		78	32 - 110
2-Nitroaniline	32.0	30.7		ug/L		96	61 - 126
3-Nitroaniline	32.0	27.9		ug/L		87	42 - 134
4-Nitroaniline	32.0	24.0		ug/L		75	40 - 142
Nitrobenzene	32.0	29.3		ug/L		91	49 - 116
2-Nitrophenol	32.0	29.8		ug/L		93	51 - 120
4-Nitrophenol	64.0	43.5		ug/L		68	21 - 110
N-Nitrosodi-n-propylamine	32.0	29.2		ug/L		91	52 - 122
N-Nitrosodiphenylamine	32.0	30.7		ug/L		96	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	27.6		ug/L		86	34 - 110
Pentachlorophenol	64.0	59.9		ug/L		94	29 - 138
Phenanthrene	32.0	29.6		ug/L		92	63 - 121
Phenol	32.0	20.8		ug/L		65	33 - 100
Pyrene	32.0	29.6		ug/L		92	65 - 122
2,4,5-Trichlorophenol	32.0	31.8		ug/L		99	63 - 121
2,4,6-Trichlorophenol	32.0	32.2		ug/L		101	61 - 120
Caprolactam	32.0	18.9		ug/L		59	25 - 100
Atrazine	32.0	30.1		ug/L		94	57 - 128
1,1'-Biphenyl	32.0	27.6		ug/L		86	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*88*		*30 - 123*
2-Fluorophenol (Surr)	*86*		*30 - 110*
Nitrobenzene-d5 (Surr)	*93*		*33 - 139*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354582/2-A
Matrix: Water
Analysis Batch: 354791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354582

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Phenol-d5 (Surr)	*65*		*20 - 100*
Terphenyl-d14 (Surr)	*107*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*111*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-354671/1-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.010		0.010	0.0013	ug/L		10/05/16 07:55	10/05/16 15:29	1
alpha-BHC	<0.010		0.010	0.00065	ug/L		10/05/16 07:55	10/05/16 15:29	1
alpha-Chlordane	<0.010		0.010	0.0011	ug/L		10/05/16 07:55	10/05/16 15:29	1
beta-BHC	<0.010		0.010	0.0026	ug/L		10/05/16 07:55	10/05/16 15:29	1
4,4'-DDD	<0.010		0.010	0.0033	ug/L		10/05/16 07:55	10/05/16 15:29	1
4,4'-DDE	<0.010		0.010	0.00095	ug/L		10/05/16 07:55	10/05/16 15:29	1
4,4'-DDT	<0.010		0.010	0.00080	ug/L		10/05/16 07:55	10/05/16 15:29	1
delta-BHC	<0.010		0.010	0.0026	ug/L		10/05/16 07:55	10/05/16 15:29	1
Dieldrin	<0.010		0.010	0.0032	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endosulfan I	<0.010		0.010	0.0010	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endosulfan II	<0.010		0.010	0.00070	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endosulfan sulfate	<0.010		0.010	0.0029	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endrin	<0.010		0.010	0.0036	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endrin aldehyde	<0.010		0.010	0.0021	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endrin ketone	<0.010		0.010	0.0043	ug/L		10/05/16 07:55	10/05/16 15:29	1
gamma-BHC (Lindane)	<0.010		0.010	0.0014	ug/L		10/05/16 07:55	10/05/16 15:29	1
gamma-Chlordane	<0.010		0.010	0.0018	ug/L		10/05/16 07:55	10/05/16 15:29	1
Heptachlor	<0.010		0.010	0.0034	ug/L		10/05/16 07:55	10/05/16 15:29	1
Heptachlor epoxide	<0.010		0.010	0.0035	ug/L		10/05/16 07:55	10/05/16 15:29	1
Methoxychlor	<0.020		0.020	0.0058	ug/L		10/05/16 07:55	10/05/16 15:29	1
Toxaphene	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 15:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*30 - 143*	*10/05/16 07:55*	*10/05/16 15:29*	*1*
Tetrachloro-m-xylene	*65*		*30 - 120*	*10/05/16 07:55*	*10/05/16 15:29*	*1*

Lab Sample ID: LCS 500-354671/2-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.0800	0.0566		ug/L		71	40 - 130
alpha-BHC	0.0800	0.0754		ug/L		94	70 - 130
alpha-Chlordane	0.0800	0.0782		ug/L		98	70 - 130
beta-BHC	0.0800	0.0714		ug/L		89	70 - 130
4,4'-DDD	0.0800	0.0766		ug/L		96	70 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-354671/2-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDE	0.0800	0.0776		ug/L		97	56 - 130
4,4'-DDT	0.0800	0.0794		ug/L		99	50 - 137
delta-BHC	0.0800	0.0792		ug/L		99	70 - 130
Dieldrin	0.0800	0.0768		ug/L		96	70 - 130
Endosulfan I	0.0800	0.0609		ug/L		76	40 - 130
Endosulfan II	0.0800	0.0664		ug/L		83	49 - 130
Endosulfan sulfate	0.0800	0.0851		ug/L		106	70 - 130
Endrin	0.0800	0.0751		ug/L		94	69 - 130
Endrin aldehyde	0.0800	0.0733		ug/L		92	63 - 130
Endrin ketone	0.0800	0.0727		ug/L		91	54 - 141
gamma-BHC (Lindane)	0.0800	0.0734		ug/L		92	70 - 130
gamma-Chlordane	0.0800	0.0669		ug/L		84	63 - 130
Heptachlor	0.0800	0.0593		ug/L		74	40 - 130
Heptachlor epoxide	0.0800	0.0725		ug/L		91	70 - 130
Methoxychlor	0.0800	0.0709		ug/L		89	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*105*		*30 - 143*
Tetrachloro-m-xylene	*66*		*30 - 120*

Lab Sample ID: LCSD 500-354671/3-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354671

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.0800	0.0519		ug/L		65	40 - 130	9	20
alpha-BHC	0.0800	0.0691		ug/L		86	70 - 130	9	20
alpha-Chlordane	0.0800	0.0722		ug/L		90	70 - 130	8	20
beta-BHC	0.0800	0.0668		ug/L		84	70 - 130	7	20
4,4'-DDD	0.0800	0.0717		ug/L		90	70 - 130	7	20
4,4'-DDE	0.0800	0.0721		ug/L		90	56 - 130	7	20
4,4'-DDT	0.0800	0.0741		ug/L		93	50 - 137	7	20
delta-BHC	0.0800	0.0737		ug/L		92	70 - 130	7	20
Dieldrin	0.0800	0.0724		ug/L		90	70 - 130	6	20
Endosulfan I	0.0800	0.0566		ug/L		71	40 - 130	7	20
Endosulfan II	0.0800	0.0628		ug/L		78	49 - 130	6	20
Endosulfan sulfate	0.0800	0.0795		ug/L		99	70 - 130	7	20
Endrin	0.0800	0.0704		ug/L		88	69 - 130	6	20
Endrin aldehyde	0.0800	0.0694		ug/L		87	63 - 130	6	20
Endrin ketone	0.0800	0.0668		ug/L		84	54 - 141	8	20
gamma-BHC (Lindane)	0.0800	0.0693		ug/L		87	70 - 130	6	20
gamma-Chlordane	0.0800	0.0633		ug/L		79	63 - 130	5	20
Heptachlor	0.0800	0.0552		ug/L		69	40 - 130	7	20
Heptachlor epoxide	0.0800	0.0682		ug/L		85	70 - 130	6	20
Methoxychlor	0.0800	0.0691		ug/L		86	47 - 153	3	20

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 500-354671/3-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354671

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*102*		*30 - 143*
Tetrachloro-m-xylene	*59*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-354671/1-A
Matrix: Water
Analysis Batch: 354768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.10		0.10	0.017	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1221	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1232	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1242	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1248	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1254	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1260	<0.10		0.10	0.018	ug/L		10/05/16 07:55	10/05/16 16:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*30 - 127*	*10/05/16 07:55*	*10/05/16 16:51*	*1*
DCB Decachlorobiphenyl	*99*		*30 - 150*	*10/05/16 07:55*	*10/05/16 16:51*	*1*

Lab Sample ID: LCS 500-354671/4-A
Matrix: Water
Analysis Batch: 354768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	1.00	0.854		ug/L		85	58 - 121
PCB-1260	1.00	1.03		ug/L		103	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*71*		*30 - 127*
DCB Decachlorobiphenyl	*98*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-355531/1-A
Matrix: Water
Analysis Batch: 355956

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355531

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 01:41	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 01:41	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 01:41	1
Barium	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 01:41	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 01:41	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 01:41	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-355531/1-A
Matrix: Water
Analysis Batch: 355956

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355531

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.20		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 01:41	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 01:41	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 01:41	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 01:41	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 01:41	1
Magnesium	<0.10		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 01:41	1
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 01:41	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 01:41	1
Potassium	<0.50		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 01:41	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 01:41	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 01:41	1
Sodium	<1.0		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 01:41	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 01:41	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 01:41	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 01:41	1

Lab Sample ID: MB 500-355531/1-A
Matrix: Water
Analysis Batch: 356193

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355531

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 17:45	1

Lab Sample ID: LCS 500-355531/2-A
Matrix: Water
Analysis Batch: 355956

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355531

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.09		mg/L		105	80 - 120
Antimony	0.500	0.517		mg/L		103	80 - 120
Arsenic	0.100	0.102		mg/L		102	80 - 120
Barium	2.00	2.11		mg/L		106	80 - 120
Beryllium	0.0500	0.0518		mg/L		104	80 - 120
Cadmium	0.0500	0.0510		mg/L		102	80 - 120
Calcium	10.0	10.9		mg/L		109	80 - 120
Chromium	0.200	0.209		mg/L		104	80 - 120
Cobalt	0.500	0.519		mg/L		104	80 - 120
Copper	0.250	0.261		mg/L		104	80 - 120
Iron	1.00	1.12		mg/L		112	80 - 120
Magnesium	10.0	10.2		mg/L		102	80 - 120
Manganese	0.500	0.518		mg/L		104	80 - 120
Nickel	0.500	0.518		mg/L		104	80 - 120
Potassium	10.0	10.6		mg/L		106	80 - 120
Selenium	0.100	0.0993		mg/L		99	80 - 120
Silver	0.0500	0.0488		mg/L		98	80 - 120
Sodium	10.0	10.7		mg/L		107	80 - 120
Thallium	0.100	0.101		mg/L		101	80 - 120
Vanadium	0.500	0.529		mg/L		106	80 - 120
Zinc	0.500	0.511		mg/L		102	80 - 120

Lab Sample ID: LCS 500-355531/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356193 — **Prep Batch: 355531**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.100	0.100		mg/L		100	80 - 120

Lab Sample ID: LCSD 500-355531/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355956 — **Prep Batch: 355531**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	2.00	2.03		mg/L		101	80 - 120	3	20
Antimony	0.500	0.496		mg/L		99	80 - 120	4	20
Arsenic	0.100	0.100		mg/L		100	80 - 120	2	20
Barium	2.00	2.03		mg/L		102	80 - 120	4	20
Beryllium	0.0500	0.0498		mg/L		100	80 - 120	4	20
Cadmium	0.0500	0.0492		mg/L		98	80 - 120	4	20
Calcium	10.0	10.2		mg/L		102	80 - 120	6	20
Chromium	0.200	0.199		mg/L		99	80 - 120	5	20
Cobalt	0.500	0.498		mg/L		100	80 - 120	4	20
Copper	0.250	0.252		mg/L		101	80 - 120	4	20
Iron	1.00	1.05		mg/L		105	80 - 120	6	20
Magnesium	10.0	9.77		mg/L		98	80 - 120	4	20
Manganese	0.500	0.498		mg/L		100	80 - 120	4	20
Nickel	0.500	0.498		mg/L		100	80 - 120	4	20
Potassium	10.0	10.2		mg/L		102	80 - 120	4	20
Selenium	0.100	0.0945		mg/L		95	80 - 120	5	20
Silver	0.0500	0.0472		mg/L		94	80 - 120	3	20
Sodium	10.0	10.3		mg/L		103	80 - 120	4	20
Thallium	0.100	0.0964		mg/L		96	80 - 120	4	20
Vanadium	0.500	0.507		mg/L		101	80 - 120	4	20
Zinc	0.500	0.490		mg/L		98	80 - 120	4	20

Lab Sample ID: LCSD 500-355531/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356193 — **Prep Batch: 355531**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.100	0.0973		mg/L		97	80 - 120	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-355131/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355216 — **Prep Batch: 355131**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:05	1

Lab Sample ID: LCS 500-355131/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355216 — **Prep Batch: 355131**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00211		mg/L		106	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-354645/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354645

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 05:39	1

Lab Sample ID: LCS 500-354645/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354645

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.87	6.50		mg/L		95	80 - 120

Lab Sample ID: 500-118024-1 MS — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354645

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	3.6		6.87	9.37		mg/L		84	75 - 125

Lab Sample ID: 500-118024-1 MSD — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354645

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	3.6		6.87	9.54		mg/L		87	75 - 125	2	20

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-355060/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.00	J	5.0	1.5	mg/L			10/07/16 08:23	1

Lab Sample ID: LCS 500-355060/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	80 - 120

Lab Sample ID: 500-118024-1 MS — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	44	B	80.0	116		mg/L		89	75 - 125

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: 500-118024-1 MSD — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	44	B	80.0	119		mg/L		93	75 - 125	3	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-355160/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.527	J	1.0	0.27	mg/L			10/06/16 23:12	1

Lab Sample ID: LCS 500-355160/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.7		mg/L		107	80 - 120
TOC Result 1	10.0	10.7		mg/L		107	80 - 120
TOC Result 2	10.0	10.7		mg/L		107	80 - 120

Lab Sample ID: MB 500-355462/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.507	J	1.0	0.27	mg/L			10/07/16 18:24	1

Lab Sample ID: LCS 500-355462/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	9.84		mg/L		98	80 - 120
TOC Result 1	10.0	9.78		mg/L		98	80 - 120
TOC Result 2	10.0	9.90		mg/L		99	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-354719/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354719

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/05/16 10:20	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 500-354719/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	204		mg/L		102	80 - 120

Lab Sample ID: MB 500-354929/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/06/16 12:35	1

Lab Sample ID: LCS 500-354929/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	188		mg/L		94	80 - 120

Lab Sample ID: 500-118024-1 MS — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	10		100	105		mg/L		95	75 - 125

Lab Sample ID: 500-118024-1 DU — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	10		9.50		mg/L		5	5

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-355797/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355913 — **Prep Batch: 355797**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.116	J	0.20	0.10	mg/L		10/12/16 11:30	10/12/16 14:23	1

Lab Sample ID: LCS 500-355797/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355913 — **Prep Batch: 355797**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.63		mg/L		105	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-355179/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355179

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:40	1

Lab Sample ID: LCS 500-355179/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355179

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.101		mg/L		101	80 - 120

Lab Sample ID: MB 500-355180/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355180

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/04/16 16:15	1

Lab Sample ID: LCS 500-355180/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355180

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.104		mg/L		104	80 - 120

Lab Sample ID: 500-118024-1 MS — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355180

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	<0.020		0.100	0.0936		mg/L		94	75 - 125

Lab Sample ID: 500-118024-1 MSD — **Client Sample ID: MW-01-GW-10032016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355180

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Nitrite	<0.020		0.100	0.0945		mg/L		95	75 - 125	1	20

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-355260/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355260

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/07/16 22:58	1

Method: SM 4500 NO3 F - Nitrogen, Nitrate (Continued)

Lab Sample ID: LCS 500-355260/5
Matrix: Water
Analysis Batch: 355260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate Nitrite			1.00	0.938		mg/L		94	80 - 120		

Lab Sample ID: 500-118024-1 MS
Matrix: Water
Analysis Batch: 355260

Client Sample ID: MW-01-GW-10032016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate Nitrite	<0.10		1.00	0.784		mg/L		78	75 - 125		

Lab Sample ID: 500-118024-1 MSD
Matrix: Water
Analysis Batch: 355260

Client Sample ID: MW-01-GW-10032016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Nitrate Nitrite	<0.10		1.00	0.823		mg/L		82	75 - 125	5	20

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354652	10/05/16 13:55	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	354841	10/06/16 11:44	PMF	TAL CHI
Total/NA	Prep	3510C	DL		354582	10/04/16 15:42	JP1	TAL CHI
Total/NA	Analysis	8270D	DL	10	354791	10/06/16 02:49	GES	TAL CHI
Total/NA	Prep	3510C			354582	10/04/16 15:42	JP1	TAL CHI
Total/NA	Analysis	8270D		1	355873	10/13/16 00:58	GES	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354743	10/05/16 16:27	PJG	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8082A		1	354768	10/05/16 20:11	BJH	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	355956	10/13/16 02:06	PJ1	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356193	10/13/16 18:03	PJ1	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		5	356193	10/13/16 18:07	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	355956	10/13/16 02:01	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356193	10/13/16 17:55	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		5	356193	10/13/16 18:00	PJ1	TAL CHI
Dissolved	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	355216	10/08/16 09:10	MJD	TAL CHI
Total/NA	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	355216	10/08/16 09:08	MJD	TAL CHI
Total/NA	Analysis	9034		1	354645		CLB	TAL CHI
					(Start)	10/05/16 06:24		
					(End)	10/05/16 06:28		
Total/NA	Analysis	9038		2	355060		CLB	TAL CHI
					(Start)	10/07/16 08:28		
					(End)	10/07/16 08:29		
Total/NA	Analysis	9060A		4	355462	10/07/16 19:29	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	355461	10/10/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:37		
					(End)	10/06/16 12:38		
Total/NA	Prep	SM 4500 NH3 B			355797	10/12/16 11:30	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	355913	10/12/16 14:29	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355180		EAT	TAL CHI
					(Start)	10/04/16 16:16		
					(End)	10/04/16 16:17		
Total/NA	Analysis	SM 4500 NO3 F		1	355260	10/07/16 23:48	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Lab Sample ID: 500-118024-2

Date Collected: 10/03/16 13:50
Matrix: Water
Date Received: 10/03/16 16:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354652	10/05/16 14:21	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	354841	10/06/16 12:09	PMF	TAL CHI
Total/NA	Prep	3510C			354582	10/04/16 15:42	JP1	TAL CHI
Total/NA	Analysis	8270D		1	354791	10/06/16 03:18	GES	TAL CHI
Total/NA	Prep	3510C	DL		354582	10/04/16 15:42	JP1	TAL CHI
Total/NA	Analysis	8270D	DL	5	356045	10/13/16 19:32	GES	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354743	10/05/16 16:46	PJG	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8082A		1	354768	10/05/16 20:26	BJH	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	355956	10/13/16 02:15	PJ1	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356193	10/13/16 18:14	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	355956	10/13/16 02:11	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356193	10/13/16 18:10	PJ1	TAL CHI
Dissolved	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	355216	10/08/16 09:16	MJD	TAL CHI
Total/NA	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	355216	10/08/16 09:14	MJD	TAL CHI
Total/NA	Analysis	9034		1	354645		CLB	TAL CHI
					(Start)	10/05/16 06:36		
					(End)	10/05/16 06:40		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:31		
					(End)	10/07/16 08:32		
Total/NA	Analysis	9060A		1	355160	10/07/16 02:18	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	355461	10/10/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354719		SMO	TAL CHI
					(Start)	10/05/16 10:22		
					(End)	10/05/16 10:24		
Total/NA	Prep	SM 4500 NH3 B			355797	10/12/16 11:30	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	355913	10/12/16 14:32	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355179		EAT	TAL CHI
					(Start)	10/05/16 12:42		
					(End)	10/05/16 12:42		
Total/NA	Analysis	SM 4500 NO3 F		1	355260	10/07/16 23:51	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118024 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118024
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 3.4

Client: Arcadis
Client Project #: CI001805.0002.00009
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhofer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Sulfide, PCBs, Pesticides	Total metals	Dissolved metals	Ammonia, NO3, NO2	Sulfide	TAC	TSS, SO4, NH2	Dissolved Gases	VOC	Comments
1		MW-01-GW-10032016	10/3/16	1105	18	W	—	—	—	—	—	—	—	—	—	D, TS metals
2		MW-02-GW-10032016	10/3/16	1350	18	W	—	—	—	—	—	—	—	—	—	field filtered
																- Poor meniscus
																formed in diss
																Gas samples so
																bubbles couldn't be
																removed.

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/3/16	1600	David Beden	TA	10/3/16	16:00
David Beden	TA	10/3/16	16:38	[signature]	TA-CHI	10/4/16	0730

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124 500 (1309)
10/17/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118024-1

Login Number: 118024
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118024-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/17/2016 11:17:14 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Receipt Checklists 17

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-2

Job ID: 500-118024-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118024-2

Comments
No additional comments.

Receipt
The samples were received on 10/3/2016 4:38 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

October 14, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-118024-2**
Pace Workorder: 20508

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, October 06, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 10/14/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages ____

Report ID: 20508 - 848730

Page 1 of 9

CERTIFICATE OF ANALYSIS

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 20508 500-118024-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
205080001	MW-01-GW-10032016	Water	10/3/2016 11:05	10/6/2016 10:15
205080002	MW-02-GW-10032016	Water	10/3/2016 13:50	10/6/2016 10:15

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ANALYTICAL RESULTS

Workorder: 20508 500-118024-2

Lab ID: 205080001 Date Received: 10/6/2016 10:15 Matrix: Water
Sample ID: MW-01-GW-10032016 Date Collected: 10/3/2016 11:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	12000	ug/l	0.50	0.027	1	10/12/2016 13:57	TD	n
Carbon Dioxide	<5.0	mg/l	5.0	0.24	1	10/12/2016 13:57	TD	n
Oxygen	3.9	mg/l	0.50	0.13	1	10/12/2016 13:57	TD	n
Nitrogen	10	mg/l	2.0	0.24	1	10/12/2016 13:57	TD	n

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ANALYTICAL RESULTS

Workorder: 20508 500-118024-2

Lab ID: 205080002 Date Received: 10/6/2016 10:15 Matrix: Water
Sample ID: MW-02-GW-10032016 Date Collected: 10/3/2016 13:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	12000	ug/l	0.50	0.027	1	10/12/2016 14:10	TD	n
Carbon Dioxide	290	mg/l	5.0	0.24	1	10/12/2016 14:10	TD	n
Oxygen	1.6	mg/l	0.50	0.13	1	10/12/2016 14:10	TD	n
Nitrogen	8.3	mg/l	2.0	0.24	1	10/12/2016 14:10	TD	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 20508 500-118024-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 20508 500-118024-2

QC Batch: DISG/5664 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 205080001, 205080002

METHOD BLANK: 44719

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 44720

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 44721 44723

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	800	810	106	108	80-120	1.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 44722 44724

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	140	140	117	117	80-120	0	20	n
Oxygen	mg/l	11	12	10	105	91	80-120	14	20	n
Nitrogen	mg/l	140	120	120	90	87	80-120	3.4	20	n

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 20508 500-118024-2

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 20508 500-118024-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
205080001	MW-01-GW-10032016			AM20GAX	DISG/5664
205080002	MW-02-GW-10032016			AM20GAX	DISG/5664

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TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20508

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/17/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78752.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118024-2
Address: 220 William Pitt Way, ,	Due Date Requested: 10/13/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered (Sample (Yes or No))	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of Containers	Special Instructions/Note:
			Preservation Code:						
MW-01-GW-10032016 (500-118024-1)	10/3/16	11:05 Central		Water			X	2	
MW-02-GW-10032016 (500-118024-2)	10/3/16	13:50 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed 1.1°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/04/16 1330	Company TA	Received by: Thomas Sarg	Date/Time: 10/5/16 840	Company Test America
Relinquished by:	Date/Time: 10/5/16	Company	Received by: Leslie PACS	Date/Time: 10.6.16 1015	Company PACS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Cooler Receipt Form

Client Name: TA Chicago Project: 500-118024-2 Lab Work Order: 20508

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 6479 2546 3400

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: Bubble Wrap Absorbent (Foam) Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1.1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags			✓	
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by : LY Date: 10.6.16

Project Manager Review : RW Date: 10-6-16

F-PAE-Q-009-rev.00, 20 Nov2014

Sample Tracking Record

Client Name: Test America

Page ____ of ____

Client Project Number: 500-118024-2

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas				
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
2050871-2				see above	LY	10.13.16	10:15
↓	TJS	10-12-16	0400	dss gas	TJS	10-12-16	1500

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118024 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118024
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 3.4

Client: Arcadis
Client Project #: CI001805.0002.00004
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhofer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Sulfide, PCBs, Pesticides (8)	Total metals (3)	Dissolved metals (3)	Ammonia, NO3, NO2 (6)	Sulfide (5)	TOC (2)	TSS, SO4, NH3 (8)	Dissolved Gases (9)	VOC (1)	Comments
1		MW-01-GW-10032016	10/3/16	1105	18	W	—	—	—	—	—	—	—	—	—	D, 3S Metals
2		MW-02-GW-10032016	10/3/16	1350	18	W	—	—	—	—	—	—	—	—	—	field filtered
																- Poor meniscus
																formed on diss
																Gas samples so
																bubbles couldn't be
																removed.

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/3/16	1600	David Beden	TA	10/3/16	16:00
David Beden	TA	10/3/16	16:38	[signature]	TA-CHI	10/4/16	0730

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124 500 (1309)
10/17/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118024-2

Login Number: 118024
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118070-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
10/18/2016 4:42:54 PM
Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Designee for

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-118070-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118070-1

Comments
No additional comments.

Receipt
The samples were received on 10/4/2016 4:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.2º C.

GC/MS VOA
Method(s) 8260B: The initial calibration verification (ICV) result for Dichlorodifluoromethane was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

Method(s) 8260B: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-07-GW-10042016 (500-118070-4). The sample was analyzed within 7 days per EPA recommendation therefore, no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following samples were diluted due to the nature of the sample matrix: MW-03-GW-10042016 (500-118070-1), MW-04-GW-10042016 (500-118070-2) and MW-07-GW-10042016 (500-118070-4). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The following sample required a dilution due to the nature of the sample matrix: MW-03-GW-10042016 (500-118070-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: The method blank for preparation batch 500-354760 and analytical batch 500-355037 contained 2-Methylnaphthalene and Naphthalene above the method detection limit. The target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8270D: CCVIS 500-355037/2 was outside the method criteria for Benzaldehyde (48.8%D, low); 4-Chloroaniline (25.4%D, high); and Hexachlorocyclopentadiene (20.6%D, low). CCVIS 500-355337/2 was outside the method criteria for Benzaldehyde (43.8%D, low); Hexachlorocyclopentadiene (24.2%D, low) and Pentachlorophenol (24.4%D, low). CCVIS 500-356320/2 was outside the method criteria for 2,2'-oxybis[1-chloropropane] (21.7%D, low) and 2,4,6-Tribromophenol (Surr) (28.3%D, high). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.(CCVIS 500-355037/2), (CCVIS 500-355337/2) and (CCVIS 500-356320/2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-04-GW-10042016 (500-118070-2) and MW-05-GW-10042016 (500-118070-3). The reagent lot number used was: 143486.

Method(s) 8081B: The following sample was diluted due to the nature of the sample matrix: MW-07-GW-10042016 (500-118070-4). Elevated reporting limits (RLs) are provided.

Method(s) 8081B: The Tetrachloro-m-xylene surrogate recovery for the following sample was outside acceptance limits (high biased) on the primary column due to matrix interference: MW-04-GW-10042016 (500-118070-2). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method(s) 8081B: DCB Decachlorobiphenyl (low biased) and Tetrachloro-m-xylene (high biased) surrogate recovery for the following samples were outside control limits: MW-07-GW-10042016 (500-118070-4). Evidence of matrix interference is present; therefore,

Job ID: 500-118070-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

re-extraction and re-analysis was not performed.

Method(s) 8082A: The following sample required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-04-GW-10042016 (500-118070-2). The reagent lot number used was: 143486.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 500-354902 recovered above the upper control limit for DCB Decachlorobiphenyl surrogate. The samples associated with this CCV were non-detect; therefore, the data have been reported. The following sample is impacted: MW-04-GW-10042016 (500-118070-2).

Method(s) 8082A: DCB Decachlorobiphenyl surrogate %D was above the control limit on the confirmation column for the following continuing calibration verifications: (CCV 500-355347/15) and (CCVIS 500-355347/1); however, %D was within control limits on the primary column.

Method(s) 8082A: Tetrachloro-m-xylene surrogate recovery fell below the control limit on the primary and confirmation column for the following sample: MW-07-GW-10042016 (500-118070-4); however, DCB Decachlorobiphenyl surrogate recovery was within control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 3010A: Due to the matrix, the initial volume(s) used for the following sample deviated from the standard procedure: MW-07-GW-10042016 (500-118070-4). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 6010C: The CRI was outside of the control limits for Copper.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) 9038: Please note that the following Sulfate sample has been diluted due to the matrix of the sample and has been reported as a non-detect with an elevated reporting limit: MW-07-GW-10042016 (500-118070-4).

Method(s) SM 4500 NO3 F: The initial calibration verification (ICV) associated with batch 500-356272 recovered below the lower control limit at 89% for Nitrate-Nitrite. The laboratory control standard (LCS), which is made from the same source as the ICV and initially brackets the samples, recovered within acceptance criteria at 93%; therefore the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016 — Lab Sample ID: 500-118070-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	110		5.0	1.5	ug/L	10		8260B	Total/NA
Ethylbenzene	25		5.0	1.8	ug/L	10		8260B	Total/NA
Toluene	96		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total	150		10	2.2	ug/L	10		8260B	Total/NA
Acenaphthene	21		7.4	2.3	ug/L	10		8270D	Total/NA
Acenaphthylene	3.4	J	7.4	2.0	ug/L	10		8270D	Total/NA
Anthracene	9.1		7.4	2.5	ug/L	10		8270D	Total/NA
Carbazole	150		37	2.6	ug/L	10		8270D	Total/NA
Dibenzofuran	42		15	1.9	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	74		74	13	ug/L	10		8270D	Total/NA
Fluoranthene	6.2	J	7.4	3.3	ug/L	10		8270D	Total/NA
Fluorene	62		7.4	1.8	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	300	B	15	0.48	ug/L	10		8270D	Total/NA
2-Methylphenol	21		15	2.2	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	12	J	15	3.3	ug/L	10		8270D	Total/NA
Phenanthrene	55		7.4	2.2	ug/L	10		8270D	Total/NA
Pyrene	4.5	J	7.4	3.1	ug/L	10		8270D	Total/NA
1,1'-Biphenyl	26	J	37	2.7	ug/L	10		8270D	Total/NA
Naphthalene - DL	2200	B	37	11	ug/L	50		8270D	Total/NA
Barium	1.0		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	76		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	4.6		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	84		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.14		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0051	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	62		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	270		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.96		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	73		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	3.6		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	82		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.13		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0049	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	60		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	260		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	0.31	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	3.6	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	24	B	1.0	0.27	mg/L	1		9060A	Total/NA
Nitrogen, Nitrate	0.077	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	8.5		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	38		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.077	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: MW-04-GW-10042016 — Lab Sample ID: 500-118070-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	33		2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	0.82	J	1.0	0.39	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016 (Continued) — Lab Sample ID: 500-118070-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	7.3		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.7		1.0	0.49	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	24		1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	7.2		0.50	0.18	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	6.1		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	21		0.50	0.15	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.0		1.0	0.35	ug/L	1		8260B	Total/NA
Vinyl chloride	8.5		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	5.9		1.0	0.22	ug/L	1		8260B	Total/NA
Benzene - DL	530		5.0	1.5	ug/L	10		8260B	Total/NA
2,4-Dimethylphenol	17	J	36	6.6	ug/L	5		8270D	Total/NA
2-Methylphenol	5.5	J	7.3	1.1	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	2.1	J	7.3	1.6	ug/L	5		8270D	Total/NA
Arsenic	0.0084	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.058		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	100		0.20	0.059	mg/L	1		6010C	Total/NA
Magnesium	27		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.32		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	15		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	340		1.0	0.43	mg/L	1		6010C	Total/NA
Arsenic	0.010		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.061		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Magnesium	29		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.33		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	16		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	360		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	7.8		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	210	B	50	15	mg/L	10		9038	Total/NA
Total Organic Carbon - Duplicates	26		2.0	0.53	mg/L	2		9060A	Total/NA
Ammonia	9.8		0.40	0.20	mg/L	2		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-05-GW-10042016 — Lab Sample ID: 500-118070-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.0		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	0.27	J	0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	4.3		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.7		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.9		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	35		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	1.0		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	0.75	J	1.0	0.22	ug/L	1		8260B	Total/NA
2-Chloronaphthalene	0.18	J	1.5	0.17	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	0.36	J B	1.5	0.048	ug/L	1		8270D	Total/NA
Aluminum	0.28		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.89		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0013	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	70		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016 (Continued) — Lab Sample ID: 500-118070-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	0.0054	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	18		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.013		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	80		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.057		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0044	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	43		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	150		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.044		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.97		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	76		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	18		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	88		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.053		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	47		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	160		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	3.4	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	20	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	50		5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-07-GW-10042016 — Lab Sample ID: 500-118070-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	30		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	11		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	7.2		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	5.0		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	16		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	130		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	8.6		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.94	J	1.0	0.32	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	69		5.0	2.2	ug/L	1		8260B	Total/NA
Vinyl chloride	11		0.50	0.20	ug/L	1		8260B	Total/NA
Toluene - DL	310		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	560		10	2.2	ug/L	10		8260B	Total/NA
Acetophenone	17	J	37	4.9	ug/L	10		8270D	Total/NA
Benzo[a]pyrene	1.1	J	1.5	0.72	ug/L	10		8270D	Total/NA
Benzo[b]fluoranthene	1.5		1.5	0.59	ug/L	10		8270D	Total/NA
Benzo[k]fluoranthene	0.62	J	1.5	0.47	ug/L	10		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	210		73	13	ug/L	10		8270D	Total/NA
Carbazole	4.2	J	37	2.6	ug/L	10		8270D	Total/NA
Chrysene	1.8	J	3.7	0.50	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	320		73	13	ug/L	10		8270D	Total/NA
Fluoranthene	5.4	J	7.3	3.3	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	5.6	J B	15	0.48	ug/L	10		8270D	Total/NA
2-Methylphenol	88		15	2.2	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	290		15	3.3	ug/L	10		8270D	Total/NA
Naphthalene	35	B	7.3	2.3	ug/L	10		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016 (Continued) — Lab Sample ID: 500-118070-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
N-Nitrosodiphenylamine	5.4	J	7.3	2.7	ug/L	10		8270D	Total/NA
Phenanthrene	8.7		7.3	2.2	ug/L	10		8270D	Total/NA
Pyrene	5.3	J	7.3	3.1	ug/L	10		8270D	Total/NA
PCB-1242	2.7		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1242	3.0		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1248	2.5		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1248	3.5		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1254	1.6		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1254	2.4		0.37	0.18	ug/L	1		8082A	Total/NA
Aluminum	1.7		1.0	0.31	mg/L	1		6010C	Total/NA
Arsenic	0.050		0.050	0.017	mg/L	1		6010C	Total/NA
Barium	0.63		0.050	0.011	mg/L	1		6010C	Total/NA
Cadmium	0.0078	J	0.010	0.0047	mg/L	1		6010C	Total/NA
Calcium	11		1.0	0.30	mg/L	1		6010C	Total/NA
Chromium	0.50		0.050	0.012	mg/L	1		6010C	Total/NA
Cobalt	0.040		0.025	0.0048	mg/L	1		6010C	Total/NA
Copper	0.082		0.050	0.011	mg/L	1		6010C	Total/NA
Iron	5.2		1.0	0.50	mg/L	1		6010C	Total/NA
Lead	0.71		0.025	0.013	mg/L	1		6010C	Total/NA
Magnesium	25		0.50	0.20	mg/L	1		6010C	Total/NA
Manganese	0.017	J	0.050	0.017	mg/L	1		6010C	Total/NA
Nickel	0.15		0.050	0.018	mg/L	1		6010C	Total/NA
Potassium	680		2.5	0.81	mg/L	1		6010C	Total/NA
Sodium	3400	V	5.0	2.2	mg/L	1		6010C	Total/NA
Vanadium	0.081		0.025	0.0093	mg/L	1		6010C	Total/NA
Zinc	1.1		0.10	0.045	mg/L	1		6010C	Total/NA
Aluminum	1.4		1.0	0.31	mg/L	1		6010C	Dissolved
Arsenic	0.038	J	0.050	0.017	mg/L	1		6010C	Dissolved
Barium	0.60	V	0.050	0.011	mg/L	1		6010C	Dissolved
Cadmium	0.0061	J	0.010	0.0047	mg/L	1		6010C	Dissolved
Calcium	11		1.0	0.30	mg/L	1		6010C	Dissolved
Chromium	0.48		0.050	0.012	mg/L	1		6010C	Dissolved
Cobalt	0.040		0.025	0.0048	mg/L	1		6010C	Dissolved
Copper	0.048	J	0.050	0.011	mg/L	1		6010C	Dissolved
Iron	5.1		1.0	0.50	mg/L	1		6010C	Dissolved
Lead	0.32		0.025	0.013	mg/L	1		6010C	Dissolved
Magnesium	25	V	0.50	0.20	mg/L	1		6010C	Dissolved
Nickel	0.16		0.050	0.018	mg/L	1		6010C	Dissolved
Potassium	700	V	2.5	0.81	mg/L	1		6010C	Dissolved
Sodium	3500	V	5.0	2.2	mg/L	1		6010C	Dissolved
Vanadium	0.076		0.025	0.0093	mg/L	1		6010C	Dissolved
Zinc	0.65		0.10	0.045	mg/L	1		6010C	Dissolved
Mercury	0.0011		0.00020	0.00011	mg/L	1		7470A	Total/NA
Mercury	0.00051		0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	9.1		1.0	0.18	mg/L	1		9034	Total/NA
Total Organic Carbon - Duplicates	540	B	20	5.3	mg/L	20		9060A	Total/NA
Nitrogen, Nitrate	0.10		0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	7.5		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	710		40	20	mg/L	100		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.10		0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-118070-1	MW-03-GW-10042016	Water	10/04/16 08:10	10/04/16 16:50
500-118070-2	MW-04-GW-10042016	Water	10/04/16 09:35	10/04/16 16:50
500-118070-3	MW-05-GW-10042016	Water	10/04/16 11:10	10/04/16 16:50
500-118070-4	MW-07-GW-10042016	Water	10/04/16 12:50	10/04/16 16:50

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/07/16 21:01	10
Benzene	**110**		5.0	1.5	ug/L			10/07/16 21:01	10
Bromodichloromethane	<10		10	3.7	ug/L			10/07/16 21:01	10
Bromoform	<10		10	4.8	ug/L			10/07/16 21:01	10
Bromomethane	<20		20	8.0	ug/L			10/07/16 21:01	10
Carbon disulfide	<20		20	4.5	ug/L			10/07/16 21:01	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/07/16 21:01	10
Chlorobenzene	<10		10	3.9	ug/L			10/07/16 21:01	10
Chloroethane	<10		10	5.1	ug/L			10/07/16 21:01	10
Chloroform	<10		10	3.7	ug/L			10/07/16 21:01	10
Chloromethane	<10		10	3.2	ug/L			10/07/16 21:01	10
cis-1,2-Dichloroethene	<10		10	4.1	ug/L			10/07/16 21:01	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/07/16 21:01	10
Cyclohexane	<10		10	4.9	ug/L			10/07/16 21:01	10
Dibromochloromethane	<10		10	4.9	ug/L			10/07/16 21:01	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			10/07/16 21:01	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/07/16 21:01	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			10/07/16 21:01	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/07/16 21:01	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/07/16 21:01	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/07/16 21:01	10
1,1-Dichloroethane	<10		10	4.1	ug/L			10/07/16 21:01	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/07/16 21:01	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/07/16 21:01	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/07/16 21:01	10
Ethylbenzene	**25**		5.0	1.8	ug/L			10/07/16 21:01	10
2-Hexanone	<50		50	16	ug/L			10/07/16 21:01	10
Isopropylbenzene	<10		10	3.9	ug/L			10/07/16 21:01	10
Methyl acetate	<50		50	20	ug/L			10/07/16 21:01	10
Methylcyclohexane	<10		10	3.2	ug/L			10/07/16 21:01	10
Methylene Chloride	<50		50	16	ug/L			10/07/16 21:01	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/07/16 21:01	10
methyl isobutyl ketone	<50		50	22	ug/L			10/07/16 21:01	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/07/16 21:01	10
Styrene	<10		10	3.9	ug/L			10/07/16 21:01	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/07/16 21:01	10
Tetrachloroethene	<10		10	3.7	ug/L			10/07/16 21:01	10
Toluene	**96**		5.0	1.5	ug/L			10/07/16 21:01	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/07/16 21:01	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/07/16 21:01	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/07/16 21:01	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/07/16 21:01	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/07/16 21:01	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/07/16 21:01	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/07/16 21:01	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/07/16 21:01	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/07/16 21:01	10
Xylenes, Total	**150**		10	2.2	ug/L			10/07/16 21:01	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Date Collected: 10/04/16 08:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/07/16 21:01*	*10*
Dibromofluoromethane	*96*		*70 - 120*		*10/07/16 21:01*	*10*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 21:01*	*10*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/07/16 21:01*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**21**		7.4	2.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Acenaphthylene	**3.4**	**J**	7.4	2.0	ug/L		10/05/16 15:21	10/10/16 18:14	10
Acetophenone	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
Anthracene	**9.1**		7.4	2.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[a]pyrene	<1.5		1.5	0.73	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[b]fluoranthene	<1.5		1.5	0.59	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[g,h,i]perylene	<7.4		7.4	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[k]fluoranthene	<1.5		1.5	0.47	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-ethylhexyl) phthalate	<74		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/05/16 15:21	10/10/16 18:14	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
Carbazole	**150**		37	2.6	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chloroaniline	<74		74	15	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Chlorophenol	<37		37	4.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
Chrysene	<3.7		3.7	0.50	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dibenz(a,h)anthracene	<2.2		2.2	0.37	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dibenzofuran	**42**		15	1.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/05/16 15:21	10/10/16 18:14	10
Diethyl phthalate	<15		15	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dimethylphenol	**74**		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/05/16 15:21	10/10/16 18:14	10
4,6-Dinitro-2-methylphenol	<150		150	43	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,6-Dinitrotoluene	<7.4		7.4	0.54	ug/L		10/05/16 15:21	10/10/16 18:14	10
Di-n-octyl phthalate	<74		74	7.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
Fluoranthene	**6.2**	**J**	7.4	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Fluorene	**62**		7.4	1.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorobenzene	<3.7		3.7	0.58	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachloroethane	<37		37	4.4	ug/L		10/05/16 15:21	10/10/16 18:14	10
Indeno[1,2,3-cd]pyrene	<1.5		1.5	0.55	ug/L		10/05/16 15:21	10/10/16 18:14	10
Isophorone	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Methylnaphthalene	**300**	**B**	15	0.48	ug/L		10/05/16 15:21	10/10/16 18:14	10

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**21**		15	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
3 & 4 Methylphenol	**12**	**J**	15	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Nitroaniline	<37		37	9.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
3-Nitroaniline	<74		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Nitroaniline	<74		74	12	ug/L		10/05/16 15:21	10/10/16 18:14	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Nitrophenol	<74		74	18	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Nitrophenol	<150		150	55	ug/L		10/05/16 15:21	10/10/16 18:14	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
N-Nitrosodiphenylamine	<7.4		7.4	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Pentachlorophenol	<150		150	29	ug/L		10/05/16 15:21	10/10/16 18:14	10
Phenanthrene	**55**		7.4	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
Phenol	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
Pyrene	**4.5**	**J**	7.4	3.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzaldehyde	<290		290	110	ug/L		10/05/16 15:21	10/10/16 18:14	10
Caprolactam	<74		74	11	ug/L		10/05/16 15:21	10/10/16 18:14	10
Atrazine	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 18:14	10
1,1'-Biphenyl	**26**	**J**	37	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*111*		*30 - 123*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
2-Fluorophenol (Surr)	*85*		*30 - 110*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Nitrobenzene-d5 (Surr)	*104*		*33 - 139*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Phenol-d5 (Surr)	*69*		*20 - 100*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Terphenyl-d14 (Surr)	*116*		*42 - 150*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
2,4,6-Tribromophenol (Surr)	*127*		*30 - 150*	*10/05/16 15:21*	*10/10/16 18:14*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2200**	**B**	37	11	ug/L		10/05/16 15:21	10/15/16 17:43	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*10/05/16 15:21*	*10/15/16 17:43*	*50*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 17:05	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 17:05	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/05/16 07:55	10/05/16 17:05	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/05/16 17:05	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 17:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/05/16 17:05	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 17:05	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 17:05	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 17:05	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/05/16 17:05	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 17:05	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/05/16 17:05	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*57*		*30 - 143*	*10/05/16 07:55*	*10/05/16 17:05*	*1*
Tetrachloro-m-xylene	*106*		*30 - 120*	*10/05/16 07:55*	*10/05/16 17:05*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/05/16 07:55	10/05/16 20:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:41*	*1*
DCB Decachlorobiphenyl	*71*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:41*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:19	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1
Barium	**1.0**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:19	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:19	1
Calcium	**76**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:19	1
Iron	**4.6**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:17	1
Magnesium	**84**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:19	1
Manganese	**0.14**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	0.0051	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:19	1
Potassium	62		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:19	1
Sodium	270		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:24	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Barium	0.96		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:24	1
Cadmium	0.0013	J	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:24	1
Calcium	73		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:24	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:24	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:24	1
Iron	3.6		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:28	1
Magnesium	82		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:24	1
Manganese	0.13		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Nickel	0.0049	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:24	1
Potassium	60		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:24	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:24	1
Sodium	260		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:24	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:24	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.31	J	1.0	0.18	mg/L			10/05/16 06:40	1
Sulfate	3.6	J B	5.0	1.5	mg/L			10/07/16 08:32	1
Total Organic Carbon - Duplicates	24	B	1.0	0.27	mg/L			10/07/16 02:34	1
Nitrogen, Nitrate	0.077	J	0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	8.5		5.0	2.5	mg/L			10/05/16 10:42	1
Ammonia	38		2.0	1.0	mg/L		10/12/16 11:30	10/13/16 09:40	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10

Matrix: Water

Date Received: 10/04/16 16:50

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:42	1
Nitrogen, Nitrate Nitrite	**0.077**	**J**	0.10	0.035	mg/L			10/13/16 23:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Lab Sample ID: 500-118070-2

Date Collected: 10/04/16 09:35
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/07/16 18:47	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 18:47	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 18:47	1
Carbon disulfide	**33**		2.0	0.45	ug/L			10/07/16 18:47	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 18:47	1
Chlorobenzene	**0.82**	**J**	1.0	0.39	ug/L			10/07/16 18:47	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 18:47	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 18:47	1
cis-1,2-Dichloroethene	**7.3**		1.0	0.41	ug/L			10/07/16 18:47	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 18:47	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			10/07/16 18:47	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 18:47	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 18:47	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/07/16 18:47	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 18:47	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/07/16 18:47	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 18:47	1
1,1-Dichloroethane	**24**		1.0	0.41	ug/L			10/07/16 18:47	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 18:47	1
Ethylbenzene	**7.2**		0.50	0.18	ug/L			10/07/16 18:47	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 18:47	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 18:47	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/07/16 18:47	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 18:47	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 18:47	1
methyl isobutyl ketone	**6.1**		5.0	2.2	ug/L			10/07/16 18:47	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 18:47	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Toluene	**21**		0.50	0.15	ug/L			10/07/16 18:47	1
trans-1,2-Dichloroethene	**1.0**		1.0	0.35	ug/L			10/07/16 18:47	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 18:47	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 18:47	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 18:47	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 18:47	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 18:47	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 18:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 18:47	1
Vinyl chloride	**8.5**		0.50	0.20	ug/L			10/07/16 18:47	1
Xylenes, Total	**5.9**		1.0	0.22	ug/L			10/07/16 18:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

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Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		71 - 120		10/07/16 18:47	1
Dibromofluoromethane	96		70 - 120		10/07/16 18:47	1
1,2-Dichloroethane-d4 (Surr)	87		71 - 127		10/07/16 18:47	1
Toluene-d8 (Surr)	100		75 - 120		10/07/16 18:47	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**530**		5.0	1.5	ug/L			10/07/16 19:14	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		71 - 120		10/07/16 19:14	10
Dibromofluoromethane	95		70 - 120		10/07/16 19:14	10
1,2-Dichloroethane-d4 (Surr)	89		71 - 127		10/07/16 19:14	10
Toluene-d8 (Surr)	102		75 - 120		10/07/16 19:14	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Acenaphthylene	<3.6		3.6	0.98	ug/L		10/05/16 15:21	10/15/16 18:09	5
Acetophenone	<18		18	2.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Anthracene	<3.6		3.6	1.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[g,h,i]perylene	<3.6		3.6	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-ethylhexyl) phthalate	<36		36	6.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/15/16 18:09	5
Carbazole	<18		18	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chloroaniline	<36		36	7.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Chlorophenol	<18		18	2.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
Chrysene	<1.8		1.8	0.25	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/05/16 15:21	10/15/16 18:09	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		10/05/16 15:21	10/15/16 18:09	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dimethylphenol	**17**	**J**	36	6.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dinitrophenol	<73		73	31	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,6-Dinitrotoluene	<3.6		3.6	0.27	ug/L		10/05/16 15:21	10/15/16 18:09	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		10/05/16 15:21	10/15/16 18:09	5

Client Sample ID: MW-04-GW-10042016

Lab Sample ID: 500-118070-2

Date Collected: 10/04/16 09:35

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
Fluorene	<3.6		3.6	0.89	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachloroethane	<18		18	2.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/05/16 15:21	10/15/16 18:09	5
Isophorone	<7.3		7.3	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Methylnaphthalene	<7.3		7.3	0.24	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Methylphenol	**5.5**	**J**	7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
3 & 4 Methylphenol	**2.1**	**J**	7.3	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Naphthalene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Nitroaniline	<18		18	4.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
3-Nitroaniline	<36		36	6.5	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Nitroaniline	<36		36	6.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Nitrophenol	<36		36	9.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Nitrophenol	<73		73	27	ug/L		10/05/16 15:21	10/15/16 18:09	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/05/16 15:21	10/15/16 18:09	5
N-Nitrosodiphenylamine	<3.6		3.6	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Pentachlorophenol	<73		73	14	ug/L		10/05/16 15:21	10/15/16 18:09	5
Phenanthrene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Phenol	<18		18	2.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Pyrene	<3.6		3.6	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzaldehyde	<150	^	150	55	ug/L		10/05/16 15:21	10/15/16 18:09	5
Caprolactam	<36		36	5.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Atrazine	<18		18	2.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*30 - 123*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
2,4,6-Tribromophenol (Surr)	*120*		*30 - 150*	*10/05/16 15:21*	*10/15/16 18:09*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/06/16 11:34	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/06/16 11:34	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/06/16 11:34	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/06/16 11:34	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/06/16 11:34	1

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Date Collected: 10/04/16 09:35

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/06/16 11:34	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/06/16 11:34	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/06/16 11:34	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:34	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/06/16 11:34	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 11:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*105*		*30 - 143*	*10/05/16 07:55*	*10/06/16 11:34*	*1*
Tetrachloro-m-xylene	*483*	*X*	*30 - 120*	*10/05/16 07:55*	*10/06/16 11:34*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/05/16 07:55	10/06/16 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*30 - 127*	*10/05/16 07:55*	*10/06/16 14:26*	*1*
DCB Decachlorobiphenyl	*86*		*30 - 150*	*10/05/16 07:55*	*10/06/16 14:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:29	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:29	1
Arsenic	**0.0084**	**J**	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Barium	**0.058**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:29	1
Calcium	**100**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:29	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:29	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:29	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:35	1
Magnesium	**27**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:29	1
Manganese	**0.32**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:29	1
Potassium	**15**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Lab Sample ID: 500-118070-2

Date Collected: 10/04/16 09:35
Matrix: Water
Date Received: 10/04/16 16:50

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:29	1
Sodium	**340**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:29	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:29	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:34	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:34	1
Arsenic	**0.010**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Barium	**0.061**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:34	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:34	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:34	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:34	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:34	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:39	1
Magnesium	**29**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:34	1
Manganese	**0.33**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:34	1
Potassium	**16**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:34	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:34	1
Sodium	**360**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:34	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:34	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.8**		1.0	0.18	mg/L			10/05/16 06:44	1
Sulfate	**210**	**B**	50	15	mg/L			10/07/16 08:35	10
Total Organic Carbon - Duplicates	**26**		2.0	0.53	mg/L			10/11/16 02:02	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/05/16 10:43	1
Ammonia	**9.8**		0.40	0.20	mg/L		10/12/16 11:30	10/13/16 09:43	2
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 23:56	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.0**		5.0	1.7	ug/L			10/07/16 19:40	1
Benzene	**0.27**	**J**	0.50	0.15	ug/L			10/07/16 19:40	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 19:40	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 19:40	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/07/16 19:40	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 19:40	1
Chlorobenzene	**4.3**		1.0	0.39	ug/L			10/07/16 19:40	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 19:40	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 19:40	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/07/16 19:40	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 19:40	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			10/07/16 19:40	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 19:40	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 19:40	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/07/16 19:40	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 19:40	1
1,4-Dichlorobenzene	**1.9**		1.0	0.36	ug/L			10/07/16 19:40	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 19:40	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/07/16 19:40	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 19:40	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/07/16 19:40	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 19:40	1
Isopropylbenzene	**35**		1.0	0.39	ug/L			10/07/16 19:40	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 19:40	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/07/16 19:40	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 19:40	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 19:40	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/07/16 19:40	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 19:40	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Toluene	**1.0**		0.50	0.15	ug/L			10/07/16 19:40	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/07/16 19:40	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 19:40	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 19:40	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 19:40	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 19:40	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 19:40	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 19:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 19:40	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/07/16 19:40	1
Xylenes, Total	**0.75**	**J**	1.0	0.22	ug/L			10/07/16 19:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/07/16 19:40*	*1*
Dibromofluoromethane	*93*		*70 - 120*		*10/07/16 19:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*		*10/07/16 19:40*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/07/16 19:40*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/05/16 15:21	10/15/16 18:35	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/05/16 15:21	10/15/16 18:35	1
Anthracene	<0.74		0.74	0.25	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/05/16 15:21	10/15/16 18:35	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/05/16 15:21	10/15/16 18:35	1
Carbazole	<3.7		3.7	0.26	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Chloronaphthalene	**0.18**	**J**	1.5	0.17	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/05/16 15:21	10/15/16 18:35	1
Chrysene	<0.37		0.37	0.050	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/05/16 15:21	10/15/16 18:35	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/05/16 15:21	10/15/16 18:35	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/05/16 15:21	10/15/16 18:35	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/05/16 15:21	10/15/16 18:35	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
Fluorene	<0.74		0.74	0.18	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/05/16 15:21	10/15/16 18:35	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/05/16 15:21	10/15/16 18:35	1
Isophorone	<1.5		1.5	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Methylnaphthalene	**0.36**	**J B**	1.5	0.048	ug/L		10/05/16 15:21	10/15/16 18:35	1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/05/16 15:21	10/15/16 18:35	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/05/16 15:21	10/15/16 18:35	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Nitrophenol	<15		15	5.5	ug/L		10/05/16 15:21	10/15/16 18:35	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/05/16 15:21	10/15/16 18:35	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
Pentachlorophenol	<15		15	2.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
Phenol	<3.7		3.7	0.50	ug/L		10/05/16 15:21	10/15/16 18:35	1
Pyrene	<0.74		0.74	0.31	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzaldehyde	<29	^	29	11	ug/L		10/05/16 15:21	10/15/16 18:35	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/05/16 15:21	10/15/16 18:35	1
Atrazine	<3.7		3.7	0.46	ug/L		10/05/16 15:21	10/15/16 18:35	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*64*		*30 - 123*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Nitrobenzene-d5 (Surr)	*58*		*33 - 139*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Phenol-d5 (Surr)	*36*		*20 - 100*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
2,4,6-Tribromophenol (Surr)	*109*		*30 - 150*	*10/05/16 15:21*	*10/15/16 18:35*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/06/16 11:54	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/06/16 11:54	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/06/16 11:54	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/05/16 07:55	10/06/16 11:54	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/06/16 11:54	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/06/16 11:54	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/06/16 11:54	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/05/16 07:55	10/06/16 11:54	1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:54	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/06/16 11:54	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 11:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*54*		*30 - 143*	*10/05/16 07:55*	*10/06/16 11:54*	*1*
Tetrachloro-m-xylene	*101*		*30 - 120*	*10/05/16 07:55*	*10/06/16 11:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 21:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*10/05/16 07:55*	*10/05/16 21:12*	*1*
DCB Decachlorobiphenyl	*63*		*30 - 150*	*10/05/16 07:55*	*10/05/16 21:12*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.28**		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:38	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:38	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Barium	**0.89**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:38	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:38	1
Cadmium	**0.0013**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:38	1
Calcium	**70**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:38	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:38	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:38	1
Copper	**0.0054**	**J**	0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:38	1
Iron	**18**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:38	1
Lead	**0.013**		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:45	1
Magnesium	**80**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:38	1
Manganese	**0.057**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Nickel	**0.0044**	**J**	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:38	1
Potassium	**43**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:38	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:38	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:38	1
Sodium	**150**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:38	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:38	1
Zinc	**0.044**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:38	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:50	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Barium	**0.97**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:50	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:50	1
Calcium	**76**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:50	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:50	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:50	1
Iron	**18**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:50	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:48	1
Magnesium	**88**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:50	1
Manganese	**0.053**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:50	1
Potassium	**47**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:50	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:50	1
Sodium	**160**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:50	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:50	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 06:48	1
Sulfate	**3.4**	**J B**	5.0	1.5	mg/L			10/07/16 08:36	1
Total Organic Carbon - Duplicates	**20**	**B**	1.0	0.27	mg/L			10/07/16 03:07	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			10/05/16 10:45	1
Ammonia	**50**		5.0	2.5	mg/L		10/12/16 11:30	10/13/16 09:46	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		5.0	1.7	ug/L			10/07/16 20:07	1
Benzene	**11**		0.50	0.15	ug/L			10/07/16 20:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 20:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 20:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/07/16 20:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 20:07	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 20:07	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 20:07	1
cis-1,2-Dichloroethene	**7.2**		1.0	0.41	ug/L			10/07/16 20:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 20:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/07/16 20:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 20:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 20:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,2-Dichlorobenzene	**5.0**		1.0	0.33	ug/L			10/07/16 20:07	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 20:07	1
1,4-Dichlorobenzene	**16**		1.0	0.36	ug/L			10/07/16 20:07	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 20:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/07/16 20:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 20:07	1
Ethylbenzene	**130**		0.50	0.18	ug/L			10/07/16 20:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 20:07	1
Isopropylbenzene	**8.6**		1.0	0.39	ug/L			10/07/16 20:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 20:07	1
Methylcyclohexane	**0.94**	**J**	1.0	0.32	ug/L			10/07/16 20:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 20:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 20:07	1
methyl isobutyl ketone	**69**		5.0	2.2	ug/L			10/07/16 20:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 20:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/07/16 20:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 20:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 20:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 20:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 20:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 20:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 20:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 20:07	1
Vinyl chloride	**11**		0.50	0.20	ug/L			10/07/16 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/07/16 20:07*	*1*

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*95*		*70 - 120*		*10/07/16 20:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 20:07*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/07/16 20:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**310**		5.0	1.5	ug/L			10/07/16 20:34	10
Xylenes, Total	**560**		10	2.2	ug/L			10/07/16 20:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*		*10/07/16 20:34*	*10*
Dibromofluoromethane	*97*		*70 - 120*		*10/07/16 20:34*	*10*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 20:34*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/07/16 20:34*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.3		7.3	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Acenaphthylene	<7.3		7.3	2.0	ug/L		10/05/16 15:21	10/10/16 19:42	10
Acetophenone	**17**	**J**	37	4.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
Anthracene	<7.3		7.3	2.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[a]anthracene	<1.5		1.5	0.41	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[a]pyrene	**1.1**	**J**	1.5	0.72	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[b]fluoranthene	**1.5**		1.5	0.59	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[g,h,i]perylene	<7.3		7.3	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[k]fluoranthene	**0.62**	**J**	1.5	0.47	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-chloroethyl)ether	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-ethylhexyl) phthalate	**210**		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/05/16 15:21	10/10/16 19:42	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/05/16 15:21	10/10/16 19:42	10
Carbazole	**4.2**	**J**	37	2.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chloroaniline	<73		73	15	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chloro-3-methylphenol	<73		73	17	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Chlorophenol	<37		37	4.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chlorophenyl phenyl ether	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
Chrysene	**1.8**	**J**	3.7	0.50	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dibenz(a,h)anthracene	<2.2		2.2	0.37	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dibenzofuran	<15		15	1.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dichlorophenol	<73		73	19	ug/L		10/05/16 15:21	10/10/16 19:42	10
Diethyl phthalate	<15		15	2.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dimethylphenol	**320**		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Di-n-butyl phthalate	<37		37	5.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
4,6-Dinitro-2-methylphenol	<150		150	43	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dinitrotoluene	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,6-Dinitrotoluene	<7.3		7.3	0.54	ug/L		10/05/16 15:21	10/10/16 19:42	10

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<73		73	7.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
Fluoranthene	**5.4**	**J**	7.3	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Fluorene	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorobenzene	<3.7		3.7	0.58	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachloroethane	<37		37	4.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
Indeno[1,2,3-cd]pyrene	<1.5		1.5	0.55	ug/L		10/05/16 15:21	10/10/16 19:42	10
Isophorone	<15		15	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Methylnaphthalene	**5.6**	**J B**	15	0.48	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Methylphenol	**88**		15	2.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
3 & 4 Methylphenol	**290**		15	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Naphthalene	**35**	**B**	7.3	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Nitroaniline	<37		37	9.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
3-Nitroaniline	<73		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Nitroaniline	<73		73	12	ug/L		10/05/16 15:21	10/10/16 19:42	10
Nitrobenzene	<7.3		7.3	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Nitrophenol	<73		73	18	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Nitrophenol	<150		150	54	ug/L		10/05/16 15:21	10/10/16 19:42	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
N-Nitrosodiphenylamine	**5.4**	**J**	7.3	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Pentachlorophenol	<150		150	29	ug/L		10/05/16 15:21	10/10/16 19:42	10
Phenanthrene	**8.7**		7.3	2.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
Phenol	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
Pyrene	**5.3**	**J**	7.3	3.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4,5-Trichlorophenol	<73		73	19	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4,6-Trichlorophenol	<37		37	5.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzaldehyde	<290		290	110	ug/L		10/05/16 15:21	10/10/16 19:42	10
Caprolactam	<73		73	11	ug/L		10/05/16 15:21	10/10/16 19:42	10
Atrazine	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*56*		*30 - 123*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
2-Fluorophenol (Surr)	*79*		*30 - 110*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Nitrobenzene-d5 (Surr)	*80*		*33 - 139*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Phenol-d5 (Surr)	*66*		*20 - 100*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Terphenyl-d14 (Surr)	*80*		*42 - 150*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
2,4,6-Tribromophenol (Surr)	*74*		*30 - 150*	*10/05/16 15:21*	*10/10/16 19:42*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.19		0.19	0.025	ug/L		10/05/16 07:55	10/06/16 12:13	5
alpha-BHC	<0.19		0.19	0.012	ug/L		10/05/16 07:55	10/06/16 12:13	5
alpha-Chlordane	<0.19		0.19	0.020	ug/L		10/05/16 07:55	10/06/16 12:13	5
beta-BHC	<0.19		0.19	0.047	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDD	<0.19		0.19	0.062	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDE	<0.19		0.19	0.018	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDT	<0.19		0.19	0.015	ug/L		10/05/16 07:55	10/06/16 12:13	5

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.19		0.19	0.048	ug/L		10/05/16 07:55	10/06/16 12:13	5
Dieldrin	<0.19		0.19	0.060	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan I	<0.19		0.19	0.019	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan II	<0.19		0.19	0.013	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan sulfate	<0.19		0.19	0.054	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin	<0.19		0.19	0.066	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin aldehyde	<0.19		0.19	0.038	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin ketone	<0.19		0.19	0.079	ug/L		10/05/16 07:55	10/06/16 12:13	5
gamma-BHC (Lindane)	<0.19		0.19	0.026	ug/L		10/05/16 07:55	10/06/16 12:13	5
gamma-Chlordane	<0.19		0.19	0.034	ug/L		10/05/16 07:55	10/06/16 12:13	5
Heptachlor	<0.19		0.19	0.063	ug/L		10/05/16 07:55	10/06/16 12:13	5
Heptachlor epoxide	<0.19		0.19	0.064	ug/L		10/05/16 07:55	10/06/16 12:13	5
Methoxychlor	<0.37		0.37	0.11	ug/L		10/05/16 07:55	10/06/16 12:13	5
Toxaphene	<1.9		1.9	0.93	ug/L		10/05/16 07:55	10/06/16 12:13	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*24*	*X*	*30 - 143*	*10/05/16 07:55*	*10/06/16 12:13*	*5*
Tetrachloro-m-xylene	*129*	*X*	*30 - 120*	*10/05/16 07:55*	*10/06/16 12:13*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1016	<0.37		0.37	0.061	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1242	**2.7**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1242	**3.0**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1248	**2.5**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1248	**3.5**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1254	**1.6**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1254	**2.4**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:20	10/10/16 13:11	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:20	10/10/16 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
Tetrachloro-m-xylene	*19*	*X*	*30 - 127*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
DCB Decachlorobiphenyl	*37*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.7**		1.0	0.31	mg/L		10/11/16 08:58	10/13/16 02:54	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 08:58	10/13/16 02:54	1
Arsenic	**0.050**		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Barium	**0.63**		0.050	0.011	mg/L		10/11/16 08:58	10/13/16 02:54	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 08:58	10/13/16 02:54	1
Cadmium	**0.0078**	**J**	0.010	0.0047	mg/L		10/11/16 08:58	10/13/16 02:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	11		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 02:54	1
Chromium	0.50		0.050	0.012	mg/L		10/11/16 08:58	10/13/16 02:54	1
Cobalt	0.040		0.025	0.0048	mg/L		10/11/16 08:58	10/13/16 02:54	1
Copper	0.082		0.050	0.011	mg/L		10/11/16 08:58	10/13/16 02:54	1
Iron	5.2		1.0	0.50	mg/L		10/11/16 08:58	10/13/16 02:54	1
Lead	0.71		0.025	0.013	mg/L		10/11/16 08:58	10/13/16 18:51	1
Magnesium	25		0.50	0.20	mg/L		10/11/16 08:58	10/13/16 02:54	1
Manganese	0.017	J	0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Nickel	0.15		0.050	0.018	mg/L		10/11/16 08:58	10/13/16 02:54	1
Potassium	680		2.5	0.81	mg/L		10/11/16 08:58	10/13/16 02:54	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 08:58	10/13/16 02:54	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 08:58	10/13/16 02:54	1
Sodium	3400	V	5.0	2.2	mg/L		10/11/16 08:58	10/13/16 02:54	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Vanadium	0.081		0.025	0.0093	mg/L		10/11/16 08:58	10/13/16 02:54	1
Zinc	1.1		0.10	0.045	mg/L		10/11/16 08:58	10/13/16 02:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.4		1.0	0.31	mg/L		10/11/16 08:58	10/13/16 03:02	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 08:58	10/13/16 03:02	1
Arsenic	0.038	J	0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Barium	0.60	V	0.050	0.011	mg/L		10/11/16 08:58	10/13/16 03:02	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 08:58	10/13/16 03:02	1
Cadmium	0.0061	J	0.010	0.0047	mg/L		10/11/16 08:58	10/13/16 03:02	1
Calcium	11		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 03:02	1
Chromium	0.48		0.050	0.012	mg/L		10/11/16 08:58	10/13/16 03:02	1
Cobalt	0.040		0.025	0.0048	mg/L		10/11/16 08:58	10/13/16 03:02	1
Copper	0.048	J	0.050	0.011	mg/L		10/11/16 08:58	10/13/16 03:02	1
Iron	5.1		1.0	0.50	mg/L		10/11/16 08:58	10/13/16 03:02	1
Lead	0.32		0.025	0.013	mg/L		10/11/16 08:58	10/13/16 18:59	1
Magnesium	25	V	0.50	0.20	mg/L		10/11/16 08:58	10/13/16 03:02	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Nickel	0.16		0.050	0.018	mg/L		10/11/16 08:58	10/13/16 03:02	1
Potassium	700	V	2.5	0.81	mg/L		10/11/16 08:58	10/13/16 03:02	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 08:58	10/13/16 03:02	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 08:58	10/13/16 03:02	1
Sodium	3500	V	5.0	2.2	mg/L		10/11/16 08:58	10/13/16 03:02	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Vanadium	0.076		0.025	0.0093	mg/L		10/11/16 08:58	10/13/16 03:02	1
Zinc	0.65		0.10	0.045	mg/L		10/11/16 08:58	10/13/16 03:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0011		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00051		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Matrix: Water
Date Received: 10/04/16 16:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**9.1**		1.0	0.18	mg/L			10/05/16 06:52	1
Sulfate	<50		50	15	mg/L			10/07/16 08:39	10
Total Organic Carbon - Duplicates	**540**	**B**	20	5.3	mg/L			10/07/16 20:02	20
Nitrogen, Nitrate	**0.10**		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			10/05/16 10:46	1
Ammonia	**710**		40	20	mg/L		10/12/16 11:30	10/13/16 09:49	100
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:44	1
Nitrogen, Nitrate Nitrite	**0.10**		0.10	0.035	mg/L			10/14/16 00:00	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
V	Serial Dilution exceeds the control limits

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

GC/MS VOA

Analysis Batch: 355084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	8260B	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	8260B	
500-118070-2 - DL	MW-04-GW-10042016	Total/NA	Water	8260B	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	8260B	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	8260B	
500-118070-4 - DL	MW-07-GW-10042016	Total/NA	Water	8260B	
MB 500-355084/8	Method Blank	Total/NA	Water	8260B	
LCS 500-355084/6	Lab Control Sample	Total/NA	Water	8260B	
500-118070-3 MS	MW-05-GW-10042016	Total/NA	Water	8260B	
500-118070-3 MSD	MW-05-GW-10042016	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 354760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	3510C	
500-118070-1 - DL	MW-03-GW-10042016	Total/NA	Water	3510C	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	3510C	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	3510C	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	3510C	
MB 500-354760/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354760/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354760/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-354760/1-A	Method Blank	Total/NA	Water	8270D	354760
LCS 500-354760/2-A	Lab Control Sample	Total/NA	Water	8270D	354760
LCSD 500-354760/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	354760

Analysis Batch: 355337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	8270D	354760
500-118070-4	MW-07-GW-10042016	Total/NA	Water	8270D	354760

Analysis Batch: 356320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1 - DL	MW-03-GW-10042016	Total/NA	Water	8270D	354760
500-118070-2	MW-04-GW-10042016	Total/NA	Water	8270D	354760
500-118070-3	MW-05-GW-10042016	Total/NA	Water	8270D	354760

GC Semi VOA

Prep Batch: 354671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	3510C	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	3510C	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	3510C	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	3510C	
MB 500-354671/1-A	Method Blank	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 354671 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-354671/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-354671/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354671/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 354743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	8081B	354671
MB 500-354671/1-A	Method Blank	Total/NA	Water	8081B	354671
LCS 500-354671/2-A	Lab Control Sample	Total/NA	Water	8081B	354671
LCSD 500-354671/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	354671

Analysis Batch: 354768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	8082A	354671
500-118070-3	MW-05-GW-10042016	Total/NA	Water	8082A	354671
MB 500-354671/1-A	Method Blank	Total/NA	Water	8082A	354671
LCS 500-354671/4-A	Lab Control Sample	Total/NA	Water	8082A	354671

Analysis Batch: 354874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-2	MW-04-GW-10042016	Total/NA	Water	8081B	354671
500-118070-3	MW-05-GW-10042016	Total/NA	Water	8081B	354671
500-118070-4	MW-07-GW-10042016	Total/NA	Water	8081B	354671

Analysis Batch: 354902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-2	MW-04-GW-10042016	Total/NA	Water	8082A	354671

Prep Batch: 355087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-4	MW-07-GW-10042016	Total/NA	Water	3510C	
MB 500-355087/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-4	MW-07-GW-10042016	Total/NA	Water	8082A	355087
MB 500-355087/1-A	Method Blank	Total/NA	Water	8082A	355087
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	8082A	355087
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	355087

Metals

Prep Batch: 355131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Dissolved	Water	7470A	
500-118070-1	MW-03-GW-10042016	Total/NA	Water	7470A	
500-118070-2	MW-04-GW-10042016	Dissolved	Water	7470A	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 355131 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-3	MW-05-GW-10042016	Dissolved	Water	7470A	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	7470A	
500-118070-4	MW-07-GW-10042016	Dissolved	Water	7470A	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	7470A	
MB 500-355131/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-355131/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 355216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Dissolved	Water	7470A	355131
500-118070-1	MW-03-GW-10042016	Total/NA	Water	7470A	355131
500-118070-2	MW-04-GW-10042016	Dissolved	Water	7470A	355131
500-118070-2	MW-04-GW-10042016	Total/NA	Water	7470A	355131
500-118070-3	MW-05-GW-10042016	Dissolved	Water	7470A	355131
500-118070-3	MW-05-GW-10042016	Total/NA	Water	7470A	355131
500-118070-4	MW-07-GW-10042016	Dissolved	Water	7470A	355131
500-118070-4	MW-07-GW-10042016	Total/NA	Water	7470A	355131
MB 500-355131/12-A	Method Blank	Total/NA	Water	7470A	355131
LCS 500-355131/13-A	Lab Control Sample	Total/NA	Water	7470A	355131

Prep Batch: 355531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Dissolved	Water	3010A	
500-118070-1	MW-03-GW-10042016	Total/NA	Water	3010A	
500-118070-2	MW-04-GW-10042016	Dissolved	Water	3010A	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	3010A	
500-118070-3	MW-05-GW-10042016	Dissolved	Water	3010A	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	3010A	
500-118070-4	MW-07-GW-10042016	Dissolved	Water	3010A	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	3010A	
MB 500-355531/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355531/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 500-355531/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Analysis Batch: 355956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Dissolved	Water	6010C	355531
500-118070-1	MW-03-GW-10042016	Total/NA	Water	6010C	355531
500-118070-2	MW-04-GW-10042016	Dissolved	Water	6010C	355531
500-118070-2	MW-04-GW-10042016	Total/NA	Water	6010C	355531
500-118070-3	MW-05-GW-10042016	Dissolved	Water	6010C	355531
500-118070-3	MW-05-GW-10042016	Total/NA	Water	6010C	355531
500-118070-4	MW-07-GW-10042016	Dissolved	Water	6010C	355531
500-118070-4	MW-07-GW-10042016	Total/NA	Water	6010C	355531
MB 500-355531/1-A	Method Blank	Total/NA	Water	6010C	355531
LCS 500-355531/2-A	Lab Control Sample	Total/NA	Water	6010C	355531
LCSD 500-355531/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	355531

Analysis Batch: 356193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Dissolved	Water	6010C	355531

Metals (Continued)

Analysis Batch: 356193 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	6010C	355531
500-118070-2	MW-04-GW-10042016	Dissolved	Water	6010C	355531
500-118070-2	MW-04-GW-10042016	Total/NA	Water	6010C	355531
500-118070-3	MW-05-GW-10042016	Dissolved	Water	6010C	355531
500-118070-3	MW-05-GW-10042016	Total/NA	Water	6010C	355531
500-118070-4	MW-07-GW-10042016	Dissolved	Water	6010C	355531
500-118070-4	MW-07-GW-10042016	Total/NA	Water	6010C	355531
MB 500-355531/1-A	Method Blank	Total/NA	Water	6010C	355531
LCS 500-355531/2-A	Lab Control Sample	Total/NA	Water	6010C	355531
LCSD 500-355531/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	355531

General Chemistry

Analysis Batch: 354645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	9034	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	9034	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	9034	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	9034	
MB 500-354645/1	Method Blank	Total/NA	Water	9034	
LCS 500-354645/2	Lab Control Sample	Total/NA	Water	9034	

Analysis Batch: 354719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	SM 2540D	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	SM 2540D	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	SM 2540D	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	SM 2540D	
MB 500-354719/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-354719/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 355060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	9038	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	9038	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	9038	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	9038	
MB 500-355060/3	Method Blank	Total/NA	Water	9038	
LCS 500-355060/4	Lab Control Sample	Total/NA	Water	9038	
500-118070-3 MS	MW-05-GW-10042016	Total/NA	Water	9038	
500-118070-3 MSD	MW-05-GW-10042016	Total/NA	Water	9038	

Analysis Batch: 355160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	9060A	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	9060A	
MB 500-355160/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355160/5	Lab Control Sample	Total/NA	Water	9060A	

General Chemistry (Continued)

Analysis Batch: 355179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
MB 500-355179/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-355179/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 355461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	Nitrate by calc	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	Nitrate by calc	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	Nitrate by calc	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	Nitrate by calc	

Analysis Batch: 355462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-4	MW-07-GW-10042016	Total/NA	Water	9060A	
MB 500-355462/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355462/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 355627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-2	MW-04-GW-10042016	Total/NA	Water	9060A	
MB 500-355627/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355627/5	Lab Control Sample	Total/NA	Water	9060A	

Prep Batch: 355797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	SM 4500 NH3 B	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	SM 4500 NH3 B	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	SM 4500 NH3 B	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	SM 4500 NH3 B	
MB 500-355797/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-355797/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 356005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	SM 4500 NH3 G	355797
500-118070-2	MW-04-GW-10042016	Total/NA	Water	SM 4500 NH3 G	355797
500-118070-3	MW-05-GW-10042016	Total/NA	Water	SM 4500 NH3 G	355797
500-118070-4	MW-07-GW-10042016	Total/NA	Water	SM 4500 NH3 G	355797
MB 500-355797/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	355797
LCS 500-355797/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	355797

Analysis Batch: 356272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118070-1	MW-03-GW-10042016	Total/NA	Water	SM 4500 NO3 F	
500-118070-2	MW-04-GW-10042016	Total/NA	Water	SM 4500 NO3 F	
500-118070-3	MW-05-GW-10042016	Total/NA	Water	SM 4500 NO3 F	
500-118070-4	MW-07-GW-10042016	Total/NA	Water	SM 4500 NO3 F	
MB 500-356272/21	Method Blank	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 356272 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-356272/63	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-118070-1	MW-03-GW-10042016	94	96	90	93
500-118070-2	MW-04-GW-10042016	98	96	87	100
500-118070-2 - DL	MW-04-GW-10042016	95	95	89	102
500-118070-3	MW-05-GW-10042016	96	93	89	96
500-118070-3 MS	MW-05-GW-10042016	91	100	92	95
500-118070-3 MSD	MW-05-GW-10042016	94	97	90	96
500-118070-4	MW-07-GW-10042016	94	95	90	97
500-118070-4 - DL	MW-07-GW-10042016	92	97	90	95
LCS 500-355084/6	Lab Control Sample	95	96	89	97
MB 500-355084/8	Method Blank	94	93	89	98

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-118070-1	MW-03-GW-10042016	111	85	104	69	116	127
500-118070-1 - DL	MW-03-GW-10042016	0 D	0 D	0 D	0 D	0 D	0 D
500-118070-2	MW-04-GW-10042016	77	60	69	47	99	120
500-118070-3	MW-05-GW-10042016	64	50	58	36	86	109
500-118070-4	MW-07-GW-10042016	56	79	80	66	80	74
LCS 500-354760/2-A	Lab Control Sample	82	84	91	66	102	107
LCSD 500-354760/3-A	Lab Control Sample Dup	80	82	88	66	103	105
MB 500-354760/1-A	Method Blank	70	75	78	57	95	74

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118070-1	MW-03-GW-10042016	57	106
500-118070-2	MW-04-GW-10042016	105	483 X
500-118070-3	MW-05-GW-10042016	54	101
500-118070-4	MW-07-GW-10042016	24 X	129 X

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
LCS 500-354671/2-A	Lab Control Sample	105	66
LCSD 500-354671/3-A	Lab Control Sample Dup	102	59
MB 500-354671/1-A	Method Blank	73	65

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-118070-1	MW-03-GW-10042016		70		71
500-118070-2	MW-04-GW-10042016		73		86
500-118070-3	MW-05-GW-10042016		66		63
500-118070-4	MW-07-GW-10042016	15 X	19 X	37	55
LCS 500-354671/4-A	Lab Control Sample		71		98
LCS 500-355087/4-A	Lab Control Sample	88	80	95	91
LCSD 500-355087/5-A	Lab Control Sample Dup	72	69	96	94
MB 500-354671/1-A	Method Blank		67		99
MB 500-355087/1-A	Method Blank	91	82	119	110

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-355084/8
Matrix: Water
Analysis Batch: 355084

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/07/16 14:19	1
Benzene	<0.50		0.50	0.15	ug/L			10/07/16 14:19	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 14:19	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 14:19	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 14:19	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/07/16 14:19	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 14:19	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/07/16 14:19	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 14:19	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 14:19	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 14:19	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/07/16 14:19	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 14:19	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/07/16 14:19	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 14:19	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 14:19	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 14:19	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/07/16 14:19	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 14:19	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/07/16 14:19	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 14:19	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/07/16 14:19	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 14:19	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 14:19	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 14:19	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/07/16 14:19	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 14:19	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/07/16 14:19	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 14:19	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/07/16 14:19	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 14:19	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 14:19	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/07/16 14:19	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 14:19	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 14:19	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 14:19	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 14:19	1
Toluene	<0.50		0.50	0.15	ug/L			10/07/16 14:19	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/07/16 14:19	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 14:19	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 14:19	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 14:19	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 14:19	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 14:19	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 14:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 14:19	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/07/16 14:19	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/07/16 14:19	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		71 - 120		10/07/16 14:19	1
Dibromofluoromethane	93		70 - 120		10/07/16 14:19	1
1,2-Dichloroethane-d4 (Surr)	89		71 - 127		10/07/16 14:19	1
Toluene-d8 (Surr)	98		75 - 120		10/07/16 14:19	1

Lab Sample ID: LCS 500-355084/6
Matrix: Water
Analysis Batch: 355084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	53.9		ug/L		108	37 - 141
Benzene	50.0	44.7		ug/L		89	70 - 125
Bromodichloromethane	50.0	40.9		ug/L		82	70 - 125
Bromoform	50.0	44.1		ug/L		88	54 - 128
Bromomethane	50.0	41.9		ug/L		84	40 - 150
Carbon disulfide	50.0	42.9		ug/L		86	68 - 125
Carbon tetrachloride	50.0	46.8		ug/L		94	70 - 125
Chlorobenzene	50.0	46.2		ug/L		92	70 - 125
Chloroethane	50.0	45.4		ug/L		91	60 - 139
Chloroform	50.0	44.1		ug/L		88	70 - 125
Chloromethane	50.0	60.0		ug/L		120	60 - 140
cis-1,2-Dichloroethene	50.0	46.7		ug/L		93	70 - 125
cis-1,3-Dichloropropene	50.0	44.1		ug/L		88	70 - 125
Cyclohexane	50.0	50.9		ug/L		102	56 - 149
Dibromochloromethane	50.0	42.4		ug/L		85	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	41.8		ug/L		84	51 - 125
1,2-Dibromoethane	50.0	45.8		ug/L		92	70 - 125
1,2-Dichlorobenzene	50.0	48.4		ug/L		97	70 - 125
1,3-Dichlorobenzene	50.0	48.3		ug/L		97	70 - 125
1,4-Dichlorobenzene	50.0	48.3		ug/L		97	70 - 125
Dichlorodifluoromethane	50.0	59.1		ug/L		118	51 - 140
1,1-Dichloroethane	50.0	44.4		ug/L		89	70 - 125
1,2-Dichloroethane	50.0	41.9		ug/L		84	70 - 125
1,1-Dichloroethene	50.0	48.5		ug/L		97	70 - 125
1,2-Dichloropropane	50.0	45.1		ug/L		90	70 - 125
Ethylbenzene	50.0	45.4		ug/L		91	70 - 125
2-Hexanone	50.0	54.3		ug/L		109	49 - 139
Isopropylbenzene	50.0	46.5		ug/L		93	70 - 125
Methyl acetate	250	275		ug/L		110	60 - 148
Methylcyclohexane	50.0	48.8		ug/L		98	70 - 127
Methylene Chloride	50.0	46.1		ug/L		92	68 - 125
Methyl Ethyl Ketone	50.0	50.3		ug/L		101	52 - 142
methyl isobutyl ketone	50.0	54.1		ug/L		108	47 - 140
Methyl tert-butyl ether	50.0	42.4		ug/L		85	67 - 125
Styrene	50.0	43.8		ug/L		88	70 - 125
1,1,2,2-Tetrachloroethane	50.0	44.7		ug/L		89	68 - 125
Tetrachloroethene	50.0	53.9		ug/L		108	70 - 125
Toluene	50.0	45.2		ug/L		90	70 - 125
trans-1,2-Dichloroethene	50.0	46.6		ug/L		93	70 - 125
trans-1,3-Dichloropropene	50.0	39.6		ug/L		79	70 - 125
1,2,4-Trichlorobenzene	50.0	57.1		ug/L		114	64 - 126
1,1,1-Trichloroethane	50.0	44.6		ug/L		89	70 - 125
1,1,2-Trichloroethane	50.0	45.6		ug/L		91	70 - 125
Trichloroethene	50.0	52.5		ug/L		105	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-355084/6
Matrix: Water
Analysis Batch: 355084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	52.0		ug/L		104	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.4		ug/L		99	57 - 141
Vinyl chloride	50.0	52.9		ug/L		106	70 - 126
Xylenes, Total	100	87.6		ug/L		88	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*
Toluene-d8 (Surr)	*97*		*75 - 120*

Lab Sample ID: 500-118070-3 MS
Matrix: Water
Analysis Batch: 355084

Client Sample ID: MW-05-GW-10042016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	8.0		50.0	59.0		ug/L		102	37 - 141
Benzene	0.27	J	50.0	49.9		ug/L		99	70 - 125
Bromodichloromethane	<1.0		50.0	45.6		ug/L		91	70 - 125
Bromoform	<1.0		50.0	48.9		ug/L		98	54 - 128
Bromomethane	<2.0		50.0	39.3		ug/L		79	40 - 150
Carbon disulfide	<2.0		50.0	48.1		ug/L		96	68 - 125
Carbon tetrachloride	<1.0		50.0	46.2		ug/L		92	70 - 125
Chlorobenzene	4.3		50.0	54.3		ug/L		100	70 - 125
Chloroethane	<1.0		50.0	48.2		ug/L		96	60 - 139
Chloroform	<1.0		50.0	48.7		ug/L		97	70 - 125
Chloromethane	<1.0		50.0	45.4		ug/L		91	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	51.0		ug/L		102	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	44.7		ug/L		89	70 - 125
Cyclohexane	1.7		50.0	54.5		ug/L		106	56 - 149
Dibromochloromethane	<1.0		50.0	48.3		ug/L		97	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	46.4		ug/L		93	51 - 125
1,2-Dibromoethane	<1.0		50.0	53.5		ug/L		107	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	52.6		ug/L		105	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	51.8		ug/L		104	70 - 125
1,4-Dichlorobenzene	1.9		50.0	52.5		ug/L		101	70 - 125
Dichlorodifluoromethane	<2.0		50.0	57.3		ug/L		115	51 - 140
1,1-Dichloroethane	<1.0		50.0	47.7		ug/L		95	70 - 125
1,2-Dichloroethane	<1.0		50.0	49.3		ug/L		99	70 - 125
1,1-Dichloroethene	<1.0		50.0	49.4		ug/L		99	70 - 125
1,2-Dichloropropane	<1.0		50.0	48.1		ug/L		96	70 - 125
Ethylbenzene	<0.50		50.0	47.9		ug/L		96	70 - 125
2-Hexanone	<5.0		50.0	51.0		ug/L		102	49 - 139
Isopropylbenzene	35		50.0	78.5		ug/L		87	70 - 125
Methyl acetate	<5.0		250	302		ug/L		121	60 - 148
Methylcyclohexane	<1.0		50.0	50.0		ug/L		100	70 - 127
Methylene Chloride	<5.0		50.0	51.0		ug/L		102	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-118070-3 MS
Matrix: Water
Analysis Batch: 355084

Client Sample ID: MW-05-GW-10042016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	52.9		ug/L		106	52 - 142
methyl isobutyl ketone	<5.0		50.0	53.9		ug/L		108	47 - 140
Methyl tert-butyl ether	<1.0		50.0	48.6		ug/L		97	67 - 125
Styrene	<1.0		50.0	47.3		ug/L		95	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	48.3		ug/L		97	68 - 125
Tetrachloroethene	<1.0		50.0	54.5		ug/L		109	70 - 125
Toluene	1.0		50.0	47.0		ug/L		92	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	49.1		ug/L		98	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	44.3		ug/L		89	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	60.1		ug/L		120	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	46.2		ug/L		92	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	51.2		ug/L		102	70 - 125
Trichloroethene	<0.50		50.0	55.3		ug/L		111	70 - 125
Trichlorofluoromethane	<1.0		50.0	49.5		ug/L		99	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	50.8		ug/L		102	57 - 141
Vinyl chloride	<0.50		50.0	50.0		ug/L		100	70 - 126
Xylenes, Total	0.75	J	100	93.3		ug/L		93	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*71 - 120*
Dibromofluoromethane	*100*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*
Toluene-d8 (Surr)	*95*		*75 - 120*

Lab Sample ID: 500-118070-3 MSD
Matrix: Water
Analysis Batch: 355084

Client Sample ID: MW-05-GW-10042016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	8.0		50.0	60.0		ug/L		104	37 - 141	2	20
Benzene	0.27	J	50.0	44.6		ug/L		89	70 - 125	11	20
Bromodichloromethane	<1.0		50.0	42.8		ug/L		86	70 - 125	6	20
Bromoform	<1.0		50.0	47.8		ug/L		96	54 - 128	2	20
Bromomethane	<2.0		50.0	36.8		ug/L		74	40 - 150	6	20
Carbon disulfide	<2.0		50.0	44.2		ug/L		88	68 - 125	8	20
Carbon tetrachloride	<1.0		50.0	42.3		ug/L		85	70 - 125	9	20
Chlorobenzene	4.3		50.0	51.7		ug/L		95	70 - 125	5	20
Chloroethane	<1.0		50.0	43.9		ug/L		88	60 - 139	9	20
Chloroform	<1.0		50.0	44.6		ug/L		89	70 - 125	9	20
Chloromethane	<1.0		50.0	38.7		ug/L		77	60 - 140	16	20
cis-1,2-Dichloroethene	<1.0		50.0	47.2		ug/L		94	70 - 125	8	20
cis-1,3-Dichloropropene	<1.0		50.0	43.2		ug/L		86	70 - 125	3	20
Cyclohexane	1.7		50.0	48.5		ug/L		94	56 - 149	12	20
Dibromochloromethane	<1.0		50.0	45.4		ug/L		91	66 - 125	6	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	45.2		ug/L		90	51 - 125	3	20
1,2-Dibromoethane	<1.0		50.0	50.8		ug/L		102	70 - 125	5	20
1,2-Dichlorobenzene	<1.0		50.0	50.6		ug/L		101	70 - 125	4	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-118070-3 MSD — **Client Sample ID: MW-05-GW-10042016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355084

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	48.7		ug/L		97	70 - 125	6	20
1,4-Dichlorobenzene	1.9		50.0	49.5		ug/L		95	70 - 125	6	20
Dichlorodifluoromethane	<2.0		50.0	52.9		ug/L		106	51 - 140	8	20
1,1-Dichloroethane	<1.0		50.0	43.0		ug/L		86	70 - 125	10	20
1,2-Dichloroethane	<1.0		50.0	44.9		ug/L		90	70 - 125	9	20
1,1-Dichloroethene	<1.0		50.0	45.0		ug/L		90	70 - 125	9	20
1,2-Dichloropropane	<1.0		50.0	46.5		ug/L		93	70 - 125	3	20
Ethylbenzene	<0.50		50.0	45.0		ug/L		90	70 - 125	6	20
2-Hexanone	<5.0		50.0	54.6		ug/L		109	49 - 139	7	20
Isopropylbenzene	35		50.0	76.3		ug/L		83	70 - 125	3	20
Methyl acetate	<5.0		250	290		ug/L		116	60 - 148	4	20
Methylcyclohexane	<1.0		50.0	45.7		ug/L		91	70 - 127	9	20
Methylene Chloride	<5.0		50.0	47.0		ug/L		94	68 - 125	8	20
Methyl Ethyl Ketone	<5.0		50.0	52.7		ug/L		105	52 - 142	0	20
methyl isobutyl ketone	<5.0		50.0	56.0		ug/L		112	47 - 140	4	20
Methyl tert-butyl ether	<1.0		50.0	45.9		ug/L		92	67 - 125	6	20
Styrene	<1.0		50.0	46.7		ug/L		93	70 - 125	1	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	48.0		ug/L		96	68 - 125	1	20
Tetrachloroethene	<1.0		50.0	51.0		ug/L		102	70 - 125	7	20
Toluene	1.0		50.0	46.5		ug/L		91	70 - 125	1	20
trans-1,2-Dichloroethene	<1.0		50.0	45.0		ug/L		90	70 - 125	9	20
trans-1,3-Dichloropropene	<1.0		50.0	43.7		ug/L		87	70 - 125	1	20
1,2,4-Trichlorobenzene	<1.0		50.0	57.6		ug/L		115	64 - 126	4	20
1,1,1-Trichloroethane	<1.0		50.0	42.5		ug/L		85	70 - 125	8	20
1,1,2-Trichloroethane	<1.0		50.0	48.5		ug/L		97	70 - 125	5	20
Trichloroethene	<0.50		50.0	49.9		ug/L		100	70 - 125	10	20
Trichlorofluoromethane	<1.0		50.0	42.0		ug/L		84	60 - 126	16	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	46.0		ug/L		92	57 - 141	10	20
Vinyl chloride	<0.50		50.0	43.5		ug/L		87	70 - 126	14	20
Xylenes, Total	0.75	J	100	89.5		ug/L		89	70 - 125	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*
Toluene-d8 (Surr)	*96*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-354760/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355037 — **Prep Batch: 354760**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		10/05/16 15:21	10/07/16 12:06	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		10/05/16 15:21	10/07/16 12:06	1
Acetophenone	<4.0		4.0	0.53	ug/L		10/05/16 15:21	10/07/16 12:06	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354760/1-A
Matrix: Water
Analysis Batch: 355037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354760

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	<0.80		0.80	0.27	ug/L		10/05/16 15:21	10/07/16 12:06	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		10/05/16 15:21	10/07/16 12:06	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		10/05/16 15:21	10/07/16 12:06	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		10/05/16 15:21	10/07/16 12:06	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		10/05/16 15:21	10/07/16 12:06	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		10/05/16 15:21	10/07/16 12:06	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		10/05/16 15:21	10/07/16 12:06	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		10/05/16 15:21	10/07/16 12:06	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		10/05/16 15:21	10/07/16 12:06	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		10/05/16 15:21	10/07/16 12:06	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		10/05/16 15:21	10/07/16 12:06	1
Carbazole	<4.0		4.0	0.28	ug/L		10/05/16 15:21	10/07/16 12:06	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		10/05/16 15:21	10/07/16 12:06	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		10/05/16 15:21	10/07/16 12:06	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		10/05/16 15:21	10/07/16 12:06	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		10/05/16 15:21	10/07/16 12:06	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		10/05/16 15:21	10/07/16 12:06	1
Chrysene	<0.40		0.40	0.055	ug/L		10/05/16 15:21	10/07/16 12:06	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		10/05/16 15:21	10/07/16 12:06	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		10/05/16 15:21	10/07/16 12:06	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		10/05/16 15:21	10/07/16 12:06	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		10/05/16 15:21	10/07/16 12:06	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		10/05/16 15:21	10/07/16 12:06	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		10/05/16 15:21	10/07/16 12:06	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		10/05/16 15:21	10/07/16 12:06	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		10/05/16 15:21	10/07/16 12:06	1
Fluoranthene	<0.80		0.80	0.36	ug/L		10/05/16 15:21	10/07/16 12:06	1
Fluorene	<0.80		0.80	0.20	ug/L		10/05/16 15:21	10/07/16 12:06	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		10/05/16 15:21	10/07/16 12:06	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		10/05/16 15:21	10/07/16 12:06	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		10/05/16 15:21	10/07/16 12:06	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		10/05/16 15:21	10/07/16 12:06	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		10/05/16 15:21	10/07/16 12:06	1
Isophorone	<1.6		1.6	0.30	ug/L		10/05/16 15:21	10/07/16 12:06	1
2-Methylnaphthalene	0.0916	J	1.6	0.052	ug/L		10/05/16 15:21	10/07/16 12:06	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		10/05/16 15:21	10/07/16 12:06	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		10/05/16 15:21	10/07/16 12:06	1
Naphthalene	0.677	J	0.80	0.25	ug/L		10/05/16 15:21	10/07/16 12:06	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		10/05/16 15:21	10/07/16 12:06	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		10/05/16 15:21	10/07/16 12:06	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		10/05/16 15:21	10/07/16 12:06	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		10/05/16 15:21	10/07/16 12:06	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		10/05/16 15:21	10/07/16 12:06	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354760/1-A
Matrix: Water
Analysis Batch: 355037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354760

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	<16		16	5.9	ug/L		10/05/16 15:21	10/07/16 12:06	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		10/05/16 15:21	10/07/16 12:06	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		10/05/16 15:21	10/07/16 12:06	1
Pentachlorophenol	<16		16	3.2	ug/L		10/05/16 15:21	10/07/16 12:06	1
Phenanthrene	<0.80		0.80	0.24	ug/L		10/05/16 15:21	10/07/16 12:06	1
Phenol	<4.0		4.0	0.54	ug/L		10/05/16 15:21	10/07/16 12:06	1
Pyrene	<0.80		0.80	0.34	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		10/05/16 15:21	10/07/16 12:06	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		10/05/16 15:21	10/07/16 12:06	1
Benzaldehyde	<32		32	12	ug/L		10/05/16 15:21	10/07/16 12:06	1
Caprolactam	<8.0		8.0	1.2	ug/L		10/05/16 15:21	10/07/16 12:06	1
Atrazine	<4.0		4.0	0.50	ug/L		10/05/16 15:21	10/07/16 12:06	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		10/05/16 15:21	10/07/16 12:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*30 - 123*	*10/05/16 15:21*	*10/07/16 12:06*	*1*
2-Fluorophenol (Surr)	*75*		*30 - 110*	*10/05/16 15:21*	*10/07/16 12:06*	*1*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*	*10/05/16 15:21*	*10/07/16 12:06*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*10/05/16 15:21*	*10/07/16 12:06*	*1*
Terphenyl-d14 (Surr)	*95*		*42 - 150*	*10/05/16 15:21*	*10/07/16 12:06*	*1*
2,4,6-Tribromophenol (Surr)	*74*		*30 - 150*	*10/05/16 15:21*	*10/07/16 12:06*	*1*

Lab Sample ID: LCS 500-354760/2-A
Matrix: Water
Analysis Batch: 355037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354760

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	26.8		ug/L		84	41 - 112
Acenaphthylene	32.0	25.8		ug/L		81	48 - 110
Acetophenone	32.0	26.8		ug/L		84	54 - 116
Anthracene	32.0	28.8		ug/L		90	65 - 118
Benzo[a]anthracene	32.0	30.1		ug/L		94	69 - 121
Benzo[a]pyrene	32.0	33.1		ug/L		103	69 - 130
Benzo[b]fluoranthene	32.0	33.1		ug/L		103	66 - 133
Benzo[g,h,i]perylene	32.0	31.4		ug/L		98	47 - 145
Benzo[k]fluoranthene	32.0	32.8		ug/L		102	64 - 134
Bis(2-chloroethoxy)methane	32.0	28.1		ug/L		88	55 - 115
Bis(2-chloroethyl)ether	32.0	28.7		ug/L		90	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	32.4		ug/L		101	60 - 132
4-Bromophenyl phenyl ether	32.0	28.1		ug/L		88	60 - 124
Butyl benzyl phthalate	32.0	33.7		ug/L		105	63 - 127
Carbazole	32.0	32.6		ug/L		102	71 - 132
4-Chloroaniline	32.0	20.5		ug/L		64	15 - 125
4-Chloro-3-methylphenol	32.0	30.0		ug/L		94	63 - 120
2-Chloronaphthalene	32.0	24.1		ug/L		75	38 - 110
2-Chlorophenol	32.0	28.0		ug/L		87	49 - 110
4-Chlorophenyl phenyl ether	32.0	28.4		ug/L		89	55 - 115

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354760/2-A
Matrix: Water
Analysis Batch: 355037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354760

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chrysene	32.0	31.4		ug/L		98	70 - 126
Dibenz(a,h)anthracene	32.0	31.2		ug/L		98	59 - 145
Dibenzofuran	32.0	27.6		ug/L		86	54 - 111
3,3'-Dichlorobenzidine	32.0	34.8		ug/L		109	57 - 145
2,4-Dichlorophenol	32.0	28.3		ug/L		88	53 - 123
Diethyl phthalate	32.0	30.0		ug/L		94	64 - 126
2,4-Dimethylphenol	32.0	22.5		ug/L		70	42 - 115
Dimethyl phthalate	32.0	30.6		ug/L		96	66 - 120
Di-n-butyl phthalate	32.0	31.1		ug/L		97	67 - 125
4,6-Dinitro-2-methylphenol	64.0	61.6		ug/L		96	34 - 152
2,4-Dinitrophenol	64.0	62.7		ug/L		98	20 - 140
2,4-Dinitrotoluene	32.0	33.2		ug/L		104	67 - 131
2,6-Dinitrotoluene	32.0	33.6		ug/L		105	66 - 125
Di-n-octyl phthalate	32.0	33.0		ug/L		103	63 - 133
Fluoranthene	32.0	29.3		ug/L		92	68 - 127
Fluorene	32.0	27.5		ug/L		86	54 - 113
Hexachlorobenzene	32.0	28.5		ug/L		89	63 - 127
Hexachlorobutadiene	32.0	16.8		ug/L		52	20 - 110
Hexachlorocyclopentadiene	32.0	12.3	J	ug/L		39	10 - 110
Hexachloroethane	32.0	16.2		ug/L		51	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	32.1		ug/L		100	52 - 150
Isophorone	32.0	27.7		ug/L		87	55 - 120
2-Methylnaphthalene	32.0	22.4		ug/L		70	32 - 110
2-Methylphenol	32.0	27.5		ug/L		86	49 - 113
3 & 4 Methylphenol	32.0	26.6		ug/L		83	49 - 114
Naphthalene	32.0	22.4		ug/L		70	32 - 110
2-Nitroaniline	32.0	32.1		ug/L		100	61 - 126
3-Nitroaniline	32.0	31.1		ug/L		97	42 - 134
4-Nitroaniline	32.0	32.3		ug/L		101	40 - 142
Nitrobenzene	32.0	28.0		ug/L		87	49 - 116
2-Nitrophenol	32.0	28.9		ug/L		90	51 - 120
4-Nitrophenol	64.0	42.5		ug/L		66	21 - 110
N-Nitrosodi-n-propylamine	32.0	27.7		ug/L		87	52 - 122
N-Nitrosodiphenylamine	32.0	28.4		ug/L		89	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	26.2		ug/L		82	34 - 110
Pentachlorophenol	64.0	51.1		ug/L		80	29 - 138
Phenanthrene	32.0	28.4		ug/L		89	63 - 121
Phenol	32.0	19.8		ug/L		62	33 - 100
Pyrene	32.0	30.1		ug/L		94	65 - 122
2,4,5-Trichlorophenol	32.0	30.4		ug/L		95	63 - 121
2,4,6-Trichlorophenol	32.0	28.9		ug/L		90	61 - 120
Caprolactam	32.0	20.5		ug/L		64	25 - 100
Atrazine	32.0	29.4		ug/L		92	57 - 128
1,1'-Biphenyl	32.0	24.7		ug/L		77	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*82*		*30 - 123*
2-Fluorophenol (Surr)	*84*		*30 - 110*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354760/2-A
Matrix: Water
Analysis Batch: 355037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354760

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*91*		*33 - 139*
Phenol-d5 (Surr)	*66*		*20 - 100*
Terphenyl-d14 (Surr)	*102*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*107*		*30 - 150*

Lab Sample ID: LCSD 500-354760/3-A
Matrix: Water
Analysis Batch: 355037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354760

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene			32.0	25.9		ug/L		81	41 - 112	4	20
Acenaphthylene			32.0	24.9		ug/L		78	48 - 110	4	20
Acetophenone			32.0	26.4		ug/L		83	54 - 116	1	20
Anthracene			32.0	27.8		ug/L		87	65 - 118	4	20
Benzo[a]anthracene			32.0	29.6		ug/L		92	69 - 121	2	20
Benzo[a]pyrene			32.0	32.5		ug/L		102	69 - 130	2	20
Benzo[b]fluoranthene			32.0	31.1		ug/L		97	66 - 133	6	20
Benzo[g,h,i]perylene			32.0	30.3		ug/L		95	47 - 145	3	20
Benzo[k]fluoranthene			32.0	32.0		ug/L		100	64 - 134	2	20
Bis(2-chloroethoxy)methane			32.0	28.1		ug/L		88	55 - 115	0	20
Bis(2-chloroethyl)ether			32.0	27.0		ug/L		84	46 - 110	6	20
Bis(2-ethylhexyl) phthalate			32.0	32.0		ug/L		100	60 - 132	1	20
4-Bromophenyl phenyl ether			32.0	27.1		ug/L		85	60 - 124	4	20
Butyl benzyl phthalate			32.0	32.9		ug/L		103	63 - 127	3	20
Carbazole			32.0	31.9		ug/L		100	71 - 132	2	20
4-Chloroaniline			32.0	20.6		ug/L		64	15 - 125	1	20
4-Chloro-3-methylphenol			32.0	29.5		ug/L		92	63 - 120	2	20
2-Chloronaphthalene			32.0	23.5		ug/L		74	38 - 110	2	20
2-Chlorophenol			32.0	26.9		ug/L		84	49 - 110	4	20
4-Chlorophenyl phenyl ether			32.0	27.8		ug/L		87	55 - 115	2	20
Chrysene			32.0	30.6		ug/L		96	70 - 126	2	20
Dibenz(a,h)anthracene			32.0	30.6		ug/L		96	59 - 145	2	20
Dibenzofuran			32.0	26.8		ug/L		84	54 - 111	3	20
3,3'-Dichlorobenzidine			32.0	35.2		ug/L		110	57 - 145	1	20
2,4-Dichlorophenol			32.0	27.6		ug/L		86	53 - 123	2	20
Diethyl phthalate			32.0	29.9		ug/L		93	64 - 126	0	20
2,4-Dimethylphenol			32.0	23.9		ug/L		75	42 - 115	6	20
Dimethyl phthalate			32.0	29.9		ug/L		93	66 - 120	2	20
Di-n-butyl phthalate			32.0	30.0		ug/L		94	67 - 125	4	20
4,6-Dinitro-2-methylphenol			64.0	60.4		ug/L		94	34 - 152	2	20
2,4-Dinitrophenol			64.0	61.9		ug/L		97	20 - 140	1	20
2,4-Dinitrotoluene			32.0	33.1		ug/L		103	67 - 131	0	20
2,6-Dinitrotoluene			32.0	33.0		ug/L		103	66 - 125	2	20
Di-n-octyl phthalate			32.0	32.3		ug/L		101	63 - 133	2	20
Fluoranthene			32.0	28.8		ug/L		90	68 - 127	2	20
Fluorene			32.0	27.0		ug/L		84	54 - 113	2	20
Hexachlorobenzene			32.0	28.0		ug/L		88	63 - 127	2	20
Hexachlorobutadiene			32.0	15.7		ug/L		49	20 - 110	6	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-354760/3-A
Matrix: Water
Analysis Batch: 355037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354760

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorocyclopentadiene	32.0	12.3	J	ug/L		38	10 - 110	0	20
Hexachloroethane	32.0	15.5		ug/L		49	20 - 110	4	20
Indeno[1,2,3-cd]pyrene	32.0	31.9		ug/L		100	52 - 150	1	20
Isophorone	32.0	27.9		ug/L		87	55 - 120	1	20
2-Methylnaphthalene	32.0	21.9		ug/L		69	32 - 110	2	20
2-Methylphenol	32.0	27.2		ug/L		85	49 - 113	1	20
3 & 4 Methylphenol	32.0	26.3		ug/L		82	49 - 114	1	20
Naphthalene	32.0	21.6		ug/L		67	32 - 110	4	20
2-Nitroaniline	32.0	31.8		ug/L		100	61 - 126	1	20
3-Nitroaniline	32.0	31.3		ug/L		98	42 - 134	1	20
4-Nitroaniline	32.0	33.9		ug/L		106	40 - 142	5	20
Nitrobenzene	32.0	27.7		ug/L		87	49 - 116	1	20
2-Nitrophenol	32.0	28.4		ug/L		89	51 - 120	2	20
4-Nitrophenol	64.0	40.8		ug/L		64	21 - 110	4	20
N-Nitrosodi-n-propylamine	32.0	27.8		ug/L		87	52 - 122	0	20
N-Nitrosodiphenylamine	32.0	28.2		ug/L		88	63 - 117	1	20
2,2'-oxybis[1-chloropropane]	32.0	26.0		ug/L		81	34 - 110	1	20
Pentachlorophenol	64.0	50.0		ug/L		78	29 - 138	2	20
Phenanthrene	32.0	27.8		ug/L		87	63 - 121	2	20
Phenol	32.0	19.0		ug/L		59	33 - 100	4	20
Pyrene	32.0	29.6		ug/L		92	65 - 122	2	20
2,4,5-Trichlorophenol	32.0	28.7		ug/L		90	63 - 121	6	20
2,4,6-Trichlorophenol	32.0	28.1		ug/L		88	61 - 120	3	20
Caprolactam	32.0	20.1		ug/L		63	25 - 100	2	20
Atrazine	32.0	28.4		ug/L		89	57 - 128	3	20
1,1'-Biphenyl	32.0	23.8		ug/L		74	42 - 110	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*80*		*30 - 123*
2-Fluorophenol (Surr)	*82*		*30 - 110*
Nitrobenzene-d5 (Surr)	*88*		*33 - 139*
Phenol-d5 (Surr)	*66*		*20 - 100*
Terphenyl-d14 (Surr)	*103*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-354671/1-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.010		0.010	0.0013	ug/L		10/05/16 07:55	10/05/16 15:29	1
alpha-BHC	<0.010		0.010	0.00065	ug/L		10/05/16 07:55	10/05/16 15:29	1
alpha-Chlordane	<0.010		0.010	0.0011	ug/L		10/05/16 07:55	10/05/16 15:29	1
beta-BHC	<0.010		0.010	0.0026	ug/L		10/05/16 07:55	10/05/16 15:29	1
4,4'-DDD	<0.010		0.010	0.0033	ug/L		10/05/16 07:55	10/05/16 15:29	1
4,4'-DDE	<0.010		0.010	0.00095	ug/L		10/05/16 07:55	10/05/16 15:29	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-354671/1-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.010		0.010	0.00080	ug/L		10/05/16 07:55	10/05/16 15:29	1
delta-BHC	<0.010		0.010	0.0026	ug/L		10/05/16 07:55	10/05/16 15:29	1
Dieldrin	<0.010		0.010	0.0032	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endosulfan I	<0.010		0.010	0.0010	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endosulfan II	<0.010		0.010	0.00070	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endosulfan sulfate	<0.010		0.010	0.0029	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endrin	<0.010		0.010	0.0036	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endrin aldehyde	<0.010		0.010	0.0021	ug/L		10/05/16 07:55	10/05/16 15:29	1
Endrin ketone	<0.010		0.010	0.0043	ug/L		10/05/16 07:55	10/05/16 15:29	1
gamma-BHC (Lindane)	<0.010		0.010	0.0014	ug/L		10/05/16 07:55	10/05/16 15:29	1
gamma-Chlordane	<0.010		0.010	0.0018	ug/L		10/05/16 07:55	10/05/16 15:29	1
Heptachlor	<0.010		0.010	0.0034	ug/L		10/05/16 07:55	10/05/16 15:29	1
Heptachlor epoxide	<0.010		0.010	0.0035	ug/L		10/05/16 07:55	10/05/16 15:29	1
Methoxychlor	<0.020		0.020	0.0058	ug/L		10/05/16 07:55	10/05/16 15:29	1
Toxaphene	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 15:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*30 - 143*	*10/05/16 07:55*	*10/05/16 15:29*	*1*
Tetrachloro-m-xylene	*65*		*30 - 120*	*10/05/16 07:55*	*10/05/16 15:29*	*1*

Lab Sample ID: LCS 500-354671/2-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.0800	0.0566		ug/L		71	40 - 130
alpha-BHC	0.0800	0.0754		ug/L		94	70 - 130
alpha-Chlordane	0.0800	0.0782		ug/L		98	70 - 130
beta-BHC	0.0800	0.0714		ug/L		89	70 - 130
4,4'-DDD	0.0800	0.0766		ug/L		96	70 - 130
4,4'-DDE	0.0800	0.0776		ug/L		97	56 - 130
4,4'-DDT	0.0800	0.0794		ug/L		99	50 - 137
delta-BHC	0.0800	0.0792		ug/L		99	70 - 130
Dieldrin	0.0800	0.0768		ug/L		96	70 - 130
Endosulfan I	0.0800	0.0609		ug/L		76	40 - 130
Endosulfan II	0.0800	0.0664		ug/L		83	49 - 130
Endosulfan sulfate	0.0800	0.0851		ug/L		106	70 - 130
Endrin	0.0800	0.0751		ug/L		94	69 - 130
Endrin aldehyde	0.0800	0.0733		ug/L		92	63 - 130
Endrin ketone	0.0800	0.0727		ug/L		91	54 - 141
gamma-BHC (Lindane)	0.0800	0.0734		ug/L		92	70 - 130
gamma-Chlordane	0.0800	0.0669		ug/L		84	63 - 130
Heptachlor	0.0800	0.0593		ug/L		74	40 - 130
Heptachlor epoxide	0.0800	0.0725		ug/L		91	70 - 130
Methoxychlor	0.0800	0.0709		ug/L		89	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-354671/2-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354671

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	105		30 - 143
Tetrachloro-m-xylene	66		30 - 120

Lab Sample ID: LCSD 500-354671/3-A
Matrix: Water
Analysis Batch: 354743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354671

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.0800	0.0519		ug/L		65	40 - 130	9	20
alpha-BHC	0.0800	0.0691		ug/L		86	70 - 130	9	20
alpha-Chlordane	0.0800	0.0722		ug/L		90	70 - 130	8	20
beta-BHC	0.0800	0.0668		ug/L		84	70 - 130	7	20
4,4'-DDD	0.0800	0.0717		ug/L		90	70 - 130	7	20
4,4'-DDE	0.0800	0.0721		ug/L		90	56 - 130	7	20
4,4'-DDT	0.0800	0.0741		ug/L		93	50 - 137	7	20
delta-BHC	0.0800	0.0737		ug/L		92	70 - 130	7	20
Dieldrin	0.0800	0.0724		ug/L		90	70 - 130	6	20
Endosulfan I	0.0800	0.0566		ug/L		71	40 - 130	7	20
Endosulfan II	0.0800	0.0628		ug/L		78	49 - 130	6	20
Endosulfan sulfate	0.0800	0.0795		ug/L		99	70 - 130	7	20
Endrin	0.0800	0.0704		ug/L		88	69 - 130	6	20
Endrin aldehyde	0.0800	0.0694		ug/L		87	63 - 130	6	20
Endrin ketone	0.0800	0.0668		ug/L		84	54 - 141	8	20
gamma-BHC (Lindane)	0.0800	0.0693		ug/L		87	70 - 130	6	20
gamma-Chlordane	0.0800	0.0633		ug/L		79	63 - 130	5	20
Heptachlor	0.0800	0.0552		ug/L		69	40 - 130	7	20
Heptachlor epoxide	0.0800	0.0682		ug/L		85	70 - 130	6	20
Methoxychlor	0.0800	0.0691		ug/L		86	47 - 153	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	102		30 - 143
Tetrachloro-m-xylene	59		30 - 120

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-354671/1-A
Matrix: Water
Analysis Batch: 354768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354671

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.10		0.10	0.017	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1221	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1232	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1242	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1248	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1254	<0.10		0.10	0.050	ug/L		10/05/16 07:55	10/05/16 16:51	1
PCB-1260	<0.10		0.10	0.018	ug/L		10/05/16 07:55	10/05/16 16:51	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-354671/1-A
Matrix: Water
Analysis Batch: 354768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354671

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*30 - 127*	*10/05/16 07:55*	*10/05/16 16:51*	*1*
DCB Decachlorobiphenyl	*99*		*30 - 150*	*10/05/16 07:55*	*10/05/16 16:51*	*1*

Lab Sample ID: LCS 500-354671/4-A
Matrix: Water
Analysis Batch: 354768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354671

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	1.00	0.854		ug/L		85	58 - 121
PCB-1260	1.00	1.03		ug/L		103	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*71*		*30 - 127*
DCB Decachlorobiphenyl	*98*		*30 - 150*

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1016	<0.40		0.40	0.067	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1260	<0.40		0.40	0.070	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1260	<0.40		0.40	0.070	ug/L		10/07/16 10:20	10/10/16 12:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*91*		*30 - 127*	*10/07/16 10:20*	*10/10/16 12:25*	*1*
Tetrachloro-m-xylene	*82*		*30 - 127*	*10/07/16 10:20*	*10/10/16 12:25*	*1*
DCB Decachlorobiphenyl	*119*		*30 - 150*	*10/07/16 10:20*	*10/10/16 12:25*	*1*
DCB Decachlorobiphenyl	*110*		*30 - 150*	*10/07/16 10:20*	*10/10/16 12:25*	*1*

Lab Sample ID: LCS 500-355087/4-A
Matrix: Water
Analysis Batch: 355347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.75		ug/L		94	58 - 121

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 500-355087/4-A
Matrix: Water
Analysis Batch: 355347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.47		ug/L		87	58 - 121
PCB-1260	4.00	4.12		ug/L		103	62 - 137
PCB-1260	4.00	4.19		ug/L		105	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*88*		*30 - 127*
Tetrachloro-m-xylene	*80*		*30 - 127*
DCB Decachlorobiphenyl	*95*		*30 - 150*
DCB Decachlorobiphenyl	*91*		*30 - 150*

Lab Sample ID: LCSD 500-355087/5-A
Matrix: Water
Analysis Batch: 355347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.29		ug/L		82	58 - 121	13	20
PCB-1016	4.00	3.21		ug/L		80	58 - 121	8	20
PCB-1260	4.00	3.64		ug/L		91	62 - 137	13	20
PCB-1260	4.00	3.71		ug/L		93	62 - 137	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*72*		*30 - 127*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*96*		*30 - 150*
DCB Decachlorobiphenyl	*94*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-355531/1-A
Matrix: Water
Analysis Batch: 355956

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355531

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 01:41	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 01:41	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 01:41	1
Barium	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 01:41	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 01:41	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 01:41	1
Calcium	<0.20		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 01:41	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 01:41	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 01:41	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 01:41	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 01:41	1
Magnesium	<0.10		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 01:41	1
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 01:41	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 01:41	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-355531/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355956 — **Prep Batch: 355531**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	<0.50		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 01:41	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 01:41	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 01:41	1
Sodium	<1.0		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 01:41	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 01:41	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 01:41	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 01:41	1

Lab Sample ID: MB 500-355531/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356193 — **Prep Batch: 355531**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 17:45	1

Lab Sample ID: LCS 500-355531/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355956 — **Prep Batch: 355531**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.09		mg/L		105	80 - 120
Antimony	0.500	0.517		mg/L		103	80 - 120
Arsenic	0.100	0.102		mg/L		102	80 - 120
Barium	2.00	2.11		mg/L		106	80 - 120
Beryllium	0.0500	0.0518		mg/L		104	80 - 120
Cadmium	0.0500	0.0510		mg/L		102	80 - 120
Calcium	10.0	10.9		mg/L		109	80 - 120
Chromium	0.200	0.209		mg/L		104	80 - 120
Cobalt	0.500	0.519		mg/L		104	80 - 120
Copper	0.250	0.261		mg/L		104	80 - 120
Iron	1.00	1.12		mg/L		112	80 - 120
Magnesium	10.0	10.2		mg/L		102	80 - 120
Manganese	0.500	0.518		mg/L		104	80 - 120
Nickel	0.500	0.518		mg/L		104	80 - 120
Potassium	10.0	10.6		mg/L		106	80 - 120
Selenium	0.100	0.0993		mg/L		99	80 - 120
Silver	0.0500	0.0488		mg/L		98	80 - 120
Sodium	10.0	10.7		mg/L		107	80 - 120
Thallium	0.100	0.101		mg/L		101	80 - 120
Vanadium	0.500	0.529		mg/L		106	80 - 120
Zinc	0.500	0.511		mg/L		102	80 - 120

Lab Sample ID: LCS 500-355531/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356193 — **Prep Batch: 355531**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.100	0.100		mg/L		100	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 500-355531/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355956 — **Prep Batch: 355531**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	2.00	2.03		mg/L		101	80 - 120	3	20
Antimony	0.500	0.496		mg/L		99	80 - 120	4	20
Arsenic	0.100	0.100		mg/L		100	80 - 120	2	20
Barium	2.00	2.03		mg/L		102	80 - 120	4	20
Beryllium	0.0500	0.0498		mg/L		100	80 - 120	4	20
Cadmium	0.0500	0.0492		mg/L		98	80 - 120	4	20
Calcium	10.0	10.2		mg/L		102	80 - 120	6	20
Chromium	0.200	0.199		mg/L		99	80 - 120	5	20
Cobalt	0.500	0.498		mg/L		100	80 - 120	4	20
Copper	0.250	0.252		mg/L		101	80 - 120	4	20
Iron	1.00	1.05		mg/L		105	80 - 120	6	20
Magnesium	10.0	9.77		mg/L		98	80 - 120	4	20
Manganese	0.500	0.498		mg/L		100	80 - 120	4	20
Nickel	0.500	0.498		mg/L		100	80 - 120	4	20
Potassium	10.0	10.2		mg/L		102	80 - 120	4	20
Selenium	0.100	0.0945		mg/L		95	80 - 120	5	20
Silver	0.0500	0.0472		mg/L		94	80 - 120	3	20
Sodium	10.0	10.3		mg/L		103	80 - 120	4	20
Thallium	0.100	0.0964		mg/L		96	80 - 120	4	20
Vanadium	0.500	0.507		mg/L		101	80 - 120	4	20
Zinc	0.500	0.490		mg/L		98	80 - 120	4	20

Lab Sample ID: LCSD 500-355531/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356193 — **Prep Batch: 355531**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.100	0.0973		mg/L		97	80 - 120	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-355131/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355216 — **Prep Batch: 355131**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:05	1

Lab Sample ID: LCS 500-355131/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355216 — **Prep Batch: 355131**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00211		mg/L		106	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-354645/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354645

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 05:39	1

Lab Sample ID: LCS 500-354645/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354645

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.87	6.50		mg/L		95	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-355060/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.00	J	5.0	1.5	mg/L			10/07/16 08:23	1

Lab Sample ID: LCS 500-355060/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	80 - 120

Lab Sample ID: 500-118070-3 MS — **Client Sample ID: MW-05-GW-10042016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	3.4	J B	20.0	20.6		mg/L		86	75 - 125

Lab Sample ID: 500-118070-3 MSD — **Client Sample ID: MW-05-GW-10042016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	3.4	J B	20.0	21.7		mg/L		91	75 - 125	5	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-355160/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.527	J	1.0	0.27	mg/L			10/06/16 23:12	1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-355160/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.7		mg/L		107	80 - 120
TOC Result 1	10.0	10.7		mg/L		107	80 - 120
TOC Result 2	10.0	10.7		mg/L		107	80 - 120

Lab Sample ID: MB 500-355462/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.507	J	1.0	0.27	mg/L			10/07/16 18:24	1

Lab Sample ID: LCS 500-355462/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	9.84		mg/L		98	80 - 120
TOC Result 1	10.0	9.78		mg/L		98	80 - 120
TOC Result 2	10.0	9.90		mg/L		99	80 - 120

Lab Sample ID: MB 500-355627/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355627

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			10/11/16 01:13	1

Lab Sample ID: LCS 500-355627/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355627

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	9.94		mg/L		99	80 - 120
TOC Result 1	10.0	9.89		mg/L		99	80 - 120
TOC Result 2	10.0	9.99		mg/L		100	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-354719/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354719

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/05/16 10:20	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 500-354719/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354719

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	204		mg/L		102	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-355797/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356005 — **Prep Batch: 355797**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		10/12/16 11:30	10/13/16 09:29	1

Lab Sample ID: LCS 500-355797/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356005 — **Prep Batch: 355797**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.59		mg/L		104	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-355179/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355179

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:40	1

Lab Sample ID: LCS 500-355179/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355179

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.101		mg/L		101	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-356272/21 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 21:08	1

Method: SM 4500 NO3 F - Nitrogen, Nitrate (Continued)

Lab Sample ID: LCS 500-356272/63
Matrix: Water
Analysis Batch: 356272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.955		mg/L		95	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Date Collected: 10/04/16 08:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	355084	10/07/16 21:01	PJH	TAL CHI
Total/NA	Prep	3510C			354760	10/05/16 15:21	JJH	TAL CHI
Total/NA	Analysis	8270D		10	355337	10/10/16 18:14	AJD	TAL CHI
Total/NA	Prep	3510C	DL		354760	10/05/16 15:21	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	50	356320	10/15/16 17:43	AJD	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354743	10/05/16 17:05	PJG	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8082A		1	354768	10/05/16 20:41	BJH	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	355956	10/13/16 02:24	PJ1	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356193	10/13/16 18:28	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	355956	10/13/16 02:19	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356193	10/13/16 18:17	PJ1	TAL CHI
Dissolved	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	355216	10/08/16 09:37	MJD	TAL CHI
Total/NA	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	355216	10/08/16 09:36	MJD	TAL CHI
Total/NA	Analysis	9034		1	354645		CLB	TAL CHI
					(Start)	10/05/16 06:40		
					(End)	10/05/16 06:44		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:32		
					(End)	10/07/16 08:33		
Total/NA	Analysis	9060A		1	355160	10/07/16 02:34	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	355461	10/10/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354719		SMO	TAL CHI
					(Start)	10/05/16 10:42		
					(End)	10/05/16 10:43		
Total/NA	Prep	SM 4500 NH3 B			355797	10/12/16 11:30	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	356005	10/13/16 09:40	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355179		EAT	TAL CHI
					(Start)	10/05/16 12:42		
					(End)	10/05/16 12:43		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/13/16 23:54	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355084	10/07/16 18:47	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	10	355084	10/07/16 19:14	PJH	TAL CHI
Total/NA	Prep	3510C			354760	10/05/16 15:21	JJH	TAL CHI
Total/NA	Analysis	8270D		5	356320	10/15/16 18:09	AJD	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354874	10/06/16 11:34	PJG	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8082A		1	354902	10/06/16 14:26	BJH	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	355956	10/13/16 02:34	PJ1	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356193	10/13/16 18:39	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	355956	10/13/16 02:29	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356193	10/13/16 18:35	PJ1	TAL CHI
Dissolved	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	355216	10/08/16 09:40	MJD	TAL CHI
Total/NA	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	355216	10/08/16 09:39	MJD	TAL CHI
Total/NA	Analysis	9034		1	354645		CLB	TAL CHI
					(Start)	10/05/16 06:44		
					(End)	10/05/16 06:48		
Total/NA	Analysis	9038		10	355060		CLB	TAL CHI
					(Start)	10/07/16 08:35		
					(End)	10/07/16 08:36		
Total/NA	Analysis	9060A		2	355627	10/11/16 02:02	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	355461	10/10/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354719		SMO	TAL CHI
					(Start)	10/05/16 10:43		
					(End)	10/05/16 10:45		
Total/NA	Prep	SM 4500 NH3 B			355797	10/12/16 11:30	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	356005	10/13/16 09:43	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355179		EAT	TAL CHI
					(Start)	10/05/16 12:43		
					(End)	10/05/16 12:43		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/13/16 23:56	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3
Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355084	10/07/16 19:40	PJH	TAL CHI
Total/NA	Prep	3510C			354760	10/05/16 15:21	JJH	TAL CHI
Total/NA	Analysis	8270D		1	356320	10/15/16 18:35	AJD	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354874	10/06/16 11:54	PJG	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8082A		1	354768	10/05/16 21:12	BJH	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	355956	10/13/16 02:50	PJ1	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356193	10/13/16 18:48	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	355956	10/13/16 02:38	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356193	10/13/16 18:45	PJ1	TAL CHI
Dissolved	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	355216	10/08/16 09:43	MJD	TAL CHI
Total/NA	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	355216	10/08/16 09:42	MJD	TAL CHI
Total/NA	Analysis	9034		1	354645		CLB	TAL CHI
					(Start)	10/05/16 06:48		
					(End)	10/05/16 06:52		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:36		
					(End)	10/07/16 08:37		
Total/NA	Analysis	9060A		1	355160	10/07/16 03:07	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	355461	10/10/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354719		SMO	TAL CHI
					(Start)	10/05/16 10:45		
					(End)	10/05/16 10:46		
Total/NA	Prep	SM 4500 NH3 B			355797	10/12/16 11:30	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356005	10/13/16 09:46	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355179		EAT	TAL CHI
					(Start)	10/05/16 12:43		
					(End)	10/05/16 12:44		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/13/16 23:58	HMW	TAL CHI

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4
Date Collected: 10/04/16 12:50
Matrix: Water
Date Received: 10/04/16 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355084	10/07/16 20:07	PJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	10	355084	10/07/16 20:34	PJH	TAL CHI
Total/NA	Prep	3510C			354760	10/05/16 15:21	JJH	TAL CHI
Total/NA	Analysis	8270D		10	355337	10/10/16 19:42	AJD	TAL CHI
Total/NA	Prep	3510C			354671	10/05/16 07:55	JJH	TAL CHI
Total/NA	Analysis	8081B		5	354874	10/06/16 12:13	PJG	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355347	10/10/16 13:11	BJH	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	355956	10/13/16 03:02	PJ1	TAL CHI
Dissolved	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356193	10/13/16 18:59	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	355956	10/13/16 02:54	PJ1	TAL CHI
Total/NA	Prep	3010A			355531	10/11/16 08:58	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356193	10/13/16 18:51	PJ1	TAL CHI
Dissolved	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	355216	10/08/16 09:46	MJD	TAL CHI
Total/NA	Prep	7470A			355131	10/07/16 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	355216	10/08/16 09:44	MJD	TAL CHI
Total/NA	Analysis	9034		1	354645		CLB	TAL CHI
					(Start)	10/05/16 06:52		
					(End)	10/05/16 06:57		
Total/NA	Analysis	9038		10	355060		CLB	TAL CHI
					(Start)	10/07/16 08:39		
					(End)	10/07/16 08:40		
Total/NA	Analysis	9060A		20	355462	10/07/16 20:02	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	355461	10/10/16 19:05	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354719		SMO	TAL CHI
					(Start)	10/05/16 10:46		
					(End)	10/05/16 10:48		
Total/NA	Prep	SM 4500 NH3 B			355797	10/12/16 11:30	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		100	356005	10/13/16 09:49	MTB	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355179		EAT	TAL CHI
					(Start)	10/05/16 12:44		
					(End)	10/05/16 12:44		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:00	HMW	TAL CHI

Laboratory References:
TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St #1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118070
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 3.2, 2.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

500-118070 COC

7. Cooler
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	total metals	Dissolved metals	Ammonia, NO3, NO2	Sulfate	VOCs	TOC	TSS, SO4, NO2	Dissolved Gases	Comments
Preservative							8	3	3	6	5	1	2	8	9	
1		MW-03-GW-10042016	10/4/16	0810	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metals
2		MW-04-GW-10042016	10/4/16	0935	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-05-GW-10042016	10/4/16	1110	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-07-GW-10042016	10/4/16	1250	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- MW-07, Reactive with preservative
																unable to remove bubbles from VOC, TOC samples
																- Poor Meniscus formed
																in all Diss Gas Samples
																unable to remove bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: standard

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	10/4/16	1600	David Bedell	TA	10/4/16	1600
David Bedell	TA	10/4/16	1650	[illegible]	TA-CHI	10/04/16	16:50
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)
10/18/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118070-1

Login Number: 118070
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7,3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118070-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/17/2016 11:23:50 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Subcontract Data 4
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Receipt Checklists 19

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-2

Job ID: 500-118070-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118070-2

Comments
No additional comments.

Receipt
The samples were received on 10/4/2016 4:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.2º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

October 14, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-118070-2**
Pace Workorder: 20509

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, October 06, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 10/14/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages ____

Report ID: 20509 - 848739

Page 1 of 11

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Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 20509 500-118070-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
205090001	MW-03-GW-10042016	Water	10/4/2016 08:10	10/6/2016 11:15
205090002	MW-04-GW-10042016	Water	10/4/2016 09:35	10/6/2016 11:15
205090003	MW-05-GW-10042016	Water	10/4/2016 11:10	10/6/2016 11:15
205090004	MW-07-GW-10042016	Water	10/4/2016 12:50	10/6/2016 11:15

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ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090001 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-03-GW-10042016 Date Collected: 10/4/2016 08:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	16000	ug/l	0.50	0.027	1	10/12/2016 12:55	TD	n
Carbon Dioxide	30	mg/l	5.0	0.24	1	10/12/2016 12:55	TD	n
Oxygen	3.4	mg/l	0.50	0.13	1	10/12/2016 12:55	TD	n
Nitrogen	9.1	mg/l	2.0	0.24	1	10/12/2016 12:55	TD	n

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ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090002 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-04-GW-10042016 Date Collected: 10/4/2016 09:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	13000	ug/l	0.50	0.027	1	10/12/2016 13:07	TD	n
Carbon Dioxide	<5.0	mg/l	5.0	0.24	1	10/12/2016 13:07	TD	n
Oxygen	<0.50	mg/l	0.50	0.13	1	10/12/2016 13:07	TD	n
Nitrogen	8.6	mg/l	2.0	0.24	1	10/12/2016 13:07	TD	n

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ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090003 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-05-GW-10042016 Date Collected: 10/4/2016 11:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	10000	ug/l	0.50	0.027	1	10/12/2016 13:20	TD	n
Carbon Dioxide	270	mg/l	5.0	0.24	1	10/12/2016 13:20	TD	n
Oxygen	2.3	mg/l	0.50	0.13	1	10/12/2016 13:20	TD	n
Nitrogen	8.1	mg/l	2.0	0.24	1	10/12/2016 13:20	TD	n

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ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090004 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-07-GW-10042016 Date Collected: 10/4/2016 12:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	19000	ug/l	0.50	0.027	1	10/12/2016 13:32	TD	n
Carbon Dioxide	38	mg/l	5.0	0.24	1	10/12/2016 13:32	TD	n
Oxygen	1.1	mg/l	0.50	0.13	1	10/12/2016 13:32	TD	n
Nitrogen	6.6	mg/l	2.0	0.24	1	10/12/2016 13:32	TD	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 20509 500-118070-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 20509 500-118070-2

QC Batch: DISG/5664 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 205090001, 205090002, 205090003, 205090004

METHOD BLANK: 44719

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 44720

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 44721 44723

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	800	810	106	108	80-120	1.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 44722 44724

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	140	140	117	117	80-120	0	20	n
Oxygen	mg/l	11	12	10	105	91	80-120	14	20	n
Nitrogen	mg/l	140	120	120	90	87	80-120	3.4	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 20509 500-118070-2

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 20509 500-118070-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
205090001	MW-03-GW-10042016			AM20GAX	DISG/5664
205090002	MW-04-GW-10042016			AM20GAX	DISG/5664
205090003	MW-05-GW-10042016			AM20GAX	DISG/5664
205090004	MW-07-GW-10042016			AM20GAX	DISG/5664

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TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20509

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/17/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78836.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118070-2
Address: 220 William Pitt Way, ,	Due Date Requested: 10/14/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-03-GW-10042016 (500-118070-1)	10/4/16	08:10 Central		Water			X	2	
MW-04-GW-10042016 (500-118070-2)	10/4/16	09:35 Central		Water			X	2	
MW-05-GW-10042016 (500-118070-3)	10/4/16	11:10 Central		Water			X	2	
MW-07-GW-10042016 (500-118070-4)	10/4/16	12:50 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

2-7°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/05/16 1530	TA	[signature]	10.6.16 1115	Pace
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Cooler Receipt Form

Client Name: TA Chicago Project: 500-118070-2 Lab Work Order: 20509

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 6514842785 19

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 2.7°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: CJ Date: 10.6.16

Project Manager Review: RWO Date: 10-6-16

F-PAE-Q-009-rev.00, 20 Nov2014

Sample Tracking Record

Client Name: Test America

Page ____ of ____

Client Project Number: 500-118070-2

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas				
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
20509/1-4				see above	LG	10.6.16	11:15
↓	TD	10-12-16	0400	diss gas	TD	10-12-16	1500

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St #1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118070
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 3.2, 2.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

500-118070 COC

7. Cool...
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	total metals (Preservative 3)	Dissolved metals (Preservative 3)	Ammonia, NO3, NO2 (Preservative 6)	Sulfide (Preservative 5)	VOCs (Preservative 1)	TOC (Preservative 2)	TSS, SO4, NO2 (Preservative 8)	Dissolved Gases (Preservative 9)	Comments
1		MW-03-GW-10042016	10/4/16	0810	18	W	—	✓	✓	✓	—	✓	✓	✓	✓	Dissolved Metals
2		MW-04-GW-10042016	10/4/16	0935	18	W	—	✓	✓	✓	—	✓	✓	✓	✓	field filtered
3		MW-05-GW-10042016	10/4/16	1110	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-07-GW-10042016	10/4/16	1250	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- MW-07, Reactive with preservative
																unable to remove bubbles from VOC, TOC
																samples
																- Poor Meniscus formed
																in all Diss Gas Samples
																unable to remove bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	10/4/16	1600	David Bedell	TA	10/4/16	1600
David Bedell	TA	10/4/16	1650	[illegible]	TA-CHI	10/04/16	16:50
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

10/17/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118070-2

Login Number: 118070
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7,3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118151-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/19/2016 1:06:00 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-118151-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118151-1

Comments
No additional comments.

Receipt
The samples were received on 10/5/2016 4:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.6º C, 2.7º C and 3.1º C.

GC/MS VOA
Method(s) 8260B: The following samples were diluted due to the abundance of target and non-target analytes: MW-13-GW-10042016 (500-118151-1) and DUP-1 (10042016) (500-118151-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following samples were diluted due to the nature of the sample matrix: MW-13-GW-10042016 (500-118151-1), DUP-1 (10042016) (500-118151-2), MW-06-GW-10052016 (500-118151-5) and DUP-2 (10052016) (500-118151-6). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: Internal standard (ISTD6) response for the following samples was outside of acceptance limits: MW-06-GW-10052016 (500-118151-5) and DUP-2 (10052016) (500-118151-6). The samples were not re-analyzed due to no positive detects for any analytes associated with ISTD6.

Method(s) 8270D: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-354970 recovered outside control limits (20%) for 4-Chloroaniline at 27%. The % recoveries were within limits. No further action was required.

Method(s) 8270D: CCVIS 500-355044/2 was outside the method criteria for 2,4-Dinitrophenol (36.9%D, low; 4,6-Dinitro-2-methylphenol (20.5%D, low); 4-Chloroaniline (49.9%D, high) and Benzaldehyde (45.6%D, low). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be poor and/or erratic performers: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. ICV 500-354143/13 had Benzaldehyde at 35.8%D, low. No further action was required.(ICV 500-354143/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The continuing calibration verification (CCV) associated with batch 500-355155 recovered above the upper control limit for 4,4'-DDE. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-06-GW-10052016 (500-118151-5) and DUP-2 (10052016) (500-118151-6).

Method(s) 8081B: The Tetrachloro-m-xylene surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: MW-06-GW-10052016 (500-118151-5). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method(s) 8081B: DCB Decachlorobiphenyl (low biased) and Tetrachloro-m-xylene (high biased) surrogate recovery for the following samples were outside control limits: DUP-2 (10052016) (500-118151-6). Re-extraction and re-analysis was performed with concurring results. The re-prepped analysis has been reported.

Method(s) 8081B: The Tetrachloro-m-xylene surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: MW-13-GW-10042016 (500-118151-1) and DUP-1 (10042016) (500-118151-2). The

Job ID: 500-118151-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

Method(s) 8081B: The continuing calibration verification (CCV) associated with batch 500-355366 recovered above the upper control limit for surrogate DCB Decachlorobiphenyl (24.6%D). The samples associated with this CCV had surrogate recoveries in control; therefore, the data have been reported. The following samples are impacted: MW-13-GW-10042016 (500-118151-1) and DUP-1 (10042016) (500-118151-2).

Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-13-GW-10042016 (500-118151-1) and DUP-1 (10042016) (500-118151-2). The reagent lot number used was: 143486.

Method(s) 8082A: DCB Decachlorobiphenyl surrogate %D was above the control limit on the confirmation column for the following continuing calibration verification standards: (CCV 500-355347/15), (CCV 500-355347/25) and (CCVIS 500-355347/1); however, %D was within control limits on the primary column.

Method(s) 8082A: %D was above the control limit for DCB Decachlorobiphenyl surrogate recovery in the following continuing calibration verification: (CCVIS 500-355065/1). this CCV was used for retention time only. Data has been qualified and reported.

Method(s) 8082A: DCB Decachlorobiphenyl surrogate %D was above control limits on the primary and confirmation column for the following continuing calibration verification: (CCVIS 500-356515/1); however, Tetrachloro-m-xylene surrogate was within control limits.

Method(s) 8082A: PCB-1260 peak 5 %D was above the control limit on the confirmation column in the following continuing calibration verification: (CCVIS 500-356515/1); however, the primary column was within control limits.

Method(s) 8082A: DCB Decachlorobiphenyl surrogate recovery fell below control limits; however, Tetrachloro-m-xylene was within control limits. Data has been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 3010A: Due to the matrix, the initial volume(s) used for the following sample(s) deviated from the standard procedure: 10ml of sample. The reporting limits (RLs) have been adjusted proportionately.

Method(s) 3010A: Due to the matrix, the initial volume(s) used for the following sample deviated from the standard procedure: DUP-2 (10052016) (500-118151-6). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 6010C: The low-level CCV at line 8 and 100 in 6010C batch 500-356195 was above the method acceptance limits of 70-130% recovery for Iron. The samples MW-13-GW-10042016 (500-118151-1), DUP-1 (10042016) (500-118151-2), MW-08-GW-10052016 (500-118151-3), MW-09-GW-10052016 (500-118151-4) and MW-06-GW-10052016 (500-118151-5) were bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) 9038: Please note that the following Sulfate samples have been diluted due to the matrix of the samples and have been reported with elevated reporting limits: MW-06-GW-10052016 (500-118151-5) and DUP-2 (10052016) (500-118151-6)

Method(s) 9060A: The TOC matrix spike / matrix spike duplicate (MS/MSD) recoveries for sample MW-09-GW-10052016 (500-118151-4) in analytical batch 500-355160 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) SM 4500 NO3 F: The initial calibration verification (ICV) associated with batch 500-356272 recovered below the lower control

Job ID: 500-118151-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

limit at 89% for Nitrate-Nitrite. The laboratory control standard (LCS), which is made from the same source as the ICV and initially brackets the samples, recovered within acceptance criteria at 93%; therefore the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016 — Lab Sample ID: 500-118151-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	400		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	19		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	12		10	3.3	ug/L	10		8260B	Total/NA
Ethylbenzene	1000		5.0	1.8	ug/L	10		8260B	Total/NA
Isopropylbenzene	110		10	3.9	ug/L	10		8260B	Total/NA
Toluene	1700		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	7000		100	22	ug/L	100		8260B	Total/NA
Acenaphthylene	2.2	J	3.7	0.98	ug/L	5		8270D	Total/NA
Acetophenone	26		18	2.4	ug/L	5		8270D	Total/NA
Diethyl phthalate	12		7.3	1.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	22	J	37	6.6	ug/L	5		8270D	Total/NA
Di-n-butyl phthalate	3.8	J	18	2.7	ug/L	5		8270D	Total/NA
Fluorene	1.0	J	3.7	0.89	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	10		7.3	0.24	ug/L	5		8270D	Total/NA
2-Methylphenol	5.4	J	7.3	1.1	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	29		7.3	1.6	ug/L	5		8270D	Total/NA
Naphthalene	140		3.7	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	11		3.7	1.4	ug/L	5		8270D	Total/NA
Phenol	17	J	18	2.5	ug/L	5		8270D	Total/NA
1,1'-Biphenyl	1.8	J	18	1.3	ug/L	5		8270D	Total/NA
Aluminum	0.11	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0034	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.26		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	84		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0059	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0021	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0029	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	8.9	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0036	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	52		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.38		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0079	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	74		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	220		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0031	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.011	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.23		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	96		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0038	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0015	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	6.4	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	46		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.34		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0072	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	67		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0036	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	21	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	53	B	2.0	0.53	mg/L	2		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016 (Continued) — Lab Sample ID: 500-118151-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonia	79	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: DUP-1 (10042016) — Lab Sample ID: 500-118151-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	370		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	16		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	12		10	3.3	ug/L	10		8260B	Total/NA
1,1-Dichloroethane	7.6	J	10	4.1	ug/L	10		8260B	Total/NA
Ethylbenzene	970		5.0	1.8	ug/L	10		8260B	Total/NA
Isopropylbenzene	110		10	3.9	ug/L	10		8260B	Total/NA
Toluene	1500		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	7100		100	22	ug/L	100		8260B	Total/NA
Acenaphthylene	1.7	J	3.6	0.98	ug/L	5		8270D	Total/NA
Acetophenone	20		18	2.4	ug/L	5		8270D	Total/NA
Benzo[a]anthracene	0.43	J	0.73	0.21	ug/L	5		8270D	Total/NA
Chrysene	0.35	J	1.8	0.25	ug/L	5		8270D	Total/NA
Diethyl phthalate	8.9		7.3	1.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	16	J	36	6.6	ug/L	5		8270D	Total/NA
Di-n-butyl phthalate	3.4	J	18	2.7	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	8.1		7.3	0.24	ug/L	5		8270D	Total/NA
2-Methylphenol	4.8	J	7.3	1.1	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	22		7.3	1.6	ug/L	5		8270D	Total/NA
Naphthalene	110		3.6	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	7.7		3.6	1.3	ug/L	5		8270D	Total/NA
Phenol	12	J	18	2.4	ug/L	5		8270D	Total/NA
Aluminum	0.11	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0047	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.28		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	85		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0052	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0023	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0040	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	9.6	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0077		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	55		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.40		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0069	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	77		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	230		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0035	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.013	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.15	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0047	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	89		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0046	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	7.6	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	50		0.10	0.041	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016) (Continued) — Lab Sample ID: 500-118151-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.36		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0063	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	71		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0065	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0036	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	0.57	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	19	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	54	B	2.0	0.53	mg/L	2		9060A	Total/NA
Total Suspended Solids	25		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	80	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-08-GW-10052016 — Lab Sample ID: 500-118151-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	0.40	J	1.0	0.39	ug/L	1		8260B	Total/NA
Xylenes, Total	0.82	J	1.0	0.22	ug/L	1		8260B	Total/NA
2-Methylnaphthalene	0.10	J	1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	0.39	J	1.5	0.33	ug/L	1		8270D	Total/NA
Aluminum	0.062	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.56		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	97		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0028	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	8.4	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0025	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	72		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.14		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	37		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.52		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	92		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	7.8	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	68		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.13		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	3.0	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	17	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	19		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	39	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-09-GW-10052016 — Lab Sample ID: 500-118151-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.3		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	13		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.1		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.2		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	2.5		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.99	J	1.0	0.32	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016 (Continued) — Lab Sample ID: 500-118151-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.46	J	1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.88		0.74	0.23	ug/L	1		8270D	Total/NA
Dibenzofuran	0.21	J	1.5	0.19	ug/L	1		8270D	Total/NA
Fluorene	0.39	J	0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.3		1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	1.5		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	0.30	J	0.74	0.23	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.57	J	0.74	0.27	ug/L	1		8270D	Total/NA
Phenanthrene	0.37	J	0.74	0.22	ug/L	1		8270D	Total/NA
Barium	0.77		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0050	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	24	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	79		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.15		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	74		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	190		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.77		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0044	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0010	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	25	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	79		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.15		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	74		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0058	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	190		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0019	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	2.1	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	27	F1 B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	28		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	78	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-06-GW-10052016 — Lab Sample ID: 500-118151-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	41		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.6		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5.3		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.6		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	14		1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.3		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	63		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	19		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	44		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	160		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	4.4		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	240		1.0	0.22	ug/L	1		8260B	Total/NA
Acetophenone	7.2	J	37	4.9	ug/L	10		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016 (Continued) — Lab Sample ID: 500-118151-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	120		74	13	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	79		74	13	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	2.2	J	15	0.48	ug/L	10		8270D	Total/NA
2-Methylphenol	21		15	2.3	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	160		15	3.3	ug/L	10		8270D	Total/NA
Naphthalene	14		7.4	2.3	ug/L	10		8270D	Total/NA
N-Nitrosodiphenylamine	3.2	J	7.4	2.7	ug/L	10		8270D	Total/NA
PCB-1242	5.3		0.36	0.18	ug/L	1		8082A	Total/NA
Aluminum	0.55	J	1.0	0.31	mg/L	1		6010C	Total/NA
Arsenic	0.030	J	0.050	0.017	mg/L	1		6010C	Total/NA
Barium	0.37		0.050	0.011	mg/L	1		6010C	Total/NA
Calcium	11		1.0	0.30	mg/L	1		6010C	Total/NA
Chromium	0.19		0.050	0.012	mg/L	1		6010C	Total/NA
Cobalt	0.036		0.025	0.0048	mg/L	1		6010C	Total/NA
Copper	0.016	J	0.050	0.011	mg/L	1		6010C	Total/NA
Iron	2.7	^ B	1.0	0.50	mg/L	1		6010C	Total/NA
Lead	0.22		0.025	0.013	mg/L	1		6010C	Total/NA
Magnesium	28		0.50	0.20	mg/L	1		6010C	Total/NA
Nickel	0.14		0.050	0.018	mg/L	1		6010C	Total/NA
Potassium	650		2.5	0.81	mg/L	1		6010C	Total/NA
Sodium	3200		5.0	2.2	mg/L	1		6010C	Total/NA
Vanadium	0.065		0.025	0.0093	mg/L	1		6010C	Total/NA
Zinc	0.20		0.10	0.045	mg/L	1		6010C	Total/NA
Arsenic	0.028	J	0.050	0.017	mg/L	1		6010C	Dissolved
Barium	0.35		0.050	0.011	mg/L	1		6010C	Dissolved
Calcium	11		1.0	0.30	mg/L	1		6010C	Dissolved
Chromium	0.18		0.050	0.012	mg/L	1		6010C	Dissolved
Cobalt	0.038		0.025	0.0048	mg/L	1		6010C	Dissolved
Iron	2.1	^ B	1.0	0.50	mg/L	1		6010C	Dissolved
Lead	0.029		0.025	0.013	mg/L	1		6010C	Dissolved
Magnesium	29		0.50	0.20	mg/L	1		6010C	Dissolved
Nickel	0.15		0.050	0.018	mg/L	1		6010C	Dissolved
Potassium	690		2.5	0.81	mg/L	1		6010C	Dissolved
Selenium	0.039	J	0.050	0.026	mg/L	1		6010C	Dissolved
Sodium	3300		5.0	2.2	mg/L	1		6010C	Dissolved
Vanadium	0.053		0.025	0.0093	mg/L	1		6010C	Dissolved
Zinc	0.056	J	0.10	0.045	mg/L	1		6010C	Dissolved
Mercury	0.00023		0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	8.0		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	12	J B	25	7.4	mg/L	5		9038	Total/NA
Total Organic Carbon - Duplicates	530	B	20	5.3	mg/L	20		9060A	Total/NA
Nitrogen, Nitrate	0.053	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	7.0		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	790		50	25	mg/L	250		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.053	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: DUP-2 (10052016) — Lab Sample ID: 500-118151-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	44		5.0	1.7	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016) (Continued) — Lab Sample ID: 500-118151-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	7.6		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5.5		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	3.2		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	18		1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.3		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	78		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	5.1		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	20		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	49		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	200		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	5.3		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	220		10	2.2	ug/L	10		8260B	Total/NA
Acetophenone	6.6	J	37	4.9	ug/L	10		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	120		74	13	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	77		74	13	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	2.1	J	15	0.48	ug/L	10		8270D	Total/NA
2-Methylphenol	17		15	2.3	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	150		15	3.3	ug/L	10		8270D	Total/NA
Naphthalene	13		7.4	2.3	ug/L	10		8270D	Total/NA
PCB-1242	4.9		0.37	0.18	ug/L	1		8082A	Total/NA
Aluminum	0.56	J	1.0	0.31	mg/L	1		6010C	Total/NA
Arsenic	0.019	J	0.050	0.017	mg/L	1		6010C	Total/NA
Barium	0.40		0.050	0.011	mg/L	1		6010C	Total/NA
Calcium	12		1.0	0.30	mg/L	1		6010C	Total/NA
Chromium	0.20		0.050	0.012	mg/L	1		6010C	Total/NA
Cobalt	0.046		0.025	0.0048	mg/L	1		6010C	Total/NA
Copper	0.022	J	0.050	0.011	mg/L	1		6010C	Total/NA
Iron	2.6		1.0	0.50	mg/L	1		6010C	Total/NA
Lead	0.24		0.025	0.013	mg/L	1		6010C	Total/NA
Magnesium	30		0.50	0.20	mg/L	1		6010C	Total/NA
Nickel	0.17		0.050	0.018	mg/L	1		6010C	Total/NA
Potassium	700		2.5	0.81	mg/L	1		6010C	Total/NA
Sodium	3500		5.0	2.2	mg/L	1		6010C	Total/NA
Vanadium	0.064		0.025	0.0093	mg/L	1		6010C	Total/NA
Zinc	0.31		0.10	0.045	mg/L	1		6010C	Total/NA
Arsenic	0.022	J	0.050	0.017	mg/L	1		6010C	Dissolved
Barium	0.37		0.050	0.011	mg/L	1		6010C	Dissolved
Calcium	11		1.0	0.30	mg/L	1		6010C	Dissolved
Chromium	0.19		0.050	0.012	mg/L	1		6010C	Dissolved
Cobalt	0.046		0.025	0.0048	mg/L	1		6010C	Dissolved
Iron	2.4		1.0	0.50	mg/L	1		6010C	Dissolved
Magnesium	30		0.50	0.20	mg/L	1		6010C	Dissolved
Nickel	0.17		0.050	0.018	mg/L	1		6010C	Dissolved
Potassium	710		2.5	0.81	mg/L	1		6010C	Dissolved
Sodium	3500		5.0	2.2	mg/L	1		6010C	Dissolved
Vanadium	0.058		0.025	0.0093	mg/L	1		6010C	Dissolved
Zinc	0.051	J	0.10	0.045	mg/L	1		6010C	Dissolved
Mercury	0.00018	J	0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	8.6		1.0	0.18	mg/L	1		9034	Total/NA
Total Organic Carbon - Duplicates	520	B	20	5.3	mg/L	20		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016) (Continued) — Lab Sample ID: 500-118151-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrate	0.058	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	7.5		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	780		50	25	mg/L	250		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.058	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-118151-1	MW-13-GW-10042016	Water	10/04/16 15:15	10/05/16 16:35
500-118151-2	DUP-1 (10042016)	Water	10/04/16 00:00	10/05/16 16:35
500-118151-3	MW-08-GW-10052016	Water	10/05/16 12:05	10/05/16 16:35
500-118151-4	MW-09-GW-10052016	Water	10/05/16 13:35	10/05/16 16:35
500-118151-5	MW-06-GW-10052016	Water	10/05/16 08:40	10/05/16 16:35
500-118151-6	DUP-2 (10052016)	Water	10/05/16 00:00	10/05/16 16:35

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 22:11	10
Benzene	**400**		5.0	1.5	ug/L			10/11/16 22:11	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 22:11	10
Bromoform	<10		10	4.8	ug/L			10/11/16 22:11	10
Bromomethane	<20		20	8.0	ug/L			10/11/16 22:11	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 22:11	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 22:11	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 22:11	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 22:11	10
Chloroform	<10		10	3.7	ug/L			10/11/16 22:11	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 22:11	10
cis-1,2-Dichloroethene	**19**		10	4.1	ug/L			10/11/16 22:11	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 22:11	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 22:11	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 22:11	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			10/11/16 22:11	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 22:11	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 22:11	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 22:11	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 22:11	10
1,1-Dichloroethane	<10		10	4.1	ug/L			10/11/16 22:11	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 22:11	10
Ethylbenzene	**1000**		5.0	1.8	ug/L			10/11/16 22:11	10
2-Hexanone	<50		50	16	ug/L			10/11/16 22:11	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 22:11	10
Methyl acetate	<50		50	20	ug/L			10/11/16 22:11	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 22:11	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 22:11	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 22:11	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 22:11	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 22:11	10
Styrene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 22:11	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 22:11	10
Toluene	**1700**		5.0	1.5	ug/L			10/11/16 22:11	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 22:11	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 22:11	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 22:11	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 22:11	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 22:11	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 22:11	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 22:11	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 22:11	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 22:11	10

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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		71 - 120		10/11/16 22:11	10
Dibromofluoromethane	89		70 - 120		10/11/16 22:11	10
1,2-Dichloroethane-d4 (Surr)	85		71 - 127		10/11/16 22:11	10
Toluene-d8 (Surr)	102		75 - 120		10/11/16 22:11	10

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7000**		100	22	ug/L			10/11/16 22:38	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		71 - 120		10/11/16 22:38	100
Dibromofluoromethane	92		70 - 120		10/11/16 22:38	100
1,2-Dichloroethane-d4 (Surr)	83		71 - 127		10/11/16 22:38	100
Toluene-d8 (Surr)	98		75 - 120		10/11/16 22:38	100

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acenaphthylene	**2.2**	**J**	3.7	0.98	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acetophenone	**26**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:28	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloroaniline	<37	*	37	7.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloro-3-methylphenol	<37		37	8.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:28	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dichlorophenol	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Diethyl phthalate	**12**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dimethylphenol	**22**	**J**	37	6.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-butyl phthalate	**3.8**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrophenol	<73		73	31	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-octyl phthalate	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 15:28	5

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Matrix: Water

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Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
Fluorene	**1.0**	**J**	3.7	0.89	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylnaphthalene	**10**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylphenol	**5.4**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
3 & 4 Methylphenol	**29**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Naphthalene	**140**		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
3-Nitroaniline	<37		37	6.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Nitrobenzene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitrophenol	<37		37	9.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodiphenylamine	**11**		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenol	**17**	**J**	18	2.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzaldehyde	<150	^	150	55	ug/L		10/06/16 16:12	10/07/16 15:28	5
Caprolactam	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
1,1'-Biphenyl	**1.8**	**J**	18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Nitrobenzene-d5 (Surr)	*79*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Phenol-d5 (Surr)	*62*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Terphenyl-d14 (Surr)	*114*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2,4,6-Tribromophenol (Surr)	*134*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/06/16 07:53	10/10/16 12:12	1
beta-BHC	<0.037		0.037	0.0093	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/06/16 07:53	10/10/16 12:12	1
delta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:12	1

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Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/10/16 12:12	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:12*	*1*
Tetrachloro-m-xylene	*633*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:12*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/06/16 07:53	10/07/16 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*45*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:27*	*1*
DCB Decachlorobiphenyl	*51*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 03:49	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 03:49	1
Arsenic	**0.0034**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Barium	**0.26**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 03:49	1
Calcium	**84**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 03:49	1
Chromium	**0.0059**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 03:49	1
Copper	**0.0029**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Iron	**8.9**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 03:49	1
Lead	**0.0036**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 03:49	1
Magnesium	**52**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:28	1
Manganese	**0.38**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Nickel	**0.0079**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 03:49	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 03:49	1

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Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 03:49	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 03:49	1
Sodium	**220**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 03:49	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Vanadium	**0.0031**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 03:49	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 03:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:00	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Barium	**0.23**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:00	1
Calcium	**96**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:00	1
Chromium	**0.0038**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:00	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Iron	**6.4**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:00	1
Magnesium	**46**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:33	1
Manganese	**0.34**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Nickel	**0.0072**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:00	1
Potassium	**67**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:00	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:00	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:00	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Vanadium	**0.0036**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:00	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:18	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:41	1
Sulfate	**21**	**B**	5.0	1.5	mg/L			10/07/16 08:41	1
Total Organic Carbon - Duplicates	**53**	**B**	2.0	0.53	mg/L			10/07/16 20:18	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			10/06/16 12:44	1
Ammonia	**79**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:03	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:26	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 23:04	10
Benzene	**370**		5.0	1.5	ug/L			10/11/16 23:04	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 23:04	10
Bromoform	<10		10	4.8	ug/L			10/11/16 23:04	10
Bromomethane	<20		20	8.0	ug/L			10/11/16 23:04	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 23:04	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 23:04	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 23:04	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 23:04	10
Chloroform	<10		10	3.7	ug/L			10/11/16 23:04	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 23:04	10
cis-1,2-Dichloroethene	**16**		10	4.1	ug/L			10/11/16 23:04	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 23:04	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 23:04	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 23:04	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			10/11/16 23:04	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 23:04	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 23:04	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 23:04	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 23:04	10
1,1-Dichloroethane	**7.6**	**J**	10	4.1	ug/L			10/11/16 23:04	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 23:04	10
Ethylbenzene	**970**		5.0	1.8	ug/L			10/11/16 23:04	10
2-Hexanone	<50		50	16	ug/L			10/11/16 23:04	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 23:04	10
Methyl acetate	<50		50	20	ug/L			10/11/16 23:04	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 23:04	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 23:04	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 23:04	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 23:04	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 23:04	10
Styrene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 23:04	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 23:04	10
Toluene	**1500**		5.0	1.5	ug/L			10/11/16 23:04	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 23:04	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 23:04	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 23:04	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 23:04	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 23:04	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 23:04	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 23:04	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 23:04	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 23:04	10

Client Sample ID: DUP-1 (10042016)

Lab Sample ID: 500-118151-2

Date Collected: 10/04/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:04*	*10*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:04*	*10*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*10/11/16 23:04*	*10*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 23:04*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7100**		100	22	ug/L			10/11/16 23:31	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 23:31*	*100*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:31*	*100*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/11/16 23:31*	*100*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/11/16 23:31*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acenaphthylene	**1.7**	**J**	3.6	0.98	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acetophenone	**20**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Anthracene	<3.6		3.6	1.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]anthracene	**0.43**	**J**	0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[g,h,i]perylene	<3.6		3.6	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-ethylhexyl) phthalate	<36		36	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:57	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloroaniline	<36	*	36	7.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
Chrysene	**0.35**	**J**	1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:57	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
Diethyl phthalate	**8.9**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dimethylphenol	**16**	**J**	36	6.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-butyl phthalate	**3.4**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrophenol	<73		73	31	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,6-Dinitrotoluene	<3.6		3.6	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		10/06/16 16:12	10/07/16 15:57	5

Client Sample ID: DUP-1 (10042016)

Lab Sample ID: 500-118151-2

Date Collected: 10/04/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
Fluorene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylnaphthalene	**8.1**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylphenol	**4.8**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
3 & 4 Methylphenol	**22**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Naphthalene	**110**		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
3-Nitroaniline	<36		36	6.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitroaniline	<36		36	6.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitrophenol	<36		36	9.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodiphenylamine	**7.7**		3.6	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenanthrene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenol	**12**	**J**	18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pyrene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzaldehyde	<150	^	150	55	ug/L		10/06/16 16:12	10/07/16 15:57	5
Caprolactam	<36		36	5.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2,4,6-Tribromophenol (Surr)	*93*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/10/16 12:31	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/10/16 12:31	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/10/16 12:31	1

Client Sample ID: DUP-1 (10042016)

Lab Sample ID: 500-118151-2

Date Collected: 10/04/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/10/16 12:31	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*50*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:31*	*1*
Tetrachloro-m-xylene	*638*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:31*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:42*	*1*
DCB Decachlorobiphenyl	*45*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:05	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:05	1
Arsenic	**0.0047**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Barium	**0.28**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:05	1
Calcium	**85**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:05	1
Chromium	**0.0052**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cobalt	**0.0023**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:05	1
Copper	**0.0040**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Iron	**9.6**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:05	1
Lead	**0.0077**		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:05	1
Magnesium	**55**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:37	1
Manganese	**0.40**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Nickel	**0.0069**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:05	1
Potassium	**77**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:05	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:05	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Vanadium	**0.0035**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:05	1
Zinc	**0.013**	**J**	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:09	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:09	1
Arsenic	**0.0047**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Barium	**0.25**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:09	1
Calcium	**89**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:09	1
Chromium	**0.0046**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:09	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Iron	**7.6**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:09	1
Magnesium	**50**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:42	1
Manganese	**0.36**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Nickel	**0.0063**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:09	1
Potassium	**71**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:09	1
Selenium	**0.0065**	**J**	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:09	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:09	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Vanadium	**0.0036**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:09	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:21	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.57**	**J**	1.0	0.18	mg/L			10/10/16 00:45	1
Sulfate	**19**	**B**	5.0	1.5	mg/L			10/07/16 08:42	1
Total Organic Carbon - Duplicates	**54**	**B**	2.0	0.53	mg/L			10/07/16 20:35	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**25**		5.0	2.5	mg/L			10/06/16 12:45	1
Ammonia	**80**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:06	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 23:58	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 23:58	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 23:58	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 23:58	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 23:58	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 23:58	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 23:58	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 23:58	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 23:58	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 23:58	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Isopropylbenzene	**0.40**	**J**	1.0	0.39	ug/L			10/11/16 23:58	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 23:58	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 23:58	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 23:58	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 23:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 23:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 23:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 23:58	1
Xylenes, Total	**0.82**	**J**	1.0	0.22	ug/L			10/11/16 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:58*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*10/11/16 23:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*71 - 127*		*10/11/16 23:58*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 23:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:59	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:59	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:59	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloroaniline	<7.4	*	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:59	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:59	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:59	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:59	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:59	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Methylnaphthalene	**0.10**	**J**	1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:59	1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
3 & 4 Methylphenol	**0.39**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:59	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:59	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzaldehyde	<30	^	30	11	ug/L		10/06/16 16:12	10/07/16 13:59	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:59	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:59	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Terphenyl-d14 (Surr)	*110*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2,4,6-Tribromophenol (Surr)	*125*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/06/16 07:53	10/06/16 16:13	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/06/16 07:53	10/06/16 16:13	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/06/16 07:53	10/06/16 16:13	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin aldehyde	<0.036		0.036	0.0074	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-Chlordane	<0.036		0.036	0.0065	ug/L		10/06/16 07:53	10/06/16 16:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/06/16 16:13	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/06/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*86*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:13*	*1*
Tetrachloro-m-xylene	*54*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/06/16 07:53	10/07/16 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*64*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:58*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:58*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.062**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:13	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:13	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Barium	**0.56**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:13	1
Calcium	**97**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:13	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:13	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Iron	**8.4**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:13	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:13	1
Magnesium	**72**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:53	1
Manganese	**0.14**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:13	1
Potassium	**37**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:13	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:13	1
Sodium	**210**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:13	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:13	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Date Received: 10/05/16 16:35

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Barium	**0.52**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:19	1
Calcium	**92**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Iron	**7.8**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:19	1
Magnesium	**68**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:57	1
Manganese	**0.13**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:19	1
Potassium	**35**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:19	1
Sodium	**200**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:49	1
Sulfate	**3.0**	**J B**	5.0	1.5	mg/L			10/07/16 08:43	1
Total Organic Carbon - Duplicates	**17**	**B**	1.0	0.27	mg/L			10/07/16 04:12	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**19**		5.0	2.5	mg/L			10/06/16 12:47	1
Ammonia	**39**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:14	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Date Received: 10/05/16 16:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/12/16 00:25	1
Benzene	**1.3**		0.50	0.15	ug/L			10/12/16 00:25	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:25	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/12/16 00:25	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:25	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
Chlorobenzene	**13**		1.0	0.39	ug/L			10/12/16 00:25	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:25	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:25	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:25	1
Cyclohexane	**1.1**		1.0	0.49	ug/L			10/12/16 00:25	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:25	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/12/16 00:25	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/12/16 00:25	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
1,4-Dichlorobenzene	**1.2**		1.0	0.36	ug/L			10/12/16 00:25	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:25	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/12/16 00:25	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Isopropylbenzene	**2.5**		1.0	0.39	ug/L			10/12/16 00:25	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:25	1
Methylcyclohexane	**0.99**	**J**	1.0	0.32	ug/L			10/12/16 00:25	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/12/16 00:25	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/12/16 00:25	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Toluene	<0.50		0.50	0.15	ug/L			10/12/16 00:25	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:25	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:25	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:25	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:25	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/12/16 00:25	1
Xylenes, Total	**0.46**	**J**	1.0	0.22	ug/L			10/12/16 00:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/12/16 00:25*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:25*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/12/16 00:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.88**		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 14:29	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 14:29	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		10/06/16 16:12	10/07/16 14:29	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloroaniline	<7.4	*	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 14:29	1
Chrysene	<0.37		0.37	0.051	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenz(a,h)anthracene	<0.22		0.22	0.038	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		10/06/16 16:12	10/07/16 14:29	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 14:29	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrophenol	<15		15	6.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,6-Dinitrotoluene	<0.74		0.74	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-octyl phthalate	<7.4		7.4	0.78	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluoranthene	<0.74		0.74	0.34	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluorene	**0.39**	**J**	0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 14:29	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Methylnaphthalene	**2.3**		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 14:29	1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
3 & 4 Methylphenol	**1.5**		1.5	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
Naphthalene	**0.30**	**J**	0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 14:29	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:29	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitrophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodiphenylamine	**0.57**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pyrene	<0.74		0.74	0.32	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzaldehyde	<30	^	30	11	ug/L		10/06/16 16:12	10/07/16 14:29	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:29	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 14:29	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Nitrobenzene-d5 (Surr)	*56*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/06/16 16:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/06/16 16:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/06/16 16:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/06/16 07:53	10/06/16 16:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/06/16 16:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/06/16 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*58*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:33*	*1*
Tetrachloro-m-xylene	*69*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*10/06/16 07:53*	*10/07/16 15:13*	*1*
DCB Decachlorobiphenyl	*54*		*30 - 150*	*10/06/16 07:53*	*10/07/16 15:13*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:24	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:24	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:24	1
Chromium	**0.0050**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:24	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Iron	**24**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:24	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:01	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:24	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:24	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:24	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:24	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:24	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:24	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:28	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:28	1
Chromium	**0.0044**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cobalt	**0.0010**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:28	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Iron	**25**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:28	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:05	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:28	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:28	1
Selenium	**0.0058**	**J**	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:28	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:28	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Vanadium	**0.0019**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:28	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:30	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:53	1
Sulfate	**2.1**	**J B**	5.0	1.5	mg/L			10/12/16 07:51	1
Total Organic Carbon - Duplicates	**27**	**F1 B**	1.0	0.27	mg/L			10/07/16 04:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**28**		5.0	2.5	mg/L			10/06/16 12:48	1
Ammonia	**78**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:17	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**41**		5.0	1.7	ug/L			10/12/16 00:52	1
Benzene	**6.6**		0.50	0.15	ug/L			10/12/16 00:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:52	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/12/16 00:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:52	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
cis-1,2-Dichloroethene	**5.3**		1.0	0.41	ug/L			10/12/16 00:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/12/16 00:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichlorobenzene	**2.6**		1.0	0.33	ug/L			10/12/16 00:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			10/12/16 00:52	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:52	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 00:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
Ethylbenzene	**63**		0.50	0.18	ug/L			10/12/16 00:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			10/12/16 00:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:52	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Methyl Ethyl Ketone	**19**		5.0	2.1	ug/L			10/12/16 00:52	1
methyl isobutyl ketone	**44**		5.0	2.2	ug/L			10/12/16 00:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Toluene	**160**		0.50	0.15	ug/L			10/12/16 00:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:52	1
Vinyl chloride	**4.4**		0.50	0.20	ug/L			10/12/16 00:52	1
Xylenes, Total	**240**		1.0	0.22	ug/L			10/12/16 00:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*10/12/16 00:52*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:52*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/12/16 00:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acetophenone	**7.2**	**J**	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]pyrene	<1.5	*	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[b]fluoranthene	<1.5	*	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[g,h,i]perylene	<7.4	*	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[k]fluoranthene	<1.5	*	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloroaniline	<74	*	74	15	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenz(a,h)anthracene	<2.2	*	2.2	0.37	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dimethylphenol	**79**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
4,6-Dinitro-2-methylphenol	<150		150	44	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,6-Dinitrotoluene	<7.4		7.4	0.54	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluoranthene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
Indeno[1,2,3-cd]pyrene	<1.5	*	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:27	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Methylnaphthalene	**2.2**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:27	10

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**21**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
3 & 4 Methylphenol	**160**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Naphthalene	**14**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:27	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitrophenol	<74		74	18	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodiphenylamine	**3.2**	**J**	7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pyrene	<7.4		7.4	3.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzaldehyde	<300	^	300	110	ug/L		10/06/16 16:12	10/07/16 16:27	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:27	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2-Fluorophenol (Surr)	*74*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Phenol-d5 (Surr)	*69*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:36	10/07/16 20:44	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:36	10/07/16 20:44	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:36	10/07/16 20:44	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan II	<0.036		0.036	0.0026	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:36	10/07/16 20:44	1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 20:44	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/07/16 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*109*		*30 - 143*	*10/07/16 10:36*	*10/07/16 20:44*	*1*
Tetrachloro-m-xylene	*226*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 20:44*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1242	**5.3**		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:36	10/17/16 12:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*34*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:19*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.55**	**J**	1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:31	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:31	1
Arsenic	**0.030**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Barium	**0.37**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:31	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:31	1
Chromium	**0.19**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cobalt	**0.036**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:31	1
Copper	**0.016**	**J**	0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Iron	**2.7**	**^ B**	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:31	1
Lead	**0.22**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:31	1
Magnesium	**28**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Nickel	**0.14**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:31	1
Potassium	**650**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:31	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:31	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:31	1
Sodium	**3200**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:31	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Vanadium	**0.065**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:31	1
Zinc	**0.20**		0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:36	1
Arsenic	**0.028**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Barium	**0.35**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:36	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:36	1
Chromium	**0.18**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cobalt	**0.038**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:36	1
Copper	<0.050		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Iron	**2.1**	**^ B**	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:36	1
Lead	**0.029**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:36	1
Magnesium	**29**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:14	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Nickel	**0.15**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:36	1
Potassium	**690**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:36	1
Selenium	**0.039**	**J**	0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:36	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:36	1
Sodium	**3300**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:36	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Vanadium	**0.053**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:36	1
Zinc	**0.056**	**J**	0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00023**		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			10/10/16 00:58	1
Sulfate	**12**	**J B**	25	7.4	mg/L			10/12/16 07:46	5
Total Organic Carbon - Duplicates	**530**	**B**	20	5.3	mg/L			10/07/16 20:51	20
Nitrogen, Nitrate	**0.053**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.0**		5.0	2.5	mg/L			10/06/16 12:49	1
Ammonia	**790**		50	25	mg/L		10/12/16 19:17	10/13/16 16:08	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:28	1
Nitrogen, Nitrate Nitrite	**0.053**	**J**	0.10	0.035	mg/L			10/14/16 00:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**44**		5.0	1.7	ug/L			10/12/16 01:45	1
Benzene	**7.6**		0.50	0.15	ug/L			10/12/16 01:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 01:45	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/12/16 01:45	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 01:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 01:45	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
cis-1,2-Dichloroethene	**5.5**		1.0	0.41	ug/L			10/12/16 01:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 01:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/12/16 01:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichlorobenzene	**3.2**		1.0	0.33	ug/L			10/12/16 01:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
1,4-Dichlorobenzene	**18**		1.0	0.36	ug/L			10/12/16 01:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 01:45	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 01:45	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 01:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
Ethylbenzene	**78**		0.50	0.18	ug/L			10/12/16 01:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Isopropylbenzene	**5.1**		1.0	0.39	ug/L			10/12/16 01:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 01:45	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Methyl Ethyl Ketone	**20**		5.0	2.1	ug/L			10/12/16 01:45	1
methyl isobutyl ketone	**49**		5.0	2.2	ug/L			10/12/16 01:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Toluene	**200**		0.50	0.15	ug/L			10/12/16 01:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 01:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 01:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 01:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 01:45	1
Vinyl chloride	**5.3**		0.50	0.20	ug/L			10/12/16 01:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*10/12/16 01:45*	*1*
Dibromofluoromethane	*91*		*70 - 120*		*10/12/16 01:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/12/16 01:45*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/12/16 01:45*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**220**		10	2.2	ug/L			10/12/16 02:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*		*10/12/16 02:12*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*10/12/16 02:12*	*10*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/12/16 02:12*	*10*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/12/16 02:12*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acetophenone	**6.6**	**J**	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]pyrene	<1.5	*	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[b]fluoranthene	<1.5	*	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[g,h,i]perylene	<7.4	*	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[k]fluoranthene	<1.5	*	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Butyl benzyl phthalate	<15		15	3.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloroaniline	<74	*	74	15	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenz(a,h)anthracene	<2.2	*	2.2	0.38	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dimethylphenol	**77**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
4,6-Dinitro-2-methylphenol	<150		150	44	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrophenol	<150		150	64	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,6-Dinitrotoluene	<7.4		7.4	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:56	10

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<7.4		7.4	3.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Indeno[1,2,3-cd]pyrene	<1.5	*	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylnaphthalene	**2.1**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylphenol	**17**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
3 & 4 Methylphenol	**150**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Naphthalene	**13**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:56	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitrophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodiphenylamine	<7.4		7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pyrene	<7.4		7.4	3.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzaldehyde	<300	^	300	110	ug/L		10/06/16 16:12	10/07/16 16:56	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:56	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2-Fluorophenol (Surr)	*62*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Nitrobenzene-d5 (Surr)	*45*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Phenol-d5 (Surr)	*63*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Terphenyl-d14 (Surr)	*116*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/07/16 10:36	10/07/16 21:22	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/07/16 10:36	10/07/16 21:22	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:36	10/07/16 21:22	1

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 21:22	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/07/16 21:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*21*	*X*	*30 - 143*	*10/07/16 10:36*	*10/07/16 21:22*	*1*
Tetrachloro-m-xylene	*245*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 21:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1242	**4.9**		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:36	10/17/16 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*30*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:34*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:34*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.56**	**J**	1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:04	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:04	1
Arsenic	**0.019**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Barium	**0.40**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:04	1
Calcium	**12**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:04	1
Chromium	**0.20**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:04	1
Copper	**0.022**	**J**	0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Iron	**2.6**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:04	1
Lead	**0.24**		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:04	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:04	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:04	1
Potassium	**700**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:04	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:04	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:04	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Vanadium	**0.064**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:04	1
Zinc	**0.31**		0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:09	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:09	1
Arsenic	**0.022**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Barium	**0.37**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:09	1
Calcium	**11**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:09	1
Chromium	**0.19**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:09	1
Copper	<0.050		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Iron	**2.4**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:09	1
Lead	<0.025		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:09	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:09	1
Potassium	**710**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:09	1
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:09	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:09	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:09	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Vanadium	**0.058**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:09	1
Zinc	**0.051**	**J**	0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00018**	**J**	0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.6**		1.0	0.18	mg/L			10/10/16 01:02	1
Sulfate	<50		50	15	mg/L			10/12/16 07:49	10
Total Organic Carbon - Duplicates	**520**	**B**	20	5.3	mg/L			10/07/16 21:27	20
Nitrogen, Nitrate	**0.058**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			10/06/16 12:50	1
Ammonia	**780**		50	25	mg/L		10/12/16 19:17	10/13/16 16:15	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:29	1
Nitrogen, Nitrate Nitrite	**0.058**	**J**	0.10	0.035	mg/L			10/14/16 00:22	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

GC/MS VOA

Analysis Batch: 355629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8260B	
500-118151-1 - DL	MW-13-GW-10042016	Total/NA	Water	8260B	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8260B	
500-118151-2 - DL	DUP-1 (10042016)	Total/NA	Water	8260B	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8260B	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8260B	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8260B	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8260B	
500-118151-6 - DL	DUP-2 (10052016)	Total/NA	Water	8260B	
MB 500-355629/6	Method Blank	Total/NA	Water	8260B	
LCS 500-355629/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 354970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	3510C	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	3510C	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	3510C	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	3510C	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	3510C	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	3510C	
MB 500-354970/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8270D	354970
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8270D	354970
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8270D	354970
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8270D	354970
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8270D	354970
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8270D	354970
MB 500-354970/1-A	Method Blank	Total/NA	Water	8270D	354970
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	8270D	354970
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	354970

GC Semi VOA

Prep Batch: 354838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	3510C	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	3510C	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	3510C	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	3510C	
MB 500-354838/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354838/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-354838/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354838/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 354838 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 500-354838/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 354874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8081B	354838
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8081B	354838
MB 500-354838/1-A	Method Blank	Total/NA	Water	8081B	354838
LCS 500-354838/2-A	Lab Control Sample	Total/NA	Water	8081B	354838
LCSD 500-354838/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	354838

Analysis Batch: 355065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8082A	354838
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8082A	354838
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8082A	354838
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8082A	354838
MB 500-354838/1-A	Method Blank	Total/NA	Water	8082A	354838
LCS 500-354838/4-A	Lab Control Sample	Total/NA	Water	8082A	354838
LCSD 500-354838/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	354838

Prep Batch: 355087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	3510C	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	3510C	
MB 500-355087/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8081B	355087
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8081B	355087
MB 500-355087/1-A	Method Blank	Total/NA	Water	8081B	355087
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	8081B	355087
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	355087

Analysis Batch: 355347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-355087/1-A	Method Blank	Total/NA	Water	8082A	355087
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	8082A	355087
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	355087

Analysis Batch: 355366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8081B	354838
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8081B	354838

GC Semi VOA (Continued)

Analysis Batch: 356515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8082A	355087
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8082A	355087

Metals

Prep Batch: 355614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	3010A	
500-118151-1	MW-13-GW-10042016	Total/NA	Water	3010A	
500-118151-2	DUP-1 (10042016)	Dissolved	Water	3010A	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	3010A	
500-118151-3	MW-08-GW-10052016	Dissolved	Water	3010A	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	3010A	
500-118151-4	MW-09-GW-10052016	Dissolved	Water	3010A	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	3010A	
500-118151-5	MW-06-GW-10052016	Dissolved	Water	3010A	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	3010A	
MB 500-355614/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355614/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 355734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-6	DUP-2 (10052016)	Dissolved	Water	3010A	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	3010A	
MB 500-355734/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355734/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 355866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	7470A	
500-118151-1	MW-13-GW-10042016	Total/NA	Water	7470A	
500-118151-2	DUP-1 (10042016)	Dissolved	Water	7470A	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	7470A	
500-118151-3	MW-08-GW-10052016	Dissolved	Water	7470A	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	7470A	
500-118151-4	MW-09-GW-10052016	Dissolved	Water	7470A	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	7470A	
500-118151-5	MW-06-GW-10052016	Dissolved	Water	7470A	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	7470A	
500-118151-6	DUP-2 (10052016)	Dissolved	Water	7470A	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	7470A	
MB 500-355866/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-355866/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 356007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	7470A	355866
500-118151-1	MW-13-GW-10042016	Total/NA	Water	7470A	355866
500-118151-2	DUP-1 (10042016)	Dissolved	Water	7470A	355866
500-118151-2	DUP-1 (10042016)	Total/NA	Water	7470A	355866

Metals (Continued)

Analysis Batch: 356007 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-3	MW-08-GW-10052016	Dissolved	Water	7470A	355866
500-118151-3	MW-08-GW-10052016	Total/NA	Water	7470A	355866
500-118151-4	MW-09-GW-10052016	Dissolved	Water	7470A	355866
500-118151-4	MW-09-GW-10052016	Total/NA	Water	7470A	355866
500-118151-5	MW-06-GW-10052016	Dissolved	Water	7470A	355866
500-118151-5	MW-06-GW-10052016	Total/NA	Water	7470A	355866
500-118151-6	DUP-2 (10052016)	Dissolved	Water	7470A	355866
500-118151-6	DUP-2 (10052016)	Total/NA	Water	7470A	355866
MB 500-355866/12-A	Method Blank	Total/NA	Water	7470A	355866
LCS 500-355866/13-A	Lab Control Sample	Total/NA	Water	7470A	355866

Analysis Batch: 356190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-6	DUP-2 (10052016)	Dissolved	Water	6010C	355734
500-118151-6	DUP-2 (10052016)	Total/NA	Water	6010C	355734
MB 500-355734/1-A	Method Blank	Total/NA	Water	6010C	355734
LCS 500-355734/2-A	Lab Control Sample	Total/NA	Water	6010C	355734

Analysis Batch: 356195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	6010C	355614
500-118151-1	MW-13-GW-10042016	Total/NA	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Dissolved	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Total/NA	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Dissolved	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Total/NA	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Dissolved	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Total/NA	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Dissolved	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Total/NA	Water	6010C	355614
MB 500-355614/1-A	Method Blank	Total/NA	Water	6010C	355614
LCS 500-355614/2-A	Lab Control Sample	Total/NA	Water	6010C	355614

Analysis Batch: 356352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	6010C	355614
500-118151-1	MW-13-GW-10042016	Total/NA	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Dissolved	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Total/NA	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Dissolved	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Total/NA	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Dissolved	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Total/NA	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Dissolved	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Total/NA	Water	6010C	355614
MB 500-355614/1-A	Method Blank	Total/NA	Water	6010C	355614
LCS 500-355614/2-A	Lab Control Sample	Total/NA	Water	6010C	355614

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

General Chemistry

Analysis Batch: 354929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 2540D	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 2540D	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 2540D	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 2540D	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 2540D	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 2540D	
MB 500-354929/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-354929/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 355060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	9038	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	9038	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	9038	
MB 500-355060/3	Method Blank	Total/NA	Water	9038	
LCS 500-355060/4	Lab Control Sample	Total/NA	Water	9038	

Analysis Batch: 355160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-3	MW-08-GW-10052016	Total/NA	Water	9060A	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	9060A	
MB 500-355160/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355160/5	Lab Control Sample	Total/NA	Water	9060A	
500-118151-4 MS	MW-09-GW-10052016	Total/NA	Water	9060A	
500-118151-4 MSD	MW-09-GW-10052016	Total/NA	Water	9060A	

Analysis Batch: 355173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NO2 B	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NO2 B	
MB 500-355173/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-355173/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	
500-118151-1 MS	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
500-118151-1 MSD	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 355288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	9034	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	9034	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	9034	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	9034	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	9034	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	9034	
MB 500-355288/1	Method Blank	Total/NA	Water	9034	
LCS 500-355288/2	Lab Control Sample	Total/NA	Water	9034	

General Chemistry (Continued)

Analysis Batch: 355462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	9060A	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	9060A	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	9060A	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	9060A	
MB 500-355462/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355462/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 355715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-4	MW-09-GW-10052016	Total/NA	Water	9038	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	9038	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	9038	
MB 500-355715/3	Method Blank	Total/NA	Water	9038	
LCS 500-355715/4	Lab Control Sample	Total/NA	Water	9038	

Prep Batch: 355872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NH3 B	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NH3 B	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NH3 B	
MB 500-355872/14-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-355872/15-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 356043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NH3 G	355872
MB 500-355872/14-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	355872
LCS 500-355872/15-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	355872

Analysis Batch: 356095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NH3 G	355872
MB 500-355872/14-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	355872
LCS 500-355872/15-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	355872

Analysis Batch: 356272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO3 F	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NO3 F	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NO3 F	
MB 500-356272/21	Method Blank	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 356272 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-356272/63	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 356421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	Nitrate by calc	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	Nitrate by calc	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	Nitrate by calc	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	Nitrate by calc	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	Nitrate by calc	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	Nitrate by calc	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-118151-1	MW-13-GW-10042016	94	89	85	102
500-118151-1 - DL	MW-13-GW-10042016	94	92	83	98
500-118151-2 - DL	DUP-1 (10042016)	96	91	86	99
500-118151-2	DUP-1 (10042016)	94	91	85	97
500-118151-3	MW-08-GW-10052016	94	90	83	98
500-118151-4	MW-09-GW-10052016	94	92	86	98
500-118151-5	MW-06-GW-10052016	97	92	86	97
500-118151-6	DUP-2 (10052016)	97	91	84	97
500-118151-6 - DL	DUP-2 (10052016)	92	89	84	98
LCS 500-355629/4	Lab Control Sample	93	96	86	101
MB 500-355629/6	Method Blank	96	93	87	97

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-118151-1	MW-13-GW-10042016	92	61	79	62	114	134
500-118151-2	DUP-1 (10042016)	70	49	59	47	81	93
500-118151-3	MW-08-GW-10052016	67	49	55	39	110	125
500-118151-4	MW-09-GW-10052016	62	51	56	39	97	104
500-118151-5	MW-06-GW-10052016	60	74	68	69	131	88
500-118151-6	DUP-2 (10052016)	54	62	45	63	116	79
LCS 500-354970/2-A	Lab Control Sample	100	91	101	68	122	124
LCSD 500-354970/3-A	Lab Control Sample Dup	95	87	99	69	116	121
MB 500-354970/1-A	Method Blank	90	77	87	55	120	99

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118151-1	MW-13-GW-10042016	64	633 X
500-118151-2	DUP-1 (10042016)	50	638 X

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118151-3	MW-08-GW-10052016	86	54
500-118151-4	MW-09-GW-10052016	58	69
500-118151-5	MW-06-GW-10052016	109	226 X
500-118151-6	DUP-2 (10052016)	21 X	245 X
LCS 500-354838/2-A	Lab Control Sample	82	65
LCS 500-355087/2-A	Lab Control Sample	109	84
LCSD 500-354838/3-A	Lab Control Sample Dup	98	63
LCSD 500-355087/3-A	Lab Control Sample Dup	103	86
MB 500-354838/1-A	Method Blank	83	62
MB 500-355087/1-A	Method Blank	87	83

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-118151-1	MW-13-GW-10042016		45		51
500-118151-2	DUP-1 (10042016)		88		45
500-118151-3	MW-08-GW-10052016		64		79
500-118151-4	MW-09-GW-10052016		84		54
500-118151-5	MW-06-GW-10052016	34	34	13 X	14 X
500-118151-6	DUP-2 (10052016)	38	30	12 X	13 X
LCS 500-354838/4-A	Lab Control Sample		69		81
LCS 500-355087/4-A	Lab Control Sample	88	80	95	91
LCSD 500-354838/5-A	Lab Control Sample Dup		65		97
LCSD 500-355087/5-A	Lab Control Sample Dup	72	69	96	94
MB 500-354838/1-A	Method Blank		64		90
MB 500-355087/1-A	Method Blank	91	82	119	110

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-355629/6
Matrix: Water
Analysis Batch: 355629

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 21:44	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 21:44	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 21:44	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 21:44	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 21:44	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 21:44	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 21:44	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 21:44	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 21:44	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 21:44	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 21:44	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 21:44	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 21:44	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 21:44	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 21:44	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 21:44	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 21:44	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 21:44	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 21:44	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 21:44	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 21:44	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 21:44	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 21:44	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 21:44	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 21:44	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 21:44	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 21:44	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 21:44	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 21:44	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 21:44	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 21:44	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 21:44	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 21:44	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 21:44	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 21:44	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 21:44	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 21:44	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 21:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 21:44	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 21:44	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 21:44	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		10/11/16 21:44	1
Dibromofluoromethane	93		70 - 120		10/11/16 21:44	1
1,2-Dichloroethane-d4 (Surr)	87		71 - 127		10/11/16 21:44	1
Toluene-d8 (Surr)	97		75 - 120		10/11/16 21:44	1

Lab Sample ID: LCS 500-355629/4
Matrix: Water
Analysis Batch: 355629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.0		ug/L		78	37 - 141
Benzene	50.0	43.7		ug/L		87	70 - 125
Bromodichloromethane	50.0	38.9		ug/L		78	70 - 125
Bromoform	50.0	38.6		ug/L		77	54 - 128
Bromomethane	50.0	37.1		ug/L		74	40 - 150
Carbon disulfide	50.0	44.1		ug/L		88	68 - 125
Carbon tetrachloride	50.0	42.5		ug/L		85	70 - 125
Chlorobenzene	50.0	44.6		ug/L		89	70 - 125
Chloroethane	50.0	37.7		ug/L		75	60 - 139
Chloroform	50.0	43.0		ug/L		86	70 - 125
Chloromethane	50.0	50.2		ug/L		100	60 - 140
cis-1,2-Dichloroethene	50.0	45.6		ug/L		91	70 - 125
cis-1,3-Dichloropropene	50.0	40.6		ug/L		81	70 - 125
Cyclohexane	50.0	48.1		ug/L		96	56 - 149
Dibromochloromethane	50.0	39.1		ug/L		78	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	34.5		ug/L		69	51 - 125
1,2-Dibromoethane	50.0	42.9		ug/L		86	70 - 125
1,2-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 125
1,3-Dichlorobenzene	50.0	45.1		ug/L		90	70 - 125
1,4-Dichlorobenzene	50.0	44.1		ug/L		88	70 - 125
Dichlorodifluoromethane	50.0	47.7		ug/L		95	51 - 140
1,1-Dichloroethane	50.0	42.8		ug/L		86	70 - 125
1,2-Dichloroethane	50.0	39.9		ug/L		80	70 - 125
1,1-Dichloroethene	50.0	48.1		ug/L		96	70 - 125
1,2-Dichloropropane	50.0	43.5		ug/L		87	70 - 125
Ethylbenzene	50.0	43.3		ug/L		87	70 - 125
2-Hexanone	50.0	38.8		ug/L		78	49 - 139
Isopropylbenzene	50.0	42.9		ug/L		86	70 - 125
Methyl acetate	250	261		ug/L		105	60 - 148
Methylcyclohexane	50.0	46.0		ug/L		92	70 - 127
Methylene Chloride	50.0	45.5		ug/L		91	68 - 125
Methyl Ethyl Ketone	50.0	36.7		ug/L		73	52 - 142
methyl isobutyl ketone	50.0	40.5		ug/L		81	47 - 140
Methyl tert-butyl ether	50.0	40.7		ug/L		81	67 - 125
Styrene	50.0	41.7		ug/L		83	70 - 125
1,1,2,2-Tetrachloroethane	50.0	39.5		ug/L		79	68 - 125
Tetrachloroethene	50.0	49.5		ug/L		99	70 - 125
Toluene	50.0	44.0		ug/L		88	70 - 125
trans-1,2-Dichloroethene	50.0	46.2		ug/L		92	70 - 125
trans-1,3-Dichloropropene	50.0	38.1		ug/L		76	70 - 125
1,2,4-Trichlorobenzene	50.0	47.0		ug/L		94	64 - 126
1,1,1-Trichloroethane	50.0	42.2		ug/L		84	70 - 125
1,1,2-Trichloroethane	50.0	43.4		ug/L		87	70 - 125
Trichloroethene	50.0	49.8		ug/L		100	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-355629/4
Matrix: Water
Analysis Batch: 355629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	43.9		ug/L		88	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.7		ug/L		95	57 - 141
Vinyl chloride	50.0	43.9		ug/L		88	70 - 126
Xylenes, Total	100	82.8		ug/L		83	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*
Toluene-d8 (Surr)	*101*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acetophenone	<4.0		4.0	0.53	ug/L		10/06/16 16:12	10/07/16 12:31	1
Anthracene	<0.80		0.80	0.27	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		10/06/16 16:12	10/07/16 12:31	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		10/06/16 16:12	10/07/16 12:31	1
Carbazole	<4.0		4.0	0.28	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		10/06/16 16:12	10/07/16 12:31	1
Chrysene	<0.40		0.40	0.055	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		10/06/16 16:12	10/07/16 12:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluoranthene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluorene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		10/06/16 16:12	10/07/16 12:31	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		10/06/16 16:12	10/07/16 12:31	1
Isophorone	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Naphthalene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		10/06/16 16:12	10/07/16 12:31	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		10/06/16 16:12	10/07/16 12:31	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Nitrophenol	<16		16	5.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pentachlorophenol	<16		16	3.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenanthrene	<0.80		0.80	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenol	<4.0		4.0	0.54	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pyrene	<0.80		0.80	0.34	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzaldehyde	<32	^	32	12	ug/L		10/06/16 16:12	10/07/16 12:31	1
Caprolactam	<8.0		8.0	1.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Atrazine	<4.0		4.0	0.50	ug/L		10/06/16 16:12	10/07/16 12:31	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*30 - 123*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2-Fluorophenol (Surr)	*77*		*30 - 110*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Phenol-d5 (Surr)	*55*		*20 - 100*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Terphenyl-d14 (Surr)	*120*		*42 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	30.5		ug/L		95	41 - 112
Acenaphthylene	32.0	29.5		ug/L		92	48 - 110
Acetophenone	32.0	29.6		ug/L		92	54 - 116
Anthracene	32.0	32.2		ug/L		100	65 - 118
Benzo[a]anthracene	32.0	34.7		ug/L		108	69 - 121
Benzo[a]pyrene	32.0	35.5		ug/L		111	69 - 130
Benzo[b]fluoranthene	32.0	37.2		ug/L		116	66 - 133
Benzo[g,h,i]perylene	32.0	35.3		ug/L		110	47 - 145
Benzo[k]fluoranthene	32.0	36.2		ug/L		113	64 - 134
Bis(2-chloroethoxy)methane	32.0	31.3		ug/L		98	55 - 115
Bis(2-chloroethyl)ether	32.0	28.4		ug/L		89	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	33.9		ug/L		106	60 - 132
4-Bromophenyl phenyl ether	32.0	33.6		ug/L		105	60 - 124
Butyl benzyl phthalate	32.0	34.1		ug/L		107	63 - 127
Carbazole	32.0	35.7		ug/L		112	71 - 132
4-Chloroaniline	32.0	24.0		ug/L		75	15 - 125
4-Chloro-3-methylphenol	32.0	34.7		ug/L		109	63 - 120
2-Chloronaphthalene	32.0	28.9		ug/L		90	38 - 110
2-Chlorophenol	32.0	29.6		ug/L		93	49 - 110
4-Chlorophenyl phenyl ether	32.0	33.1		ug/L		103	55 - 115
Chrysene	32.0	32.9		ug/L		103	70 - 126
Dibenz(a,h)anthracene	32.0	35.1		ug/L		110	59 - 145
Dibenzofuran	32.0	32.2		ug/L		101	54 - 111
3,3'-Dichlorobenzidine	32.0	37.7		ug/L		118	57 - 145
2,4-Dichlorophenol	32.0	36.0		ug/L		112	53 - 123
Diethyl phthalate	32.0	33.6		ug/L		105	64 - 126
2,4-Dimethylphenol	32.0	25.5		ug/L		80	42 - 115
Dimethyl phthalate	32.0	33.3		ug/L		104	66 - 120
Di-n-butyl phthalate	32.0	33.8		ug/L		106	67 - 125
4,6-Dinitro-2-methylphenol	64.0	59.9		ug/L		94	34 - 152
2,4-Dinitrophenol	64.0	53.1		ug/L		83	20 - 140
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131
2,6-Dinitrotoluene	32.0	33.3		ug/L		104	66 - 125
Di-n-octyl phthalate	32.0	34.8		ug/L		109	63 - 133
Fluoranthene	32.0	33.8		ug/L		106	68 - 127
Fluorene	32.0	32.0		ug/L		100	54 - 113
Hexachlorobenzene	32.0	32.3		ug/L		101	63 - 127
Hexachlorobutadiene	32.0	20.0		ug/L		63	20 - 110
Hexachlorocyclopentadiene	32.0	20.6		ug/L		65	10 - 110
Hexachloroethane	32.0	18.5		ug/L		58	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	35.0		ug/L		109	52 - 150
Isophorone	32.0	28.8		ug/L		90	55 - 120
2-Methylnaphthalene	32.0	24.9		ug/L		78	32 - 110
2-Methylphenol	32.0	29.9		ug/L		93	49 - 113
3 & 4 Methylphenol	32.0	30.9		ug/L		96	49 - 114
Naphthalene	32.0	24.1		ug/L		75	32 - 110
2-Nitroaniline	32.0	34.1		ug/L		107	61 - 126
3-Nitroaniline	32.0	31.8		ug/L		99	42 - 134

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitroaniline	32.0	31.8		ug/L		99	40 - 142
Nitrobenzene	32.0	31.3		ug/L		98	49 - 116
2-Nitrophenol	32.0	30.5		ug/L		95	51 - 120
4-Nitrophenol	64.0	47.9		ug/L		75	21 - 110
N-Nitrosodi-n-propylamine	32.0	30.1		ug/L		94	52 - 122
N-Nitrosodiphenylamine	32.0	30.9		ug/L		96	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	27.4		ug/L		86	34 - 110
Pentachlorophenol	64.0	54.3		ug/L		85	29 - 138
Phenanthrene	32.0	32.7		ug/L		102	63 - 121
Phenol	32.0	20.9		ug/L		65	33 - 100
Pyrene	32.0	32.9		ug/L		103	65 - 122
2,4,5-Trichlorophenol	32.0	34.7		ug/L		109	63 - 121
2,4,6-Trichlorophenol	32.0	31.7		ug/L		99	61 - 120
Caprolactam	32.0	18.4		ug/L		58	25 - 100
Atrazine	32.0	33.0		ug/L		103	57 - 128
1,1'-Biphenyl	32.0	30.1		ug/L		94	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*100*		*30 - 123*
2-Fluorophenol (Surr)	*91*		*30 - 110*
Nitrobenzene-d5 (Surr)	*101*		*33 - 139*
Phenol-d5 (Surr)	*68*		*20 - 100*
Terphenyl-d14 (Surr)	*122*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*124*		*30 - 150*

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	30.6		ug/L		96	41 - 112	0	20
Acenaphthylene	32.0	29.8		ug/L		93	48 - 110	1	20
Acetophenone	32.0	30.0		ug/L		94	54 - 116	1	20
Anthracene	32.0	32.1		ug/L		100	65 - 118	0	20
Benzo[a]anthracene	32.0	34.1		ug/L		107	69 - 121	2	20
Benzo[a]pyrene	32.0	34.7		ug/L		108	69 - 130	2	20
Benzo[b]fluoranthene	32.0	36.5		ug/L		114	66 - 133	2	20
Benzo[g,h,i]perylene	32.0	34.2		ug/L		107	47 - 145	3	20
Benzo[k]fluoranthene	32.0	35.3		ug/L		110	64 - 134	2	20
Bis(2-chloroethoxy)methane	32.0	31.6		ug/L		99	55 - 115	1	20
Bis(2-chloroethyl)ether	32.0	28.3		ug/L		89	46 - 110	0	20
Bis(2-ethylhexyl) phthalate	32.0	33.2		ug/L		104	60 - 132	2	20
4-Bromophenyl phenyl ether	32.0	33.5		ug/L		105	60 - 124	1	20
Butyl benzyl phthalate	32.0	33.6		ug/L		105	63 - 127	2	20
Carbazole	32.0	35.6		ug/L		111	71 - 132	0	20
4-Chloroaniline	32.0	31.4	*	ug/L		98	15 - 125	27	20
4-Chloro-3-methylphenol	32.0	35.4		ug/L		111	63 - 120	2	20
2-Chloronaphthalene	32.0	29.4		ug/L		92	38 - 110	2	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chlorophenol	32.0	29.7		ug/L		93	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	32.8		ug/L		103	55 - 115	1	20
Chrysene	32.0	32.4		ug/L		101	70 - 126	1	20
Dibenz(a,h)anthracene	32.0	34.2		ug/L		107	59 - 145	3	20
Dibenzofuran	32.0	32.1		ug/L		100	54 - 111	0	20
3,3'-Dichlorobenzidine	32.0	38.7		ug/L		121	57 - 145	2	20
2,4-Dichlorophenol	32.0	36.1		ug/L		113	53 - 123	0	20
Diethyl phthalate	32.0	33.3		ug/L		104	64 - 126	1	20
2,4-Dimethylphenol	32.0	26.3		ug/L		82	42 - 115	3	20
Dimethyl phthalate	32.0	33.5		ug/L		105	66 - 120	1	20
Di-n-butyl phthalate	32.0	33.2		ug/L		104	67 - 125	2	20
4,6-Dinitro-2-methylphenol	64.0	62.6		ug/L		98	34 - 152	4	20
2,4-Dinitrophenol	64.0	58.4		ug/L		91	20 - 140	10	20
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131	0	20
2,6-Dinitrotoluene	32.0	33.8		ug/L		105	66 - 125	1	20
Di-n-octyl phthalate	32.0	34.5		ug/L		108	63 - 133	1	20
Fluoranthene	32.0	33.8		ug/L		106	68 - 127	0	20
Fluorene	32.0	31.5		ug/L		99	54 - 113	2	20
Hexachlorobenzene	32.0	32.5		ug/L		102	63 - 127	0	20
Hexachlorobutadiene	32.0	23.6		ug/L		74	20 - 110	16	20
Hexachlorocyclopentadiene	32.0	23.1		ug/L		72	10 - 110	11	20
Hexachloroethane	32.0	22.1		ug/L		69	20 - 110	18	20
Indeno[1,2,3-cd]pyrene	32.0	34.1		ug/L		107	52 - 150	3	20
Isophorone	32.0	29.6		ug/L		93	55 - 120	3	20
2-Methylnaphthalene	32.0	26.4		ug/L		82	32 - 110	6	20
2-Methylphenol	32.0	31.4		ug/L		98	49 - 113	5	20
3 & 4 Methylphenol	32.0	31.4		ug/L		98	49 - 114	2	20
Naphthalene	32.0	26.4		ug/L		83	32 - 110	9	20
2-Nitroaniline	32.0	34.1		ug/L		106	61 - 126	0	20
3-Nitroaniline	32.0	31.9		ug/L		100	42 - 134	0	20
4-Nitroaniline	32.0	31.5		ug/L		98	40 - 142	1	20
Nitrobenzene	32.0	31.4		ug/L		98	49 - 116	0	20
2-Nitrophenol	32.0	30.7		ug/L		96	51 - 120	1	20
4-Nitrophenol	64.0	47.0		ug/L		73	21 - 110	2	20
N-Nitrosodi-n-propylamine	32.0	30.7		ug/L		96	52 - 122	2	20
N-Nitrosodiphenylamine	32.0	33.0		ug/L		103	63 - 117	7	20
2,2'-oxybis[1-chloropropane]	32.0	27.0		ug/L		84	34 - 110	1	20
Pentachlorophenol	64.0	51.6		ug/L		81	29 - 138	5	20
Phenanthrene	32.0	32.2		ug/L		101	63 - 121	2	20
Phenol	32.0	22.1		ug/L		69	33 - 100	6	20
Pyrene	32.0	32.5		ug/L		102	65 - 122	1	20
2,4,5-Trichlorophenol	32.0	35.7		ug/L		112	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	33.1		ug/L		103	61 - 120	4	20
Caprolactam	32.0	17.3		ug/L		54	25 - 100	6	20
Atrazine	32.0	33.0		ug/L		103	57 - 128	0	20
1,1'-Biphenyl	32.0	30.2		ug/L		94	42 - 110	0	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*95*		*30 - 123*
2-Fluorophenol (Surr)	*87*		*30 - 110*
Nitrobenzene-d5 (Surr)	*99*		*33 - 139*
Phenol-d5 (Surr)	*69*		*20 - 100*
Terphenyl-d14 (Surr)	*116*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*121*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-354838/1-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354838

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		10/06/16 07:30	10/06/16 14:38	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		10/06/16 07:30	10/06/16 14:38	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		10/06/16 07:30	10/06/16 14:38	1
beta-BHC	<0.040		0.040	0.010	ug/L		10/06/16 07:30	10/06/16 14:38	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		10/06/16 07:30	10/06/16 14:38	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		10/06/16 07:30	10/06/16 14:38	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		10/06/16 07:30	10/06/16 14:38	1
delta-BHC	<0.040		0.040	0.010	ug/L		10/06/16 07:30	10/06/16 14:38	1
Dieldrin	<0.040		0.040	0.013	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endrin	<0.040		0.040	0.014	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endrin ketone	<0.040		0.040	0.017	ug/L		10/06/16 07:30	10/06/16 14:38	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		10/06/16 07:30	10/06/16 14:38	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		10/06/16 07:30	10/06/16 14:38	1
Heptachlor	<0.040		0.040	0.014	ug/L		10/06/16 07:30	10/06/16 14:38	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		10/06/16 07:30	10/06/16 14:38	1
Methoxychlor	<0.080		0.080	0.023	ug/L		10/06/16 07:30	10/06/16 14:38	1
Toxaphene	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/06/16 14:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*83*		*30 - 143*	*10/06/16 07:30*	*10/06/16 14:38*	*1*
Tetrachloro-m-xylene	*62*		*30 - 120*	*10/06/16 07:30*	*10/06/16 14:38*	*1*

Lab Sample ID: LCS 500-354838/2-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.221		ug/L		69	40 - 130
alpha-BHC	0.320	0.281		ug/L		88	70 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-354838/2-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-Chlordane	0.320	0.282		ug/L		88	70 - 130
beta-BHC	0.320	0.262		ug/L		82	70 - 130
4,4'-DDD	0.320	0.277		ug/L		87	70 - 130
4,4'-DDE	0.320	0.282		ug/L		88	56 - 130
4,4'-DDT	0.320	0.279		ug/L		87	50 - 137
delta-BHC	0.320	0.296		ug/L		92	70 - 130
Dieldrin	0.320	0.276		ug/L		86	70 - 130
Endosulfan I	0.320	0.217		ug/L		68	40 - 130
Endosulfan II	0.320	0.236		ug/L		74	49 - 130
Endosulfan sulfate	0.320	0.304		ug/L		95	70 - 130
Endrin	0.320	0.276		ug/L		86	69 - 130
Endrin aldehyde	0.320	0.276		ug/L		86	63 - 130
Endrin ketone	0.320	0.259		ug/L		81	54 - 141
gamma-BHC (Lindane)	0.320	0.278		ug/L		87	70 - 130
gamma-Chlordane	0.320	0.244		ug/L		76	63 - 130
Heptachlor	0.320	0.210		ug/L		66	40 - 130
Heptachlor epoxide	0.320	0.264		ug/L		82	70 - 130
Methoxychlor	0.320	0.291		ug/L		91	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*82*		*30 - 143*
Tetrachloro-m-xylene	*65*		*30 - 120*

Lab Sample ID: LCSD 500-354838/3-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354838

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.225		ug/L		70	40 - 130	1	20
alpha-BHC	0.320	0.292		ug/L		91	70 - 130	4	20
alpha-Chlordane	0.320	0.294		ug/L		92	70 - 130	4	20
beta-BHC	0.320	0.271		ug/L		85	70 - 130	3	20
4,4'-DDD	0.320	0.290		ug/L		91	70 - 130	5	20
4,4'-DDE	0.320	0.294		ug/L		92	56 - 130	4	20
4,4'-DDT	0.320	0.294		ug/L		92	50 - 137	5	20
delta-BHC	0.320	0.310		ug/L		97	70 - 130	5	20
Dieldrin	0.320	0.290		ug/L		91	70 - 130	5	20
Endosulfan I	0.320	0.226		ug/L		71	40 - 130	4	20
Endosulfan II	0.320	0.249		ug/L		78	49 - 130	5	20
Endosulfan sulfate	0.320	0.317		ug/L		99	70 - 130	4	20
Endrin	0.320	0.288		ug/L		90	69 - 130	4	20
Endrin aldehyde	0.320	0.288		ug/L		90	63 - 130	4	20
Endrin ketone	0.320	0.273		ug/L		85	54 - 141	5	20
gamma-BHC (Lindane)	0.320	0.290		ug/L		91	70 - 130	4	20
gamma-Chlordane	0.320	0.254		ug/L		79	63 - 130	4	20
Heptachlor	0.320	0.218		ug/L		68	40 - 130	4	20
Heptachlor epoxide	0.320	0.275		ug/L		86	70 - 130	4	20
Methoxychlor	0.320	0.304		ug/L		95	47 - 153	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	98		30 - 143
Tetrachloro-m-xylene	63		30 - 120

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		10/07/16 10:20	10/07/16 17:13	1
beta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		10/07/16 10:20	10/07/16 17:13	1
delta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
Dieldrin	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin ketone	<0.040		0.040	0.017	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Methoxychlor	<0.080		0.080	0.023	ug/L		10/07/16 10:20	10/07/16 17:13	1
Toxaphene	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/07/16 17:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	87		30 - 143	10/07/16 10:20	10/07/16 17:13	1
Tetrachloro-m-xylene	83		30 - 120	10/07/16 10:20	10/07/16 17:13	1

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.298		ug/L		93	40 - 130
alpha-BHC	0.320	0.307		ug/L		96	70 - 130
alpha-Chlordane	0.320	0.316		ug/L		99	70 - 130
beta-BHC	0.320	0.287		ug/L		90	70 - 130
4,4'-DDD	0.320	0.300		ug/L		94	70 - 130
4,4'-DDE	0.320	0.333		ug/L		104	56 - 130
4,4'-DDT	0.320	0.318		ug/L		99	50 - 137
delta-BHC	0.320	0.315		ug/L		99	70 - 130
Dieldrin	0.320	0.304		ug/L		95	70 - 130
Endosulfan I	0.320	0.231		ug/L		72	40 - 130
Endosulfan II	0.320	0.251		ug/L		78	49 - 130
Endosulfan sulfate	0.320	0.332		ug/L		104	70 - 130
Endrin	0.320	0.298		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.290		ug/L		91	63 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin ketone	0.320	0.279		ug/L		87	54 - 141
gamma-BHC (Lindane)	0.320	0.301		ug/L		94	70 - 130
gamma-Chlordane	0.320	0.281		ug/L		88	63 - 130
Heptachlor	0.320	0.276		ug/L		86	40 - 130
Heptachlor epoxide	0.320	0.286		ug/L		90	70 - 130
Methoxychlor	0.320	0.299		ug/L		93	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*109*		*30 - 143*
Tetrachloro-m-xylene	*84*		*30 - 120*

Lab Sample ID: LCSD 500-355087/3-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.307		ug/L		96	40 - 130	3	20
alpha-BHC	0.320	0.315		ug/L		98	70 - 130	3	20
alpha-Chlordane	0.320	0.324		ug/L		101	70 - 130	2	20
beta-BHC	0.320	0.293		ug/L		92	70 - 130	2	20
4,4'-DDD	0.320	0.310		ug/L		97	70 - 130	3	20
4,4'-DDE	0.320	0.343		ug/L		107	56 - 130	3	20
4,4'-DDT	0.320	0.326		ug/L		102	50 - 137	2	20
delta-BHC	0.320	0.324		ug/L		101	70 - 130	3	20
Dieldrin	0.320	0.313		ug/L		98	70 - 130	3	20
Endosulfan I	0.320	0.238		ug/L		74	40 - 130	3	20
Endosulfan II	0.320	0.259		ug/L		81	49 - 130	3	20
Endosulfan sulfate	0.320	0.347		ug/L		109	70 - 130	4	20
Endrin	0.320	0.309		ug/L		96	69 - 130	4	20
Endrin aldehyde	0.320	0.298		ug/L		93	63 - 130	3	20
Endrin ketone	0.320	0.287		ug/L		90	54 - 141	3	20
gamma-BHC (Lindane)	0.320	0.308		ug/L		96	70 - 130	3	20
gamma-Chlordane	0.320	0.289		ug/L		90	63 - 130	3	20
Heptachlor	0.320	0.283		ug/L		89	40 - 130	3	20
Heptachlor epoxide	0.320	0.294		ug/L		92	70 - 130	3	20
Methoxychlor	0.320	0.311		ug/L		97	47 - 153	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*103*		*30 - 143*
Tetrachloro-m-xylene	*86*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-354838/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355065 — **Prep Batch: 354838**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1260	<0.40		0.40	0.070	ug/L		10/06/16 07:30	10/07/16 12:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*64*		*30 - 127*	*10/06/16 07:30*	*10/07/16 12:55*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 150*	*10/06/16 07:30*	*10/07/16 12:55*	*1*

Lab Sample ID: LCS 500-354838/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355065 — **Prep Batch: 354838**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.30		ug/L		83	58 - 121
PCB-1260	4.00	3.86		ug/L		96	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*81*		*30 - 150*

Lab Sample ID: LCSD 500-354838/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355065 — **Prep Batch: 354838**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.26		ug/L		82	58 - 121	1	20
PCB-1260	4.00	3.93		ug/L		98	62 - 137	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*65*		*30 - 127*
DCB Decachlorobiphenyl	*97*		*30 - 150*

Lab Sample ID: MB 500-355087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-355087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	<0.40		0.40	0.070	ug/L		10/07/16 10:20	10/10/16 12:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 127*	*10/07/16 10:20*	*10/10/16 12:25*	*1*
DCB Decachlorobiphenyl	*110*		*30 - 150*	*10/07/16 10:20*	*10/10/16 12:25*	*1*

Lab Sample ID: LCS 500-355087/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.47		ug/L		87	58 - 121
PCB-1260	4.00	4.19		ug/L		105	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 127*
DCB Decachlorobiphenyl	*91*		*30 - 150*

Lab Sample ID: LCSD 500-355087/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.21		ug/L		80	58 - 121	8	20
PCB-1260	4.00	3.71		ug/L		93	62 - 137	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*94*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-355614/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356195 — **Prep Batch: 355614**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 02:39	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 02:39	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 02:39	1
Barium	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 02:39	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 02:39	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 02:39	1
Calcium	<0.20		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 02:39	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 02:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 02:39	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 02:39	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-355614/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356195 — **Prep Batch: 355614**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.164	J ^	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 02:39	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 02:39	1
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 02:39	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 02:39	1
Potassium	<0.50		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 02:39	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 02:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 02:39	1
Sodium	<1.0		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 02:39	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 02:39	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 02:39	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 02:39	1

Lab Sample ID: MB 500-355614/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356352 — **Prep Batch: 355614**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	<0.10		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:02	1

Lab Sample ID: LCS 500-355614/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356195 — **Prep Batch: 355614**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.02		mg/L		101	80 - 120
Antimony	0.500	0.492		mg/L		98	80 - 120
Arsenic	0.100	0.0934		mg/L		93	80 - 120
Barium	2.00	2.04		mg/L		102	80 - 120
Beryllium	0.0500	0.0488		mg/L		98	80 - 120
Cadmium	0.0500	0.0487		mg/L		97	80 - 120
Calcium	10.0	9.98		mg/L		100	80 - 120
Chromium	0.200	0.199		mg/L		100	80 - 120
Cobalt	0.500	0.491		mg/L		98	80 - 120
Copper	0.250	0.249		mg/L		100	80 - 120
Iron	1.00	1.06	^	mg/L		106	80 - 120
Lead	0.100	0.0971		mg/L		97	80 - 120
Manganese	0.500	0.487		mg/L		97	80 - 120
Nickel	0.500	0.489		mg/L		98	80 - 120
Potassium	10.0	10.3		mg/L		103	80 - 120
Selenium	0.100	0.0952		mg/L		95	80 - 120
Silver	0.0500	0.0475		mg/L		95	80 - 120
Sodium	10.0	10.4		mg/L		104	80 - 120
Thallium	0.100	0.0965		mg/L		96	80 - 120
Vanadium	0.500	0.494		mg/L		99	80 - 120
Zinc	0.500	0.474		mg/L		95	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-355614/2-A
Matrix: Water
Analysis Batch: 356352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355614

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	10.0	9.92		mg/L		99	80 - 120

Lab Sample ID: MB 500-355734/1-A
Matrix: Water
Analysis Batch: 356190

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355734

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/12/16 08:54	10/14/16 03:29	1
Antimony	<0.020		0.020	0.0064	mg/L		10/12/16 08:54	10/14/16 03:29	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/12/16 08:54	10/14/16 03:29	1
Barium	<0.010		0.010	0.0022	mg/L		10/12/16 08:54	10/14/16 03:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/12/16 08:54	10/14/16 03:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/12/16 08:54	10/14/16 03:29	1
Calcium	<0.20		0.20	0.059	mg/L		10/12/16 08:54	10/14/16 03:29	1
Chromium	<0.010		0.010	0.0024	mg/L		10/12/16 08:54	10/14/16 03:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/12/16 08:54	10/14/16 03:29	1
Copper	<0.010		0.010	0.0022	mg/L		10/12/16 08:54	10/14/16 03:29	1
Iron	<0.20		0.20	0.10	mg/L		10/12/16 08:54	10/14/16 03:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/12/16 08:54	10/14/16 03:29	1
Magnesium	<0.10		0.10	0.041	mg/L		10/12/16 08:54	10/14/16 03:29	1
Manganese	<0.010		0.010	0.0034	mg/L		10/12/16 08:54	10/14/16 03:29	1
Nickel	<0.010		0.010	0.0037	mg/L		10/12/16 08:54	10/14/16 03:29	1
Potassium	<0.50		0.50	0.16	mg/L		10/12/16 08:54	10/14/16 03:29	1
Selenium	<0.010		0.010	0.0051	mg/L		10/12/16 08:54	10/14/16 03:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/12/16 08:54	10/14/16 03:29	1
Sodium	<1.0		1.0	0.43	mg/L		10/12/16 08:54	10/14/16 03:29	1
Thallium	<0.010		0.010	0.0034	mg/L		10/12/16 08:54	10/14/16 03:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/12/16 08:54	10/14/16 03:29	1
Zinc	<0.020		0.020	0.0090	mg/L		10/12/16 08:54	10/14/16 03:29	1

Lab Sample ID: LCS 500-355734/2-A
Matrix: Water
Analysis Batch: 356190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355734

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.04		mg/L		102	80 - 120
Antimony	0.500	0.471		mg/L		94	80 - 120
Arsenic	0.100	0.0946		mg/L		95	80 - 120
Barium	2.00	1.98		mg/L		99	80 - 120
Beryllium	0.0500	0.0495		mg/L		99	80 - 120
Cadmium	0.0500	0.0470		mg/L		94	80 - 120
Calcium	10.0	10.1		mg/L		101	80 - 120
Chromium	0.200	0.194		mg/L		97	80 - 120
Cobalt	0.500	0.487		mg/L		97	80 - 120
Copper	0.250	0.242		mg/L		97	80 - 120
Iron	1.00	1.16		mg/L		116	80 - 120
Lead	0.100	0.0932		mg/L		93	80 - 120
Magnesium	10.0	9.77		mg/L		98	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-355734/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356190 — **Prep Batch: 355734**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	0.500	0.493		mg/L		99	80 - 120
Nickel	0.500	0.484		mg/L		97	80 - 120
Potassium	10.0	9.97		mg/L		100	80 - 120
Selenium	0.100	0.0894		mg/L		89	80 - 120
Silver	0.0500	0.0452		mg/L		90	80 - 120
Sodium	10.0	10.2		mg/L		102	80 - 120
Thallium	0.100	0.0961		mg/L		96	80 - 120
Vanadium	0.500	0.487		mg/L		97	80 - 120
Zinc	0.500	0.485		mg/L		97	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-355866/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356007 — **Prep Batch: 355866**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:55	1

Lab Sample ID: LCS 500-355866/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356007 — **Prep Batch: 355866**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00174		mg/L		87	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-355288/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355288

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:11	1

Lab Sample ID: LCS 500-355288/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.87	6.33		mg/L		92	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-355060/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.00	J	5.0	1.5	mg/L			10/07/16 08:23	1

Lab Sample ID: LCS 500-355060/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	80 - 120

Lab Sample ID: MB 500-355715/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355715

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.22	J	5.0	1.5	mg/L			10/12/16 07:40	1

Lab Sample ID: LCS 500-355715/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355715

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.2		mg/L		96	80 - 120

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-355160/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.527	J	1.0	0.27	mg/L			10/06/16 23:12	1

Lab Sample ID: LCS 500-355160/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.7		mg/L		107	80 - 120
TOC Result 1	10.0	10.7		mg/L		107	80 - 120
TOC Result 2	10.0	10.7		mg/L		107	80 - 120

Lab Sample ID: 500-118151-4 MS — **Client Sample ID: MW-09-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	27	F1 B	10.0	34.0	F1	mg/L		68	75 - 125
TOC Result 1	27	F1 B	10.0	34.0	F1	mg/L		68	75 - 125

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 500-118151-4 MS — **Client Sample ID: MW-09-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 2	27	F1 B	10.0	34.0	F1	mg/L		68	75 - 125

Lab Sample ID: 500-118151-4 MSD — **Client Sample ID: MW-09-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	27	F1 B	10.0	33.9	F1	mg/L		68	75 - 125	0	20
TOC Result 1	27	F1 B	10.0	33.9	F1	mg/L		68	75 - 125	0	20
TOC Result 2	27	F1 B	10.0	33.9	F1	mg/L		67	75 - 125	0	20

Lab Sample ID: MB 500-355462/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.507	J	1.0	0.27	mg/L			10/07/16 18:24	1

Lab Sample ID: LCS 500-355462/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	9.84		mg/L		98	80 - 120
TOC Result 1	10.0	9.78		mg/L		98	80 - 120
TOC Result 2	10.0	9.90		mg/L		99	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-354929/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/06/16 12:35	1

Lab Sample ID: LCS 500-354929/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	188		mg/L		94	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-355872/14-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356043 — **Prep Batch: 355872**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.185	J	0.20	0.10	mg/L		10/12/16 19:17	10/12/16 22:49	1

Lab Sample ID: MB 500-355872/14-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356095 — **Prep Batch: 355872**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		10/12/16 19:17	10/13/16 15:12	1

Lab Sample ID: LCS 500-355872/15-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356043 — **Prep Batch: 355872**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.46		mg/L		98	80 - 120

Lab Sample ID: LCS 500-355872/15-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356095 — **Prep Batch: 355872**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.35		mg/L		94	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-355173/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:25	1

Lab Sample ID: LCS 500-355173/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.107		mg/L		107	80 - 120

Lab Sample ID: 500-118151-1 MS — **Client Sample ID: MW-13-GW-10042016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	<0.020		0.100	0.0954		mg/L		95	75 - 125

Method: SM 4500 NO2 B - Nitrogen, Nitrite (Continued)

Lab Sample ID: 500-118151-1 MSD — **Client Sample ID: MW-13-GW-10042016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Nitrite	<0.020		0.100	0.0960		mg/L		96	75 - 125	1	20

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-356272/21 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 21:08	1

Lab Sample ID: LCS 500-356272/63 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356272

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate Nitrite			1.00	0.955		mg/L		95	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Date Collected: 10/04/16 15:15
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	355629	10/11/16 22:11	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	100	355629	10/11/16 22:38	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		5	355044	10/07/16 15:28	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355366	10/10/16 12:12	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 14:27	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 17:33	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:00	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 17:28	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 03:49	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:20	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:18	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:41		
					(End)	10/10/16 00:45		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:41		
					(End)	10/07/16 08:42		
Total/NA	Analysis	9060A		2	355462	10/07/16 20:18	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:44		
					(End)	10/06/16 12:45		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:03		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:26		
					(End)	10/06/16 13:26		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:11	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	355629	10/11/16 23:04	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	100	355629	10/11/16 23:31	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		5	355044	10/07/16 15:57	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355366	10/10/16 12:31	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 14:42	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 17:42	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:09	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 17:37	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:05	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:23	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:21	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:45		
					(End)	10/10/16 00:49		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:42		
					(End)	10/07/16 08:43		
Total/NA	Analysis	9060A		2	355462	10/07/16 20:35	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:45		
					(End)	10/06/16 12:47		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:06		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:27		
					(End)	10/06/16 13:27		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:13	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05

Matrix: Water

Date Received: 10/05/16 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/11/16 23:58	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		1	355044	10/07/16 13:59	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354874	10/06/16 16:13	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 14:58	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 17:57	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:19	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 17:53	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:13	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:29	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:27	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:49		
					(End)	10/10/16 00:53		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:43		
					(End)	10/07/16 08:44		
Total/NA	Analysis	9060A		1	355160	10/07/16 04:12	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:47		
					(End)	10/06/16 12:48		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:14		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:27		
					(End)	10/06/16 13:27		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:15	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Date Collected: 10/05/16 13:35
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/12/16 00:25	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		1	355044	10/07/16 14:29	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354874	10/06/16 16:33	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 15:13	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:05	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:28	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:01	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:24	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:31	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:30	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:53		
					(End)	10/10/16 00:58		
Total/NA	Analysis	9038		1	355715		CLB	TAL CHI
					(Start)	10/12/16 07:51		
					(End)	10/12/16 07:52		
Total/NA	Analysis	9060A		1	355160	10/07/16 04:28	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:48		
					(End)	10/06/16 12:49		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:17		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:27		
					(End)	10/06/16 13:28		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:18	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Date Collected: 10/05/16 08:40
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/12/16 00:52	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		10	355044	10/07/16 16:27	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 20:44	PJG	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8082A		1	356515	10/17/16 12:19	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:14	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:36	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:09	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:31	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:34	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:33	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:58		
					(End)	10/10/16 01:02		
Total/NA	Analysis	9038		5	355715		CLB	TAL CHI
					(Start)	10/12/16 07:46		
					(End)	10/12/16 07:47		
Total/NA	Analysis	9060A		20	355462	10/07/16 20:51	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:49		
					(End)	10/06/16 12:50		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		250	356095		JBJ	TAL CHI
					(Start)	10/13/16 16:08		
					(End)	10/13/16 16:15		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:28		
					(End)	10/06/16 13:28		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:20	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/12/16 01:45	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	355629	10/12/16 02:12	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		10	355044	10/07/16 16:56	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 21:22	PJG	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8082A		1	356515	10/17/16 12:34	BJH	TAL CHI
Dissolved	Prep	3010A			355734	10/12/16 08:54	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356190	10/14/16 05:09	PJ1	TAL CHI
Total/NA	Prep	3010A			355734	10/12/16 08:54	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356190	10/14/16 05:04	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:37	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:36	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 01:02		
					(End)	10/10/16 01:06		
Total/NA	Analysis	9038		10	355715		CLB	TAL CHI
					(Start)	10/12/16 07:49		
					(End)	10/12/16 07:51		
Total/NA	Analysis	9060A		20	355462	10/07/16 21:27	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:50		
					(End)	10/06/16 12:51		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		250	356095		JBJ	TAL CHI
					(Start)	10/13/16 16:15		
					(End)	10/13/16 16:21		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:29		
					(End)	10/06/16 13:29		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:22	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118151 COC

Chain of Custody Record

Lab Job #: 500-118151

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 2.7, 3.1, 2.6

Report To (optional)		Bill To (optional)	
Contact:	Jack Kratzmeyer	Contact:	
Company:	Arcadis	Company:	
Address:	120 S. La Salle St Ste 850	Address:	
Address:	Chicago, IL 60603	Address:	
Phone:	312-575-3700	Phone:	
Fax:		Fax:	
E-Mail:	Jack.Kratzmeyer@arcadis.com	PO#/Reference#	

Client: Arcadis
Client Project #: CI001805.0001.00003
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: R. Thornhatter
Lab PM: Therese Margraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved metals (3)	Ammonia, NO_3, NO_2 (6)	Sulfide (5)	VOCs (1)	TOC (2)	TSS, SO_4, NO_2 (8)	Dissolved Gas (9)	Comments
1		MW-13-GW-10042016	10/4/16	1515	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-Diss Metals
2		Dup-1 (10042016)	10/4/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-08-GW-10052016	10/5/16	1205	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-09-GW-10052016	10/5/16	1335	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-06-GW-10052016	10/5/16	0840	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-MW-6 Highly
6		Dup-2 (10052016)	10/5/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	reactive water preservative
																for TOC & VOC grab
																unable to remove
																bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/5/16	1555	David Baker	TA	10/5/16	15:55
David Baker	TA	10/5/16	1635	[signature]	TA-CHI	10/6/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118151-1

Login Number: 118151
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7,3.1,2.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118151-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/19/2016 3:24:52 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Receipt Checklists 22

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-2

Job ID: 500-118151-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118151-2

Comments
No additional comments.

Receipt
The samples were received on 10/5/2016 4:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.6º C, 2.7º C and 3.1º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

October 19, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-118151-1**
Pace Workorder: 20524

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 07, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 10/19/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 103

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 20524 500-118151-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received
205240001	MW-13-GW-10042016	Water	10/4/2016 15:15	10/7/2016 12:00
205240002	DUP-01(10042016)	Water	10/4/2016 00:00	10/7/2016 12:00
205240003	MW-08-GW-10052016	Water	10/5/2016 12:05	10/7/2016 12:00
205240004	MW-09-GW-10052016	Water	10/5/2016 13:35	10/7/2016 12:00
205240005	MW-06-GW-10052016	Water	10/5/2016 08:40	10/7/2016 12:00
205240006	DUP-2(10052016)	Water	10/5/2016 00:00	10/7/2016 12:00

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PROJECT SUMMARY

Workorder: 20524 500-118151-1

Workorder Comments

The analysis for light hydrocarbons/dissolved gases, method AM20GAx, was reported at dilution due to foaming during the headspace preparation/equilibration of the sample. Samples 20524 (0005-0006).

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240001** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-13-GW-10042016** Date Collected: 10/4/2016 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	10/17/2016 14:45	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:45	MM	n
Oxygen	**2.7**	mg/l	0.50	0.13	1	10/17/2016 14:45	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	10/17/2016 14:45	MM	n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240002** Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: **DUP-01(10042016)** Date Collected: 10/4/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	10/17/2016 14:58	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:58	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 14:58	MM	n
Nitrogen	10	mg/l	2.0	0.24	1	10/17/2016 14:58	MM	n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240003** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-08-GW-10052016** Date Collected: 10/5/2016 12:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**12000**	ug/l	0.50	0.027	1	10/17/2016 15:10	MM	n
Carbon Dioxide	**180**	mg/l	5.0	0.24	1	10/17/2016 15:10	MM	n
Oxygen	**3.5**	mg/l	0.50	0.13	1	10/17/2016 15:10	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	10/17/2016 15:10	MM	n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240004** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-09-GW-10052016** Date Collected: 10/5/2016 13:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	10/17/2016 15:23	MM	n
Carbon Dioxide	**410**	mg/l	5.0	0.24	1	10/17/2016 15:23	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 15:23	MM	n
Nitrogen	**13**	mg/l	2.0	0.24	1	10/17/2016 15:23	MM	n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240005** Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: **MW-06-GW-10052016** Date Collected: 10/5/2016 08:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	1.8	0.094	3.5	10/17/2016 16:05	MM	d,n
Carbon Dioxide	**38**	mg/l	18	0.84	3.5	10/17/2016 16:05	MM	d,n
Oxygen	**1.9**	mg/l	1.8	0.46	3.5	10/17/2016 16:05	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:05	MM	d,n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240006** Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: **DUP-2(10052016)** Date Collected: 10/5/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	1.8	0.094	3.5	10/17/2016 16:17	MM	d,n
Carbon Dioxide	**40**	mg/l	18	0.84	3.5	10/17/2016 16:17	MM	d,n
Oxygen	**2.3**	mg/l	1.8	0.46	3.5	10/17/2016 16:17	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:17	MM	d,n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 20524 500-118151-1

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
d	The analyte concentration was determined from a dilution.

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QUALITY CONTROL DATA

Workorder: 20524 500-118151-1

QC Batch: DISG/5675 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 205240001, 205240002, 205240003, 205240004, 205240005, 205240006

METHOD BLANK: 44836

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 44837

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 44838 44840

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	690	750	93	101	80-120	8.2	20	n

LABORATORY CONTROL SAMPLE & LCSD: 44839 44841

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	120	120	104	107	80-120	2.8	20	n
Oxygen	mg/l	11	10	11	92	98	80-120	6.3	20	n
Nitrogen	mg/l	140	110	120	80	84	80-120	4.9	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 20524 500-118151-1

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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220 William Pitt Way
Pittsburgh, PA 15238
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Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 20524 500-118151-1

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
205240001	MW-13-GW-10042016			AM20GAX	DISG/5675
205240002	DUP-01(10042016)			AM20GAX	DISG/5675
205240003	MW-08-GW-10052016			AM20GAX	DISG/5675
205240004	MW-09-GW-10052016			AM20GAX	DISG/5675
205240005	MW-06-GW-10052016			AM20GAX	DISG/5675
205240006	DUP-2(10052016)			AM20GAX	DISG/5675

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Chain of Custody Documents

10/19/2016

WO 20524

16 of 103

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20524

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78910.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118151-1
Address: 220 William Pitt Way, ,	Due Date Requested: 10/17/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-13-GW-10042016 (500-118151-1)	10/4/16	15:15 Central		Water			X	2	
DUP-1 (10042016) (500-118151-2)	10/4/16	Central		Water			X	2	
MW-08-GW-10052016 (500-118151-3)	10/5/16	12:05 Central		Water			X	2	
MW-09-GW-10052016 (500-118151-4)	10/5/16	13:35 Central		Water			X	2	
MW-06-GW-10052016 (500-118151-5)	10/5/16	08:40 Central		Water			X	2	
DUP-2 (10052016) (500-118151-6)	10/5/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 10/06/16 1600	Company TA	Received by:	Date/Time: 10-7-16 1200	Company PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact:	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Cooler Receipt Form

Client Name: TA Project: 500-118151-1 Lab Work Order: 20524

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 6514842788 61

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LJ Date: 10.7.16

Project Manager Review: RW Date: 10-7-16

F-PAE-Q-009-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118151 COC

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. La Salle St Ste 850
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118151
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 2.7, 3.1, 2.6

Client: Arcadis
Client Project #: CI001805.0001.00003
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: R. Thornhatter
Lab PM: Therese Margraves

Preservative: 8, 3, 3, 6, 5, 1, 2, 8, 9

Parameter: SVOCs, PCBs, Pesticides; Total metals; Dissolved metals; Ammonia, NO_3, NO_2; Sulfide; VOCs; TOC; TSS, SO_4, NO_2; Dissolved Gas

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total metals	Dissolved metals	Ammonia, NO_3, NO_2	Sulfide	VOCs	TOC	TSS, SO_4, NO_2	Dissolved Gas	Comments
1		MW-13-GW-10042016	10/4/16	1515	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-Diss Metals
2		Dup-1 (10042016)	10/4/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-08-GW-10052016	10/5/16	1205	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-09-GW-10052016	10/5/16	1335	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-06-GW-10052016	10/5/16	0840	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-MW-6 Highly
6		Dup-2 (10052016)	10/5/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	reactive with preservative
																for TOC & VOC grab
																unable to remove
																bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/5/16	1555	David Baker	TA	10/5/16	15:55
David Baker	TA	10/5/16	1635	[signature]	TA-CHI	10/6/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118151-2

Login Number: 118151
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7,3.1,2.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118189-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/19/2016 4:03:13 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-118189-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118189-1

Comments
No additional comments.

Receipt
The samples were received on 10/6/2016 12:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

GC/MS VOA
Method(s) 8260B: The initial calibration verification (ICV) result for Dichlorodifluoromethane was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory: MW11-GW-10062016 (500-118189-1) and MW10-GW-10052016 (500-118189-2). The samples were analyzed within 7 days per EPA recommendation, therefore, no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: CCVIS 500-355044/2 was outside the method criteria for 2,4-Dinitrophenol (36.9%D), low; 4,6-Dinitro-2-methylphenol (20.5%D, low); 4-Chloroaniline (49.9%D, high) and Benzaldehyde (45.6%D, low). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.(CCVIS 500-355044/2)

Method(s) 8270D: The following sample was diluted due to the nature of the sample matrix: MW11-GW-10062016 (500-118189-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-354970 recovered outside control limits (20%) for 4-Chloroaniline at 27%. The % recoveries were within limits. No further action was required.(LCS 500-354970/2-A) and (LCSD 500-354970/3-A)

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. ICV 500-354143/13 had Benzaldehyde at 35.8%D, low. (ICV 500-354143/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The continuing calibration verification (CCV) associated with batch 500-355155 recovered above the upper control limit for 4,4'-DDE. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW11-GW-10062016 (500-118189-1) and MW10-GW-10052016 (500-118189-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 500-118189-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016 — Lab Sample ID: 500-118189-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	84		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	8.9		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	4.4		1.0	0.51	ug/L	1		8260B	Total/NA
Cyclohexane	78		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.85	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	2.6		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	39		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	76		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	1.5		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	15		1.0	0.22	ug/L	1		8260B	Total/NA
4-Chloroaniline	8.2	J *	37	7.4	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	1.8	J	7.4	0.24	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	2.2	J	7.4	1.7	ug/L	5		8270D	Total/NA
Naphthalene	1.9	J	3.7	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	1.6	J	3.7	1.4	ug/L	5		8270D	Total/NA
Aluminum	0.095	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.75		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0083	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0053	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	28		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0060		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.21		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	100		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	320		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0055		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.018	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.76		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0075	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0025	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	110		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	330		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0048	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	6.7	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	65		5.0	1.3	mg/L	5		9060A	Total/NA
Total Suspended Solids	68		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	59		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016 — Lab Sample ID: 500-118189-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.54		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.92	J	1.0	0.39	ug/L	1		8260B	Total/NA
Vinyl chloride	0.42	J	0.50	0.20	ug/L	1		8260B	Total/NA
3 & 4 Methylphenol	0.47	J	1.5	0.33	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.56	J	0.74	0.27	ug/L	1		8270D	Total/NA
Barium	0.44		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0010	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0034	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	13		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0026	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	58		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.58		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0038	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	52		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	140		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.038		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0010	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	13		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	61		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.61		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0039	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	54		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	150		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	22	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	20	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	42		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	19	B	1.0	0.50	mg/L	5		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-118189-1	MW11-GW-10062016	Water	10/06/16 08:30	10/06/16 12:25
500-118189-2	MW10-GW-10052016	Water	10/05/16 17:05	10/06/16 12:25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 17:26	1
Benzene	**84**		0.50	0.15	ug/L			10/11/16 17:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 17:26	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 17:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 17:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
Chlorobenzene	**8.9**		1.0	0.39	ug/L			10/11/16 17:26	1
Chloroethane	**4.4**		1.0	0.51	ug/L			10/11/16 17:26	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 17:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 17:26	1
Cyclohexane	**78**		1.0	0.49	ug/L			10/11/16 17:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 17:26	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 17:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichlorobenzene	**0.85**	**J**	1.0	0.33	ug/L			10/11/16 17:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
1,4-Dichlorobenzene	**2.6**		1.0	0.36	ug/L			10/11/16 17:26	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 17:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
Ethylbenzene	**2.6**		0.50	0.18	ug/L			10/11/16 17:26	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 17:26	1
Isopropylbenzene	**39**		1.0	0.39	ug/L			10/11/16 17:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 17:26	1
Methylcyclohexane	**76**		1.0	0.32	ug/L			10/11/16 17:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 17:26	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 17:26	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 17:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Toluene	**1.5**		0.50	0.15	ug/L			10/11/16 17:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 17:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 17:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 17:26	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 17:26	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 17:26	1
Xylenes, Total	**15**		1.0	0.22	ug/L			10/11/16 17:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 17:26*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*10/11/16 17:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 17:26*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 17:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acenaphthylene	<3.7		3.7	0.98	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acetophenone	<18		18	2.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]pyrene	<0.74		0.74	0.36	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 14:58	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloroaniline	**8.2**	**J ***	37	7.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloro-3-methylphenol	<37		37	8.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chloronaphthalene	<7.4		7.4	0.86	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chlorophenol	<18		18	2.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenzofuran	<7.4		7.4	0.97	ug/L		10/06/16 16:12	10/07/16 14:58	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dichlorophenol	<37		37	9.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Diethyl phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dimethylphenol	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
4,6-Dinitro-2-methylphenol	<74		74	22	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrophenol	<74		74	32	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-octyl phthalate	<37		37	3.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluorene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorocyclopentadiene	<74		74	23	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:58	5
Isophorone	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Methylnaphthalene	**1.8**	**J**	7.4	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
3 & 4 Methylphenol	**2.2**	**J**	7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Naphthalene	**1.9**	**J**	3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
3-Nitroaniline	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitrophenol	<37		37	9.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitrophenol	<74		74	27	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.57	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodiphenylamine	**1.6**	**J**	3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pentachlorophenol	<74		74	14	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenol	<18		18	2.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzaldehyde	<150	^	150	56	ug/L		10/06/16 16:12	10/07/16 14:58	5
Caprolactam	<37		37	5.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*80*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2-Fluorophenol (Surr)	*53*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Phenol-d5 (Surr)	*48*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:20	10/07/16 20:06	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:20	10/07/16 20:06	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:20	10/07/16 20:06	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:20	10/07/16 20:06	1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:20	10/07/16 20:06	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/07/16 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:06*	*1*
Tetrachloro-m-xylene	*70*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:20	10/10/16 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*76*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:26*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.095**	**J**	0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:27	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:27	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Barium	**0.75**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:27	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:27	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:27	1
Copper	**0.0053**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:27	1
Lead	**0.0060**		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:27	1
Magnesium	**110**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:27	1
Manganese	**0.21**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:27	1
Potassium	**100**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:27	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:27	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:27	1
Sodium	**320**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:27	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Vanadium	**0.0055**		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:27	1
Zinc	**0.018**	**J**	0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:27	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Date Collected: 10/06/16 08:30
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-1
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:32	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Barium	**0.76**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:32	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:32	1
Chromium	**0.0075**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:32	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:32	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:32	1
Magnesium	**120**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:32	1
Manganese	**0.22**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:32	1
Potassium	**110**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:32	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:32	1
Sodium	**330**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:32	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Vanadium	**0.0048**	**J**	0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:32	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:38	1
Sulfate	**6.7**	**B**	5.0	1.5	mg/L			10/14/16 06:12	1
Total Organic Carbon - Duplicates	**65**		5.0	1.3	mg/L			10/12/16 00:44	5
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**68**		5.0	2.5	mg/L			10/07/16 13:31	1
Ammonia	**59**		4.0	2.0	mg/L		10/13/16 21:45	10/16/16 19:37	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 16:59	1
Benzene	**0.54**		0.50	0.15	ug/L			10/11/16 16:59	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 16:59	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 16:59	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 16:59	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
Chlorobenzene	**0.92**	**J**	1.0	0.39	ug/L			10/11/16 16:59	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 16:59	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 16:59	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 16:59	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 16:59	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 16:59	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 16:59	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 16:59	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 16:59	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 16:59	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 16:59	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 16:59	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 16:59	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 16:59	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 16:59	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 16:59	1
Vinyl chloride	**0.42**	**J**	0.50	0.20	ug/L			10/11/16 16:59	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 16:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Date Collected: 10/05/16 17:05
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*10/11/16 16:59*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/11/16 16:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 16:59*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 16:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:30	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:30	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:30	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloroaniline	<7.4	*	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:30	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:30	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:30	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:30	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:30	1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
3 & 4 Methylphenol	**0.47**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:30	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:30	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodiphenylamine	**0.56**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzaldehyde	<29	^	29	11	ug/L		10/06/16 16:12	10/07/16 13:30	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:30	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:30	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*83*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Nitrobenzene-d5 (Surr)	*74*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Phenol-d5 (Surr)	*49*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Terphenyl-d14 (Surr)	*107*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2,4,6-Tribromophenol (Surr)	*128*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/07/16 10:20	10/07/16 20:25	1
beta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/07/16 10:20	10/07/16 20:25	1
delta-BHC	<0.037		0.037	0.0096	ug/L		10/07/16 10:20	10/07/16 20:25	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/07/16 10:20	10/07/16 20:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2
Matrix: Water

Date Collected: 10/05/16 17:05
Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/07/16 10:20	10/07/16 20:25	1
Toxaphene	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/07/16 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:25*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:25*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1221	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1232	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1242	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1248	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1254	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/07/16 10:20	10/10/16 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:42*	*1*
DCB Decachlorobiphenyl	*97*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:48	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Barium	**0.44**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:48	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:48	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:48	1
Copper	**0.0034**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:48	1
Lead	**0.0026**	**J**	0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:48	1
Magnesium	**58**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:48	1
Manganese	**0.58**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Nickel	**0.0038**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:48	1
Potassium	**52**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:48	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:48	1
Sodium	**140**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:48	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:48	1
Zinc	**0.038**		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:48	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:52	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Barium	**0.45**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:52	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:52	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:52	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:52	1
Magnesium	**61**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:52	1
Manganese	**0.61**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Nickel	**0.0039**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:52	1
Potassium	**54**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:52	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:52	1
Sodium	**150**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:52	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:42	1
Sulfate	**22**	**B**	5.0	1.5	mg/L			10/14/16 06:16	1
Total Organic Carbon - Duplicates	**20**	**B**	1.0	0.27	mg/L			10/08/16 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**42**		5.0	2.5	mg/L			10/07/16 13:32	1
Ammonia	**19**	**B**	1.0	0.50	mg/L		10/13/16 21:45	10/14/16 00:48	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:52	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

GC/MS VOA

Analysis Batch: 355490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8260B	
500-118189-2	MW10-GW-10052016	Total/NA	Water	8260B	
MB 500-355490/6	Method Blank	Total/NA	Water	8260B	
LCS 500-355490/4	Lab Control Sample	Total/NA	Water	8260B	
500-118189-2 MS	MW10-GW-10052016	Total/NA	Water	8260B	
500-118189-2 MSD	MW10-GW-10052016	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 354970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	3510C	
500-118189-2	MW10-GW-10052016	Total/NA	Water	3510C	
MB 500-354970/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8270D	354970
500-118189-2	MW10-GW-10052016	Total/NA	Water	8270D	354970
MB 500-354970/1-A	Method Blank	Total/NA	Water	8270D	354970
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	8270D	354970
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	354970

GC Semi VOA

Prep Batch: 355087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	3510C	
500-118189-2	MW10-GW-10052016	Total/NA	Water	3510C	
MB 500-355087/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8081B	355087
500-118189-2	MW10-GW-10052016	Total/NA	Water	8081B	355087
MB 500-355087/1-A	Method Blank	Total/NA	Water	8081B	355087
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	8081B	355087
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	355087

Analysis Batch: 355347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8082A	355087
500-118189-2	MW10-GW-10052016	Total/NA	Water	8082A	355087
MB 500-355087/1-A	Method Blank	Total/NA	Water	8082A	355087

GC Semi VOA (Continued)

Analysis Batch: 355347 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	8082A	355087
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	355087

Metals

Prep Batch: 355615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	3010A	
500-118189-1	MW11-GW-10062016	Total/NA	Water	3010A	
500-118189-2	MW10-GW-10052016	Dissolved	Water	3010A	
500-118189-2	MW10-GW-10052016	Total/NA	Water	3010A	
MB 500-355615/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355615/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 355862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	7470A	
500-118189-1	MW11-GW-10062016	Total/NA	Water	7470A	
500-118189-2	MW10-GW-10052016	Dissolved	Water	7470A	
500-118189-2	MW10-GW-10052016	Total/NA	Water	7470A	
MB 500-355862/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-355862/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 356007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	7470A	355862
500-118189-1	MW11-GW-10062016	Total/NA	Water	7470A	355862
500-118189-2	MW10-GW-10052016	Dissolved	Water	7470A	355862
500-118189-2	MW10-GW-10052016	Total/NA	Water	7470A	355862
MB 500-355862/12-A	Method Blank	Total/NA	Water	7470A	355862
LCS 500-355862/13-A	Lab Control Sample	Total/NA	Water	7470A	355862

Analysis Batch: 356352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	6010C	355615
500-118189-1	MW11-GW-10062016	Total/NA	Water	6010C	355615
500-118189-2	MW10-GW-10052016	Dissolved	Water	6010C	355615
500-118189-2	MW10-GW-10052016	Total/NA	Water	6010C	355615
MB 500-355615/1-A	Method Blank	Total/NA	Water	6010C	355615
LCS 500-355615/2-A	Lab Control Sample	Total/NA	Water	6010C	355615

General Chemistry

Analysis Batch: 355125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 2540D	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 2540D	
MB 500-355125/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-355125/2	Lab Control Sample	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 355172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NO2 B	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
MB 500-355172/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-355172/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 355462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-2	MW10-GW-10052016	Total/NA	Water	9060A	
MB 500-355462/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355462/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 355895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	9034	
500-118189-2	MW10-GW-10052016	Total/NA	Water	9034	
MB 500-355895/1	Method Blank	Total/NA	Water	9034	
LCS 500-355895/2	Lab Control Sample	Total/NA	Water	9034	

Analysis Batch: 356087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	9060A	
MB 500-356087/4	Method Blank	Total/NA	Water	9060A	
LCS 500-356087/5	Lab Control Sample	Total/NA	Water	9060A	

Prep Batch: 356123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NH3 B	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
MB 500-356123/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-356123/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 356143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	9038	
500-118189-2	MW10-GW-10052016	Total/NA	Water	9038	
MB 500-356143/3	Method Blank	Total/NA	Water	9038	
LCS 500-356143/4	Lab Control Sample	Total/NA	Water	9038	
500-118189-1 MS	MW11-GW-10062016	Total/NA	Water	9038	
500-118189-1 MSD	MW11-GW-10062016	Total/NA	Water	9038	

Analysis Batch: 356271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NH3 G	356123
MB 500-356123/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	356123
LCS 500-356123/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	356123

Analysis Batch: 356397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NO3 F	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
MB 500-356397/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 356397 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-356397/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 356419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NH3 G	356123
MB 500-356123/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	356123
LCS 500-356123/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	356123

Analysis Batch: 356421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	Nitrate by calc	
500-118189-2	MW10-GW-10052016	Total/NA	Water	Nitrate by calc	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-118189-1	MW11-GW-10062016	96	94	84	97
500-118189-2	MW10-GW-10052016	99	92	84	98
500-118189-2 MS	MW10-GW-10052016	97	95	86	97
500-118189-2 MSD	MW10-GW-10052016	98	97	85	96
LCS 500-355490/4	Lab Control Sample	97	97	88	98
MB 500-355490/6	Method Blank	95	95	88	100

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-118189-1	MW11-GW-10062016	80	53	59	48	97	119
500-118189-2	MW10-GW-10052016	83	63	74	49	107	128
LCS 500-354970/2-A	Lab Control Sample	100	91	101	68	122	124
LCSD 500-354970/3-A	Lab Control Sample Dup	95	87	99	69	116	121
MB 500-354970/1-A	Method Blank	90	77	87	55	120	99

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118189-1	MW11-GW-10062016	55	70
500-118189-2	MW10-GW-10052016	82	66
LCS 500-355087/2-A	Lab Control Sample	109	84
LCSD 500-355087/3-A	Lab Control Sample Dup	103	86
MB 500-355087/1-A	Method Blank	87	83

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		TCX2	DCB2						
Lab Sample ID	**Client Sample ID**	**(30-127)**	**(30-150)**						
500-118189-1	MW11-GW-10062016	76	60						
500-118189-2	MW10-GW-10052016	105	97						
LCS 500-355087/4-A	Lab Control Sample	80	91						
LCSD 500-355087/5-A	Lab Control Sample Dup	69	94						
MB 500-355087/1-A	Method Blank	82	110						

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-355490/6
Matrix: Water
Analysis Batch: 355490

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 09:50	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 09:50	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 09:50	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 09:50	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 09:50	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 09:50	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 09:50	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 09:50	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 09:50	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 09:50	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 09:50	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 09:50	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 09:50	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 09:50	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 09:50	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 09:50	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 09:50	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 09:50	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 09:50	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 09:50	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 09:50	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 09:50	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 09:50	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 09:50	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 09:50	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 09:50	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 09:50	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 09:50	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 09:50	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 09:50	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 09:50	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 09:50	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 09:50	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 09:50	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 09:50	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 09:50	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 09:50	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 09:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 09:50	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 09:50	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 09:50	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		71 - 120		10/11/16 09:50	1
Dibromofluoromethane	95		70 - 120		10/11/16 09:50	1
1,2-Dichloroethane-d4 (Surr)	88		71 - 127		10/11/16 09:50	1
Toluene-d8 (Surr)	100		75 - 120		10/11/16 09:50	1

Lab Sample ID: LCS 500-355490/4
Matrix: Water
Analysis Batch: 355490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	37.7		ug/L		75	37 - 141
Benzene	50.0	51.8		ug/L		104	70 - 125
Bromodichloromethane	50.0	46.7		ug/L		93	70 - 125
Bromoform	50.0	47.1		ug/L		94	54 - 128
Bromomethane	50.0	36.9		ug/L		74	40 - 150
Carbon disulfide	50.0	52.6		ug/L		105	68 - 125
Carbon tetrachloride	50.0	51.1		ug/L		102	70 - 125
Chlorobenzene	50.0	52.7		ug/L		105	70 - 125
Chloroethane	50.0	45.2		ug/L		90	60 - 139
Chloroform	50.0	51.2		ug/L		102	70 - 125
Chloromethane	50.0	56.9		ug/L		114	60 - 140
cis-1,2-Dichloroethene	50.0	53.0		ug/L		106	70 - 125
cis-1,3-Dichloropropene	50.0	48.0		ug/L		96	70 - 125
Cyclohexane	50.0	59.3		ug/L		119	56 - 149
Dibromochloromethane	50.0	47.1		ug/L		94	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	41.4		ug/L		83	51 - 125
1,2-Dibromoethane	50.0	50.9		ug/L		102	70 - 125
1,2-Dichlorobenzene	50.0	53.3		ug/L		107	70 - 125
1,3-Dichlorobenzene	50.0	53.5		ug/L		107	70 - 125
1,4-Dichlorobenzene	50.0	53.0		ug/L		106	70 - 125
Dichlorodifluoromethane	50.0	56.5		ug/L		113	51 - 140
1,1-Dichloroethane	50.0	51.1		ug/L		102	70 - 125
1,2-Dichloroethane	50.0	47.4		ug/L		95	70 - 125
1,1-Dichloroethene	50.0	57.8		ug/L		116	70 - 125
1,2-Dichloropropane	50.0	51.1		ug/L		102	70 - 125
Ethylbenzene	50.0	52.1		ug/L		104	70 - 125
2-Hexanone	50.0	41.7		ug/L		83	49 - 139
Isopropylbenzene	50.0	53.6		ug/L		107	70 - 125
Methyl acetate	250	309		ug/L		124	60 - 148
Methylcyclohexane	50.0	57.1		ug/L		114	70 - 127
Methylene Chloride	50.0	53.0		ug/L		106	68 - 125
Methyl Ethyl Ketone	50.0	42.4		ug/L		85	52 - 142
methyl isobutyl ketone	50.0	45.4		ug/L		91	47 - 140
Methyl tert-butyl ether	50.0	48.7		ug/L		97	67 - 125
Styrene	50.0	50.3		ug/L		101	70 - 125
1,1,2,2-Tetrachloroethane	50.0	46.7		ug/L		93	68 - 125
Tetrachloroethene	50.0	59.0		ug/L		118	70 - 125
Toluene	50.0	51.4		ug/L		103	70 - 125
trans-1,2-Dichloroethene	50.0	53.8		ug/L		108	70 - 125
trans-1,3-Dichloropropene	50.0	45.7		ug/L		91	70 - 125
1,2,4-Trichlorobenzene	50.0	61.3		ug/L		123	64 - 126
1,1,1-Trichloroethane	50.0	51.1		ug/L		102	70 - 125
1,1,2-Trichloroethane	50.0	50.0		ug/L		100	70 - 125
Trichloroethene	50.0	60.7		ug/L		121	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-355490/4
Matrix: Water
Analysis Batch: 355490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	52.6		ug/L		105	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	58.5		ug/L		117	57 - 141
Vinyl chloride	50.0	49.3		ug/L		99	70 - 126
Xylenes, Total	100	100		ug/L		100	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*88*		*71 - 127*
Toluene-d8 (Surr)	*98*		*75 - 120*

Lab Sample ID: 500-118189-2 MS
Matrix: Water
Analysis Batch: 355490

Client Sample ID: MW10-GW-10052016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<5.0		50.0	40.1		ug/L		80	37 - 141
Benzene	0.54		50.0	49.8		ug/L		99	70 - 125
Bromodichloromethane	<1.0		50.0	43.3		ug/L		87	70 - 125
Bromoform	<1.0		50.0	42.6		ug/L		85	54 - 128
Bromomethane	<2.0		50.0	36.9		ug/L		74	40 - 150
Carbon disulfide	<2.0		50.0	50.7		ug/L		101	68 - 125
Carbon tetrachloride	<1.0		50.0	47.1		ug/L		94	70 - 125
Chlorobenzene	0.92	J	50.0	50.9		ug/L		100	70 - 125
Chloroethane	<1.0		50.0	45.3		ug/L		91	60 - 139
Chloroform	<1.0		50.0	47.6		ug/L		95	70 - 125
Chloromethane	<1.0		50.0	48.8		ug/L		98	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	50.8		ug/L		102	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	43.6		ug/L		87	70 - 125
Cyclohexane	<1.0		50.0	55.8		ug/L		112	56 - 149
Dibromochloromethane	<1.0		50.0	43.6		ug/L		87	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	41.8		ug/L		84	51 - 125
1,2-Dibromoethane	<1.0		50.0	47.7		ug/L		95	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	50.8		ug/L		102	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	51.2		ug/L		102	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	50.4		ug/L		101	70 - 125
Dichlorodifluoromethane	<2.0		50.0	56.9		ug/L		114	51 - 140
1,1-Dichloroethane	<1.0		50.0	48.0		ug/L		96	70 - 125
1,2-Dichloroethane	<1.0		50.0	44.5		ug/L		89	70 - 125
1,1-Dichloroethene	<1.0		50.0	53.6		ug/L		107	70 - 125
1,2-Dichloropropane	<1.0		50.0	48.9		ug/L		98	70 - 125
Ethylbenzene	<0.50		50.0	49.8		ug/L		100	70 - 125
2-Hexanone	<5.0		50.0	41.5		ug/L		83	49 - 139
Isopropylbenzene	<1.0		50.0	51.1		ug/L		102	70 - 125
Methyl acetate	<5.0		250	277		ug/L		111	60 - 148
Methylcyclohexane	<1.0		50.0	54.2		ug/L		108	70 - 127
Methylene Chloride	<5.0		50.0	50.7		ug/L		101	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-118189-2 MS — **Client Sample ID: MW10-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355490

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	42.4		ug/L		85	52 - 142
methyl isobutyl ketone	<5.0		50.0	41.3		ug/L		83	47 - 140
Methyl tert-butyl ether	<1.0		50.0	45.1		ug/L		90	67 - 125
Styrene	<1.0		50.0	47.7		ug/L		95	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	43.6		ug/L		87	68 - 125
Tetrachloroethene	<1.0		50.0	56.5		ug/L		113	70 - 125
Toluene	<0.50		50.0	49.0		ug/L		98	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	50.8		ug/L		102	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	41.4		ug/L		83	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	56.2		ug/L		112	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	48.8		ug/L		98	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	47.7		ug/L		95	70 - 125
Trichloroethene	<0.50		50.0	57.0		ug/L		114	70 - 125
Trichlorofluoromethane	<1.0		50.0	51.9		ug/L		104	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	55.3		ug/L		111	57 - 141
Vinyl chloride	0.42	J	50.0	48.7		ug/L		97	70 - 126
Xylenes, Total	<1.0		100	95.7		ug/L		96	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*95*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*
Toluene-d8 (Surr)	*97*		*75 - 120*

Lab Sample ID: 500-118189-2 MSD — **Client Sample ID: MW10-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355490

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<5.0		50.0	44.4		ug/L		89	37 - 141	10	20
Benzene	0.54		50.0	50.7		ug/L		100	70 - 125	2	20
Bromodichloromethane	<1.0		50.0	45.1		ug/L		90	70 - 125	4	20
Bromoform	<1.0		50.0	46.2		ug/L		92	54 - 128	8	20
Bromomethane	<2.0		50.0	37.7		ug/L		75	40 - 150	2	20
Carbon disulfide	<2.0		50.0	50.9		ug/L		102	68 - 125	0	20
Carbon tetrachloride	<1.0		50.0	47.0		ug/L		94	70 - 125	0	20
Chlorobenzene	0.92	J	50.0	51.8		ug/L		102	70 - 125	2	20
Chloroethane	<1.0		50.0	44.6		ug/L		89	60 - 139	2	20
Chloroform	<1.0		50.0	49.4		ug/L		99	70 - 125	4	20
Chloromethane	<1.0		50.0	46.5		ug/L		93	60 - 140	5	20
cis-1,2-Dichloroethene	<1.0		50.0	52.9		ug/L		106	70 - 125	4	20
cis-1,3-Dichloropropene	<1.0		50.0	44.8		ug/L		90	70 - 125	3	20
Cyclohexane	<1.0		50.0	55.6		ug/L		111	56 - 149	0	20
Dibromochloromethane	<1.0		50.0	45.1		ug/L		90	66 - 125	3	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	39.2		ug/L		78	51 - 125	7	20
1,2-Dibromoethane	<1.0		50.0	50.2		ug/L		100	70 - 125	5	20
1,2-Dichlorobenzene	<1.0		50.0	51.1		ug/L		102	70 - 125	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-118189-2 MSD
Matrix: Water
Analysis Batch: 355490

Client Sample ID: MW10-GW-10052016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	51.7		ug/L		103	70 - 125	1	20
1,4-Dichlorobenzene	<1.0		50.0	51.2		ug/L		102	70 - 125	2	20
Dichlorodifluoromethane	<2.0		50.0	53.6		ug/L		107	51 - 140	6	20
1,1-Dichloroethane	<1.0		50.0	49.7		ug/L		99	70 - 125	3	20
1,2-Dichloroethane	<1.0		50.0	45.4		ug/L		91	70 - 125	2	20
1,1-Dichloroethene	<1.0		50.0	53.8		ug/L		108	70 - 125	0	20
1,2-Dichloropropane	<1.0		50.0	50.8		ug/L		102	70 - 125	4	20
Ethylbenzene	<0.50		50.0	49.0		ug/L		98	70 - 125	2	20
2-Hexanone	<5.0		50.0	42.3		ug/L		85	49 - 139	2	20
Isopropylbenzene	<1.0		50.0	51.6		ug/L		103	70 - 125	1	20
Methyl acetate	<5.0		250	289		ug/L		116	60 - 148	4	20
Methylcyclohexane	<1.0		50.0	54.5		ug/L		109	70 - 127	1	20
Methylene Chloride	<5.0		50.0	52.7		ug/L		105	68 - 125	4	20
Methyl Ethyl Ketone	<5.0		50.0	43.9		ug/L		88	52 - 142	4	20
methyl isobutyl ketone	<5.0		50.0	43.0		ug/L		86	47 - 140	4	20
Methyl tert-butyl ether	<1.0		50.0	47.2		ug/L		94	67 - 125	5	20
Styrene	<1.0		50.0	47.8		ug/L		96	70 - 125	0	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	47.3		ug/L		95	68 - 125	8	20
Tetrachloroethene	<1.0		50.0	56.1		ug/L		112	70 - 125	1	20
Toluene	<0.50		50.0	49.3		ug/L		99	70 - 125	1	20
trans-1,2-Dichloroethene	<1.0		50.0	52.8		ug/L		106	70 - 125	4	20
trans-1,3-Dichloropropene	<1.0		50.0	42.8		ug/L		86	70 - 125	3	20
1,2,4-Trichlorobenzene	<1.0		50.0	51.6		ug/L		103	64 - 126	9	20
1,1,1-Trichloroethane	<1.0		50.0	48.4		ug/L		97	70 - 125	1	20
1,1,2-Trichloroethane	<1.0		50.0	48.3		ug/L		97	70 - 125	1	20
Trichloroethene	<0.50		50.0	56.2		ug/L		112	70 - 125	1	20
Trichlorofluoromethane	<1.0		50.0	48.0		ug/L		96	60 - 126	8	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	53.9		ug/L		108	57 - 141	3	20
Vinyl chloride	0.42	J	50.0	45.8		ug/L		91	70 - 126	6	20
Xylenes, Total	<1.0		100	94.9		ug/L		95	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*
Toluene-d8 (Surr)	*96*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acetophenone	<4.0		4.0	0.53	ug/L		10/06/16 16:12	10/07/16 12:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	<0.80		0.80	0.27	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		10/06/16 16:12	10/07/16 12:31	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		10/06/16 16:12	10/07/16 12:31	1
Carbazole	<4.0		4.0	0.28	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		10/06/16 16:12	10/07/16 12:31	1
Chrysene	<0.40		0.40	0.055	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		10/06/16 16:12	10/07/16 12:31	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluoranthene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluorene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		10/06/16 16:12	10/07/16 12:31	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		10/06/16 16:12	10/07/16 12:31	1
Isophorone	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Naphthalene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		10/06/16 16:12	10/07/16 12:31	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		10/06/16 16:12	10/07/16 12:31	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		10/06/16 16:12	10/07/16 12:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	<16		16	5.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pentachlorophenol	<16		16	3.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenanthrene	<0.80		0.80	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenol	<4.0		4.0	0.54	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pyrene	<0.80		0.80	0.34	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzaldehyde	<32	^	32	12	ug/L		10/06/16 16:12	10/07/16 12:31	1
Caprolactam	<8.0		8.0	1.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Atrazine	<4.0		4.0	0.50	ug/L		10/06/16 16:12	10/07/16 12:31	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*30 - 123*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2-Fluorophenol (Surr)	*77*		*30 - 110*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Phenol-d5 (Surr)	*55*		*20 - 100*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Terphenyl-d14 (Surr)	*120*		*42 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	30.5		ug/L		95	41 - 112
Acenaphthylene	32.0	29.5		ug/L		92	48 - 110
Acetophenone	32.0	29.6		ug/L		92	54 - 116
Anthracene	32.0	32.2		ug/L		100	65 - 118
Benzo[a]anthracene	32.0	34.7		ug/L		108	69 - 121
Benzo[a]pyrene	32.0	35.5		ug/L		111	69 - 130
Benzo[b]fluoranthene	32.0	37.2		ug/L		116	66 - 133
Benzo[g,h,i]perylene	32.0	35.3		ug/L		110	47 - 145
Benzo[k]fluoranthene	32.0	36.2		ug/L		113	64 - 134
Bis(2-chloroethoxy)methane	32.0	31.3		ug/L		98	55 - 115
Bis(2-chloroethyl)ether	32.0	28.4		ug/L		89	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	33.9		ug/L		106	60 - 132
4-Bromophenyl phenyl ether	32.0	33.6		ug/L		105	60 - 124
Butyl benzyl phthalate	32.0	34.1		ug/L		107	63 - 127
Carbazole	32.0	35.7		ug/L		112	71 - 132
4-Chloroaniline	32.0	24.0		ug/L		75	15 - 125
4-Chloro-3-methylphenol	32.0	34.7		ug/L		109	63 - 120
2-Chloronaphthalene	32.0	28.9		ug/L		90	38 - 110
2-Chlorophenol	32.0	29.6		ug/L		93	49 - 110
4-Chlorophenyl phenyl ether	32.0	33.1		ug/L		103	55 - 115

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chrysene	32.0	32.9		ug/L		103	70 - 126
Dibenz(a,h)anthracene	32.0	35.1		ug/L		110	59 - 145
Dibenzofuran	32.0	32.2		ug/L		101	54 - 111
3,3'-Dichlorobenzidine	32.0	37.7		ug/L		118	57 - 145
2,4-Dichlorophenol	32.0	36.0		ug/L		112	53 - 123
Diethyl phthalate	32.0	33.6		ug/L		105	64 - 126
2,4-Dimethylphenol	32.0	25.5		ug/L		80	42 - 115
Dimethyl phthalate	32.0	33.3		ug/L		104	66 - 120
Di-n-butyl phthalate	32.0	33.8		ug/L		106	67 - 125
4,6-Dinitro-2-methylphenol	64.0	59.9		ug/L		94	34 - 152
2,4-Dinitrophenol	64.0	53.1		ug/L		83	20 - 140
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131
2,6-Dinitrotoluene	32.0	33.3		ug/L		104	66 - 125
Di-n-octyl phthalate	32.0	34.8		ug/L		109	63 - 133
Fluoranthene	32.0	33.8		ug/L		106	68 - 127
Fluorene	32.0	32.0		ug/L		100	54 - 113
Hexachlorobenzene	32.0	32.3		ug/L		101	63 - 127
Hexachlorobutadiene	32.0	20.0		ug/L		63	20 - 110
Hexachlorocyclopentadiene	32.0	20.6		ug/L		65	10 - 110
Hexachloroethane	32.0	18.5		ug/L		58	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	35.0		ug/L		109	52 - 150
Isophorone	32.0	28.8		ug/L		90	55 - 120
2-Methylnaphthalene	32.0	24.9		ug/L		78	32 - 110
2-Methylphenol	32.0	29.9		ug/L		93	49 - 113
3 & 4 Methylphenol	32.0	30.9		ug/L		96	49 - 114
Naphthalene	32.0	24.1		ug/L		75	32 - 110
2-Nitroaniline	32.0	34.1		ug/L		107	61 - 126
3-Nitroaniline	32.0	31.8		ug/L		99	42 - 134
4-Nitroaniline	32.0	31.8		ug/L		99	40 - 142
Nitrobenzene	32.0	31.3		ug/L		98	49 - 116
2-Nitrophenol	32.0	30.5		ug/L		95	51 - 120
4-Nitrophenol	64.0	47.9		ug/L		75	21 - 110
N-Nitrosodi-n-propylamine	32.0	30.1		ug/L		94	52 - 122
N-Nitrosodiphenylamine	32.0	30.9		ug/L		96	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	27.4		ug/L		86	34 - 110
Pentachlorophenol	64.0	54.3		ug/L		85	29 - 138
Phenanthrene	32.0	32.7		ug/L		102	63 - 121
Phenol	32.0	20.9		ug/L		65	33 - 100
Pyrene	32.0	32.9		ug/L		103	65 - 122
2,4,5-Trichlorophenol	32.0	34.7		ug/L		109	63 - 121
2,4,6-Trichlorophenol	32.0	31.7		ug/L		99	61 - 120
Caprolactam	32.0	18.4		ug/L		58	25 - 100
Atrazine	32.0	33.0		ug/L		103	57 - 128
1,1'-Biphenyl	32.0	30.1		ug/L		94	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*100*		*30 - 123*
2-Fluorophenol (Surr)	*91*		*30 - 110*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*101*		*33 - 139*
Phenol-d5 (Surr)	*68*		*20 - 100*
Terphenyl-d14 (Surr)	*122*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*124*		*30 - 150*

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	30.6		ug/L		96	41 - 112	0	20
Acenaphthylene	32.0	29.8		ug/L		93	48 - 110	1	20
Acetophenone	32.0	30.0		ug/L		94	54 - 116	1	20
Anthracene	32.0	32.1		ug/L		100	65 - 118	0	20
Benzo[a]anthracene	32.0	34.1		ug/L		107	69 - 121	2	20
Benzo[a]pyrene	32.0	34.7		ug/L		108	69 - 130	2	20
Benzo[b]fluoranthene	32.0	36.5		ug/L		114	66 - 133	2	20
Benzo[g,h,i]perylene	32.0	34.2		ug/L		107	47 - 145	3	20
Benzo[k]fluoranthene	32.0	35.3		ug/L		110	64 - 134	2	20
Bis(2-chloroethoxy)methane	32.0	31.6		ug/L		99	55 - 115	1	20
Bis(2-chloroethyl)ether	32.0	28.3		ug/L		89	46 - 110	0	20
Bis(2-ethylhexyl) phthalate	32.0	33.2		ug/L		104	60 - 132	2	20
4-Bromophenyl phenyl ether	32.0	33.5		ug/L		105	60 - 124	1	20
Butyl benzyl phthalate	32.0	33.6		ug/L		105	63 - 127	2	20
Carbazole	32.0	35.6		ug/L		111	71 - 132	0	20
4-Chloroaniline	32.0	31.4	*	ug/L		98	15 - 125	27	20
4-Chloro-3-methylphenol	32.0	35.4		ug/L		111	63 - 120	2	20
2-Chloronaphthalene	32.0	29.4		ug/L		92	38 - 110	2	20
2-Chlorophenol	32.0	29.7		ug/L		93	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	32.8		ug/L		103	55 - 115	1	20
Chrysene	32.0	32.4		ug/L		101	70 - 126	1	20
Dibenz(a,h)anthracene	32.0	34.2		ug/L		107	59 - 145	3	20
Dibenzofuran	32.0	32.1		ug/L		100	54 - 111	0	20
3,3'-Dichlorobenzidine	32.0	38.7		ug/L		121	57 - 145	2	20
2,4-Dichlorophenol	32.0	36.1		ug/L		113	53 - 123	0	20
Diethyl phthalate	32.0	33.3		ug/L		104	64 - 126	1	20
2,4-Dimethylphenol	32.0	26.3		ug/L		82	42 - 115	3	20
Dimethyl phthalate	32.0	33.5		ug/L		105	66 - 120	1	20
Di-n-butyl phthalate	32.0	33.2		ug/L		104	67 - 125	2	20
4,6-Dinitro-2-methylphenol	64.0	62.6		ug/L		98	34 - 152	4	20
2,4-Dinitrophenol	64.0	58.4		ug/L		91	20 - 140	10	20
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131	0	20
2,6-Dinitrotoluene	32.0	33.8		ug/L		105	66 - 125	1	20
Di-n-octyl phthalate	32.0	34.5		ug/L		108	63 - 133	1	20
Fluoranthene	32.0	33.8		ug/L		106	68 - 127	0	20
Fluorene	32.0	31.5		ug/L		99	54 - 113	2	20
Hexachlorobenzene	32.0	32.5		ug/L		102	63 - 127	0	20
Hexachlorobutadiene	32.0	23.6		ug/L		74	20 - 110	16	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorocyclopentadiene	32.0	23.1		ug/L		72	10 - 110	11	20
Hexachloroethane	32.0	22.1		ug/L		69	20 - 110	18	20
Indeno[1,2,3-cd]pyrene	32.0	34.1		ug/L		107	52 - 150	3	20
Isophorone	32.0	29.6		ug/L		93	55 - 120	3	20
2-Methylnaphthalene	32.0	26.4		ug/L		82	32 - 110	6	20
2-Methylphenol	32.0	31.4		ug/L		98	49 - 113	5	20
3 & 4 Methylphenol	32.0	31.4		ug/L		98	49 - 114	2	20
Naphthalene	32.0	26.4		ug/L		83	32 - 110	9	20
2-Nitroaniline	32.0	34.1		ug/L		106	61 - 126	0	20
3-Nitroaniline	32.0	31.9		ug/L		100	42 - 134	0	20
4-Nitroaniline	32.0	31.5		ug/L		98	40 - 142	1	20
Nitrobenzene	32.0	31.4		ug/L		98	49 - 116	0	20
2-Nitrophenol	32.0	30.7		ug/L		96	51 - 120	1	20
4-Nitrophenol	64.0	47.0		ug/L		73	21 - 110	2	20
N-Nitrosodi-n-propylamine	32.0	30.7		ug/L		96	52 - 122	2	20
N-Nitrosodiphenylamine	32.0	33.0		ug/L		103	63 - 117	7	20
2,2'-oxybis[1-chloropropane]	32.0	27.0		ug/L		84	34 - 110	1	20
Pentachlorophenol	64.0	51.6		ug/L		81	29 - 138	5	20
Phenanthrene	32.0	32.2		ug/L		101	63 - 121	2	20
Phenol	32.0	22.1		ug/L		69	33 - 100	6	20
Pyrene	32.0	32.5		ug/L		102	65 - 122	1	20
2,4,5-Trichlorophenol	32.0	35.7		ug/L		112	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	33.1		ug/L		103	61 - 120	4	20
Caprolactam	32.0	17.3		ug/L		54	25 - 100	6	20
Atrazine	32.0	33.0		ug/L		103	57 - 128	0	20
1,1'-Biphenyl	32.0	30.2		ug/L		94	42 - 110	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*95*		*30 - 123*
2-Fluorophenol (Surr)	*87*		*30 - 110*
Nitrobenzene-d5 (Surr)	*99*		*33 - 139*
Phenol-d5 (Surr)	*69*		*20 - 100*
Terphenyl-d14 (Surr)	*116*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*121*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		10/07/16 10:20	10/07/16 17:13	1
beta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		10/07/16 10:20	10/07/16 17:13	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.040		0.040	0.0032	ug/L		10/07/16 10:20	10/07/16 17:13	1
delta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
Dieldrin	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin ketone	<0.040		0.040	0.017	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Methoxychlor	<0.080		0.080	0.023	ug/L		10/07/16 10:20	10/07/16 17:13	1
Toxaphene	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/07/16 17:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*87*		*30 - 143*	*10/07/16 10:20*	*10/07/16 17:13*	*1*
Tetrachloro-m-xylene	*83*		*30 - 120*	*10/07/16 10:20*	*10/07/16 17:13*	*1*

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.298		ug/L		93	40 - 130
alpha-BHC	0.320	0.307		ug/L		96	70 - 130
alpha-Chlordane	0.320	0.316		ug/L		99	70 - 130
beta-BHC	0.320	0.287		ug/L		90	70 - 130
4,4'-DDD	0.320	0.300		ug/L		94	70 - 130
4,4'-DDE	0.320	0.333		ug/L		104	56 - 130
4,4'-DDT	0.320	0.318		ug/L		99	50 - 137
delta-BHC	0.320	0.315		ug/L		99	70 - 130
Dieldrin	0.320	0.304		ug/L		95	70 - 130
Endosulfan I	0.320	0.231		ug/L		72	40 - 130
Endosulfan II	0.320	0.251		ug/L		78	49 - 130
Endosulfan sulfate	0.320	0.332		ug/L		104	70 - 130
Endrin	0.320	0.298		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.290		ug/L		91	63 - 130
Endrin ketone	0.320	0.279		ug/L		87	54 - 141
gamma-BHC (Lindane)	0.320	0.301		ug/L		94	70 - 130
gamma-Chlordane	0.320	0.281		ug/L		88	63 - 130
Heptachlor	0.320	0.276		ug/L		86	40 - 130
Heptachlor epoxide	0.320	0.286		ug/L		90	70 - 130
Methoxychlor	0.320	0.299		ug/L		93	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*109*		*30 - 143*
Tetrachloro-m-xylene	*84*		*30 - 120*

Lab Sample ID: LCSD 500-355087/3-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.307		ug/L		96	40 - 130	3	20
alpha-BHC	0.320	0.315		ug/L		98	70 - 130	3	20
alpha-Chlordane	0.320	0.324		ug/L		101	70 - 130	2	20
beta-BHC	0.320	0.293		ug/L		92	70 - 130	2	20
4,4'-DDD	0.320	0.310		ug/L		97	70 - 130	3	20
4,4'-DDE	0.320	0.343		ug/L		107	56 - 130	3	20
4,4'-DDT	0.320	0.326		ug/L		102	50 - 137	2	20
delta-BHC	0.320	0.324		ug/L		101	70 - 130	3	20
Dieldrin	0.320	0.313		ug/L		98	70 - 130	3	20
Endosulfan I	0.320	0.238		ug/L		74	40 - 130	3	20
Endosulfan II	0.320	0.259		ug/L		81	49 - 130	3	20
Endosulfan sulfate	0.320	0.347		ug/L		109	70 - 130	4	20
Endrin	0.320	0.309		ug/L		96	69 - 130	4	20
Endrin aldehyde	0.320	0.298		ug/L		93	63 - 130	3	20
Endrin ketone	0.320	0.287		ug/L		90	54 - 141	3	20
gamma-BHC (Lindane)	0.320	0.308		ug/L		96	70 - 130	3	20
gamma-Chlordane	0.320	0.289		ug/L		90	63 - 130	3	20
Heptachlor	0.320	0.283		ug/L		89	40 - 130	3	20
Heptachlor epoxide	0.320	0.294		ug/L		92	70 - 130	3	20
Methoxychlor	0.320	0.311		ug/L		97	47 - 153	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*103*		*30 - 143*
Tetrachloro-m-xylene	*86*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1260	<0.40		0.40	0.070	ug/L		10/07/16 10:20	10/10/16 12:25	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-355087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 127*	*10/07/16 10:20*	*10/10/16 12:25*	*1*
DCB Decachlorobiphenyl	*110*		*30 - 150*	*10/07/16 10:20*	*10/10/16 12:25*	*1*

Lab Sample ID: LCS 500-355087/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.47		ug/L		87	58 - 121
PCB-1260	4.00	4.19		ug/L		105	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 127*
DCB Decachlorobiphenyl	*91*		*30 - 150*

Lab Sample ID: LCSD 500-355087/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.21		ug/L		80	58 - 121	8	20
PCB-1260	4.00	3.71		ug/L		93	62 - 137	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*94*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-355615/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356352 — **Prep Batch: 355615**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:19	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:19	1
Barium	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:19	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:19	1
Calcium	<0.20		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:19	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:19	1
Magnesium	<0.10		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:19	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-355615/1-A
Matrix: Water
Analysis Batch: 356352

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355615

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:19	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:19	1
Potassium	<0.50		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:19	1
Sodium	<1.0		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:19	1

Lab Sample ID: LCS 500-355615/2-A
Matrix: Water
Analysis Batch: 356352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355615

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.15		mg/L		108	80 - 120
Antimony	0.500	0.499		mg/L		100	80 - 120
Arsenic	0.100	0.0920		mg/L		92	80 - 120
Barium	2.00	2.15		mg/L		108	80 - 120
Beryllium	0.0500	0.0540		mg/L		108	80 - 120
Cadmium	0.0500	0.0501		mg/L		100	80 - 120
Calcium	10.0	10.8		mg/L		108	80 - 120
Chromium	0.200	0.212		mg/L		106	80 - 120
Cobalt	0.500	0.519		mg/L		104	80 - 120
Copper	0.250	0.267		mg/L		107	80 - 120
Iron	1.00	1.15		mg/L		115	80 - 120
Lead	0.100	0.0980		mg/L		98	80 - 120
Magnesium	10.0	10.4		mg/L		104	80 - 120
Manganese	0.500	0.526		mg/L		105	80 - 120
Nickel	0.500	0.518		mg/L		104	80 - 120
Potassium	10.0	10.7		mg/L		107	80 - 120
Selenium	0.100	0.0999		mg/L		100	80 - 120
Silver	0.0500	0.0496		mg/L		99	80 - 120
Sodium	10.0	10.7		mg/L		107	80 - 120
Thallium	0.100	0.101		mg/L		101	80 - 120
Vanadium	0.500	0.537		mg/L		107	80 - 120
Zinc	0.500	0.513		mg/L		103	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-355862/12-A
Matrix: Water
Analysis Batch: 356007

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:07	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 500-355862/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356007 — **Prep Batch: 355862**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00198		mg/L		99	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-355895/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:09	1

Lab Sample ID: LCS 500-355895/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	3.61	3.52		mg/L		97	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-356143/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.00	J	5.0	1.5	mg/L			10/14/16 06:03	1

Lab Sample ID: LCS 500-356143/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.6		mg/L		98	80 - 120

Lab Sample ID: 500-118189-1 MS — **Client Sample ID: MW11-GW-10062016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	6.7	B	20.0	24.9		mg/L		91	75 - 125

Lab Sample ID: 500-118189-1 MSD — **Client Sample ID: MW11-GW-10062016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	6.7	B	20.0	25.3		mg/L		93	75 - 125	2	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-355462/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.507	J	1.0	0.27	mg/L			10/07/16 18:24	1

Lab Sample ID: LCS 500-355462/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	9.84		mg/L		98	80 - 120
TOC Result 1	10.0	9.78		mg/L		98	80 - 120
TOC Result 2	10.0	9.90		mg/L		99	80 - 120

Lab Sample ID: MB 500-356087/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			10/11/16 18:53	1

Lab Sample ID: LCS 500-356087/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.0		mg/L		100	80 - 120
TOC Result 1	10.0	9.92		mg/L		99	80 - 120
TOC Result 2	10.0	10.1		mg/L		101	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-355125/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/07/16 13:25	1

Lab Sample ID: LCS 500-355125/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355125

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	210		mg/L		105	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-356123/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356271 — **Prep Batch: 356123**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.121	J	0.20	0.10	mg/L		10/13/16 21:45	10/13/16 23:57	1

Lab Sample ID: MB 500-356123/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356419 — **Prep Batch: 356123**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		10/13/16 21:45	10/16/16 19:31	1

Lab Sample ID: LCS 500-356123/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356271 — **Prep Batch: 356123**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.44		mg/L		98	80 - 120

Lab Sample ID: LCS 500-356123/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356419 — **Prep Batch: 356123**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.52		mg/L		101	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-355172/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355172

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:40	1

Lab Sample ID: LCS 500-355172/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355172

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.102		mg/L		102	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-356397/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356397

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:15	1

Method: SM 4500 NO3 F - Nitrogen, Nitrate (Continued)

Lab Sample ID: LCS 500-356397/5
Matrix: Water
Analysis Batch: 356397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate Nitrite			1.00	1.02		mg/L		102	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1
Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355490	10/11/16 17:26	EMA	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		5	355044	10/07/16 14:58	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 20:06	PJG	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355347	10/10/16 13:26	BJH	TAL CHI
Dissolved	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:32	PJ1	TAL CHI
Total/NA	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:27	PJ1	TAL CHI
Dissolved	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 09:50	MJD	TAL CHI
Total/NA	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 09:49	MJD	TAL CHI
Total/NA	Analysis	9034		1	355895		CLB	TAL CHI
					(Start)	10/12/16 23:38		
					(End)	10/12/16 23:42		
Total/NA	Analysis	9038		1	356143		CLB	TAL CHI
					(Start)	10/14/16 06:12		
					(End)	10/14/16 06:14		
Total/NA	Analysis	9060A		5	356087	10/12/16 00:44	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/18/16 11:13	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	355125		SMO	TAL CHI
					(Start)	10/07/16 13:31		
					(End)	10/07/16 13:32		
Total/NA	Prep	SM 4500 NH3 B			356123	10/13/16 21:45	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	356419	10/16/16 19:37	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355172		EAT	TAL CHI
					(Start)	10/07/16 16:43		
					(End)	10/07/16 16:43		
Total/NA	Analysis	SM 4500 NO3 F		1	356397	10/14/16 21:50	HMW	TAL CHI

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2
Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355490	10/11/16 16:59	EMA	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		1	355044	10/07/16 13:30	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 20:25	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05

Matrix: Water

Date Received: 10/06/16 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355347	10/10/16 13:42	BJH	TAL CHI
Dissolved	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:52	PJ1	TAL CHI
Total/NA	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:48	PJ1	TAL CHI
Dissolved	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 09:53	MJD	TAL CHI
Total/NA	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 09:52	MJD	TAL CHI
Total/NA	Analysis	9034		1	355895		CLB	TAL CHI
					(Start)	10/12/16 23:42		
					(End)	10/12/16 23:46		
Total/NA	Analysis	9038		1	356143		CLB	TAL CHI
					(Start)	10/14/16 06:16		
					(End)	10/14/16 06:17		
Total/NA	Analysis	9060A		1	355462	10/08/16 01:11	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/18/16 11:13	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	355125		SMO	TAL CHI
					(Start)	10/07/16 13:32		
					(End)	10/07/16 13:34		
Total/NA	Prep	SM 4500 NH3 B			356123	10/13/16 21:45	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	356271	10/14/16 00:48	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355172		EAT	TAL CHI
					(Start)	10/07/16 16:43		
					(End)	10/07/16 16:44		
Total/NA	Analysis	SM 4500 NO3 F		1	356397	10/14/16 21:52	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-118189

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.3

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key: 4° / to 4° / > 4° / > 4° / >l to 4°

500-118189 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TPH	TSS, SO4, NO2	Dissolved Gases	Comments
1		MW-11-GW-10062016	10/6/16	0830	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- Diss Metals
2		MW-10-GW-10052016	10/5/16	1705	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Field filtered

- MW-11 sample received with headspace in VOC vial. Unable to remove air bubbles
- Diss Gas samples, Not able to remove all headspace

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/6/16	1225	[signature]	TA-CHI	10/6/16	1225
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped
Hand Delivered ☒

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
QL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Ben
312-420-3651

TAL-4124-500 (1209)

10/19/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118189-1

Login Number: 118189
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ARCADIS Design & Consultancy for natural and built assets

Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls (PCBs), Metals, and Miscellaneous General Chemistry Analyses

SDGs #: 500-118024, 500-118070, 500-118151, and 500-118189

Analyses Performed By:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #: 26665
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 500-118024, 500-118070, 500-118151, and 500-118189 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chains of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	Pest/ PCB	Metal	Misc	Diss. Gases
500-118024	MW-01-GW-10032016	500-118024-1	Water	10/3/2016		X	X	X	X	X	X
	MW-02-GW-10032016	500-118024-2	Water	10/3/2016		X	X	X	X	X	X
500-118070	MW-03-GW-10042016	500-118070-1	Water	10/4/2016		X	X	X	X	X	X
	MW-04-GW-10042016	500-118070-2	Water	10/4/2016		X	X	X	X	X	X
	MW-05-GW-10042016	500-118070-3	Water	10/4/2016		X	X	X	X	X	X
	MW-07-GW-10042016	500-118070-4	Water	10/4/2016		X	X	X	X	X	X
500-118151	MW-13-GW-10042016	500-118151-1	Water	10/4/2016		X	X	X	X	X	X
	DUP-01(10042016)	500-118151-2	Water	10/4/2016	MW-13-GW-10042016	X	X	X	X	X	X
	MW-08-GW-10052016	500-118151-3	Water	10/5/2016		X	X	X	X	X	X
	MW-09-GW-10052016	500-118151-4	Water	10/5/2016		X	X	X	X	X	X
	MW-06-GW-10052016	500-118151-5	Water	10/5/2016		X	X	X	X	X	X
	DUP-2(10052016)	500-118151-6	Water	10/5/2016	MW-06-GW-10052016	X	X	X	X	X	X
500-118189	MW11-GW-10062016	500-118189-1	Water	10/6/2016		X	X	X	X	X	X
	MW10-GW-10052016	500-118189-2	Water	10/5/2016		X	X	X	X	X	X

Notes:

1. Misc - Miscellaneous parameters include sulfate, sulfide, total organic carbon (TOC), total suspended solids (TSS), ammonia, nitrite, nitrate, and nitrate+nitrite.
2. The dissolved gases analysis was sub-contracted out to Pace/Microseeps, located in Pittsburg, Pennsylvania (SDG number 20508, 20509, 20524, and 20525).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, 8081B, 8082A, and Method AM20GAx (Dissolved gases). Data were reviewed in accordance with *USEPA National Functional Guidelines for Organic Data Review* (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected; the analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis (preserved)	Cool to < 6 °C; pH < 2 with HCl
		Aromatics: 7 days from collection to analysis Non-aromatics: 14 days from collection to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

Each target compound associated with the continuing calibration standard must exhibit a RRF value

greater than control limit (0.05) and a percent difference (%D) from the initial calibration within the control limit (20%).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

Samples	Initial/Continuing	Compound	Criteria
SDG 500-118024: MW-01-GW-10032016 MW-02-GW-10032016	CCV %D	Acetone	-29.5 %
SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016)	CCV %D	1,2-Dibromo-3-chloropropane	-21.1 %
	CCV %D	Bromomethane	-22.2 %
SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	CCV %D	Acetone	-22.1 %
	CCV %D	Bromomethane	-22.8 %
	CCV %D	Methyl N-Butyl Ketone (2-Hexanone)	-21.0 %
	CCV %D	1,2-Dibromo-3-chloropropane	-24.9 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibrations	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibrations	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibrations	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Sample	Surrogate	Recovery
SDG 500-118024: MW-01-GW-10032016 (undiluted analysis)	Dibromofluoromethane	< LL but > 10%
	1,2-Dichloroethane-d_4 Toluene-d_8 4-Bromofluorobenzene	Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL (Upper Control Limit)	Non-detect	No Action
	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
D - Surrogates diluted below the calibration curve	Non-detect	UJ[1]
	Detect	J[1]

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

Note: Sample MW-01-GW-10032016 was also analyzed at a ten-fold (10x) dilution because the compound methyl isobutyl ketone exceeded the calibration range in the initial analysis. The surrogate recoveries in the dilution analysis were within the control limits. Only methyl isobutyl ketone was reported from the dilution analysis and therefore it does not warrant qualification.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Samples MW-05-GW-10042016 and MW10-GW-10052016 were used in the MS/MSD analyses. The MS/MSDs exhibited acceptable recoveries and RPDs.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	1,1-Dichloroethane	10 U	7.6 J	AC
	1,2-Dichlorobenzene	12	12	0.0 %
	Benzene	400	370	7.8 %
	cis-1,2-Dichloroethene	19	16	17.1 %
	Ethylbenzene	1000	970	3.0 %
	Isopropylbenzene	110	110	0.0 %
	Toluene	1700	1500	12.5 %
	Total Xylenes	7000	7100	1.4 %
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	1,2-Dichlorobenzene	2.6	3.2	20.7 %
	1,2-Dichloroethane	1.3	1.3	0.0 %
	1,4-Dichlorobenzene	14	18	25 %
	2-Butanone (MEK)	19	20	5.1 %
	4-Methyl-2-Pentanone	44	49	10.8 %
	Acetone	41	44	7.1 %
	Benzene	6.6	7.6	14.1 %
	cis-1,2-Dichloroethene	5.3	5.5	3.7 %
	Ethylbenzene	63	78	21.3 %
	Isopropylbenzene	4.0	5.1	24.2 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Toluene	160	200	22.2 %
	Total Xylenes	240	220	8.7 %
	Vinyl chloride	4.4	5.3	18.6 %

AC Acceptable
J Estimated (result is < RL)
U Not detected

The field duplicate samples exhibited acceptable results.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCS

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision RPD		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

DISSOLVED GASES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
AM20GAX	Water	14 days from collection to analysis	Cool to <6 °C; pH > 10

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to Ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a correlation coefficient greater than 0.995.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All compounds associated with the calibrations were within the specified control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample from within these SDGs.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Carbon Dioxide	82	82	0.0 %
	Methane	21000	20000	4.9 %
	Nitrogen	10	10	0.0 %
	Oxygen	2.7	3.0	10.5 %
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Carbon Dioxide	38	40	5.1 %
	Methane	20000	21000	4.9 %
	Nitrogen	10	10	0.0 %
	Oxygen	1.9	2.3	19.0 %

The field duplicate samples exhibited acceptable results.

7. System Performance and Overall Assessment

Samples MW-06-GW-10052016 and DUP-2(10052016) were diluted prior to analysis due to foaming observed during sample preparation procedures.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Thermal Conductivity Detector (GC/TCD)					
Tier II Validation					
Holding times/Temperature/Preservation		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method/Calibration blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) (%R)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike Sample (MS) (%R)	X				X
Matrix Spike Duplicate Sample (MSD) (%R)	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample (RPD)	X				X
Field Duplicate Sample (RPD)		X		X	
Surrogate Spike Recoveries	X				X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration correlation coefficients		X		X	
Continuing calibration RRFs					X
Continuing calibration %Ds		X		X	
Compound identification and quantitation		X		X	
A. Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited concentrations less than the MDL, except for the compound(s) listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Sample	Analyte	Sample Result	Qualification
SDG 500-118070: MW-05-GW-10042016	2-Methylnaphthalene	Detected sample results < RL and < BAL	"UB" at the Reporting Limit (RL)

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control

limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

Samples	Initial/Continuing	Compound	Criteria
SDG 500-118024: MW-02-GW-10032016	ICV %RSD	Benzaldehyde	39.8 %
		4-Chloroaniline	35.0 %
	CCV %D	Benzaldehyde	-43.8 %
		4-Chloroaniline	+26.4 %
		4-Nitroaniline	-21.4 %
SDG 500-118024: MW-01-GW-10032016	CCV %D	Benzaldehyde	-44.0 %
		Caprolactam	+72.5 %
		Carbazole	+25.5 %
		Hexachlorocyclopentadiene	-35.7 %
		Nitrobenzene	+20.2 %
		4-Nitroaniline	+48.4 %
SDG 500-118070: MW-04-GW-10042016 MW-05-GW-10042016	ICV %RSD	Benzaldehyde	31.9 %
	CCV %D	2,2-Oxybis(1-Chloropropane)	-21.7 %
SDG 500-118070: MW-03-GW-10042016 MW-07-GW-10042016	CCV %D	Benzaldehyde	-43.8 %
		Hexachlorocyclopentadiene	-24.2 %
		Pentachlorophenol	-24.4 %
SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016) SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	ICV %RSD	Benzaldehyde	39.8 %
		4-Chloroaniline	35.0 %
	CCV %D	Benzaldehyde	-45.6 %
		p-Chloroaniline	+49.9 %
		2,4-Dinitrophenol	-36.9 %
		2-Methyl-4,6-dinitrophenol	-20.5 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	

Initial/Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 20% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:
[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Samples associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Samples	Internal Standard	Response
SDG 500-118151: MW-06-GW-10052016 DUP-2(10052016)	1,4-Dichlorobenzene-d_4 Naphthalene-d_8 Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12}	Acceptable
	Perylene-d_{12}	< LL but > 25%

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J

Control limit	Sample Result	Qualification
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample associated with these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries within the control limits; however, samples associated with LCS/LCSDs exhibiting RPDs greater than the control limit are presented in the following table.

Samples	Compound
SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016) SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	4-Chloroaniline

The criteria used to evaluate the RPD between the LCS and LCSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	1,1-Biphenyl	1.8 J	18 U	AC
	2,4-Dimethylphenol	22 J	16 J	31.6 %
	2-Methylnaphthalene	10	8.1	21.0 %
	2-Methylphenol	5.4 J	4.8 J	11.8 %
	4-Methylphenol	29	22	27.5 %
	Acenaphthylene	2.2 J	1.7 J	25.6 %
	Acetophenone	26	20	26.1 %
	Benzo(a)anthracene	0.73 U	0.43 J	AC
	Chrysene	1.8 U	0.35 J	AC
	Diethyl phthalate	12	8.9	29.7 %
	Di-n-butyl phthalate	3.8 J	3.4 J	11.1 %
	Fluorene	1.0 J	3.6 U	AC
	Naphthalene	140	110	24.0 %
	N-nitrosodiphenylamine	11	7.7	AC
	Phenol	17 J	12 J	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	2,4-Dimethylphenol	79	77	2.6 %
	2-Methylnaphthalene	2.2 J	2.1 J	AC
	2-Methylphenol	21	17	21.1 %
	4-Methylphenol	160	150	6.5 %
	Acetophenone	7.2 J	6.6 J	AC
	bis-(2-Ethylhexyl) phthalate	120	120	0.0 %
	Naphthalene	14	13	7.4 %
	N-nitrosodiphenylamine	3.2 J	7.4 U	AC

AC Acceptable
J Estimated (result is < RL)
U Not detected

The field duplicate samples exhibited acceptable results.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCS

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X	X		
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard response		X	X		
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All compounds associated with the initial and continuing calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample

preparation to evaluate overall laboratory performance and efficiency of the analytical technique. Pesticide analysis requires that at least one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Samples	Surrogate	Recovery
SDG 500-118070: MW-07-GW-10042016	Tetrachloro-m-xylene	> UL
SDG 500-118151: DUP-2(10052016)	Decachlorobiphenyl	< LL but > 10%

UL Upper control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL (Upper Control Limit)	Non-detect	No Action
	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	All compounds	U	U	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	All compounds	U	U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

Target compounds were not detected in any of the samples.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

PESTICIDES: SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column %D $\leq$ 40% (If dual column is performed for reporting - not confirmation)	X				X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference
%D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB

analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All samples exhibited surrogate recoveries within the specified control limits. Samples MW-07-GW-10042016, MW-06-GW-10052016, and DUP-2(10052016) exhibited recoveries of the surrogate tetrachloro-m-xylene that were less than the lower control limit in both the primary and confirmation columns. The laboratory reported Aroclor results from both columns for these samples. The concentrations of the detected Aroclors from the confirmation column were greater than those reported from the primary column for these samples. The confirmation column results were preferentially retained as being the more conservative results.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	All Aroclors	0.37 U	0.37 U	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Aroclor 1242	5.3	4.9	7.8 %

AC Acceptable
U Not detected

The field duplicate samples exhibited acceptable results.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (RPD) of detected sample results must be less than 40%.

All detected Aroclors exhibited acceptable %Ds between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBS

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X		X	
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation
%R - percent recovery,
RPD - relative percent difference,
%D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method 353.2, USEPA SW-846 Methods 6010C, 7470A, 9034, 9038, and 9060A, and Standard Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F. Data were reviewed in accordance with *USEPA National Functional Guidelines for Inorganic Data Review* (October 2004).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
  - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
  - E The reported value is estimated due to the presence of interference.
  - N Spiked sample recovery is not within the control limits.
  - * Duplicate analysis is not within the control limits.
- Validation Qualifiers
  - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
  - UB Analyte considered non-detect at the listed value due to associated blank contamination.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3
SW-846 7470A	Water	28 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, except for the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) from the data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Samples	Analyte	Sample Result	Qualification
SDG 500-118151: DUP-01(10042016) MW-09-GW-10052016 MW-06-GW-10052016	Dissolved Selenium (Initial calibration blank)	Detected sample results < RL and < BAL	"UB" at the RL

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference

(%D) less than the control limit (10%).

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within the control limits.

All initial and continuing calibration verification standards were within the control limits.

3.3 Reporting limit (RL) Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the reporting limit. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), or potassium (K). The RL check standard must exhibit recoveries between 70-130% (50-150% for antimony (Sb), lead (Pb), and thallium (Tl)).

All analytes associated with RL standard recoveries were within the control limits except for the analytes presented in the following table.

Samples	Analyte	RL Check Standard Recovery
SDG 500-118024: MW-01-GW-10032016 MW-02-GW-10032016 SDG 500-118070: MW-03-GW-10042016 MW-04-GW-10042016 MW-05-GW-10042016 MW-07-GW-10042016	Dissolved Copper Total Copper	277 %

The criteria applied to evaluate the RL check standard criteria are presented below. In the case of a calibration deviation, the sample results are qualified.

Analytes	Control Limit	Sample Result	Qualification
All analytes except Al, Ba, Ca, Fe, Mg, K, & Na	RL %R < 50% (< 30% for Sb, Pb, Tl)	Sample results ≥ MDL but < 2x RL	R
		Non-detect sample results	R
		Detected sample results ≥ 2x RL	J
	RL %R 50-69% (30-49% for Sb, Pb, Tl)	Sample results ≥ MDL but < 2x RL	J
		Non-detect sample results	UJ
		Detected sample results ≥ 2x RL	No Action
	%R >130% but < 180% (> 150% but < 200% for Sb, Pb, Tl)	Sample results ≥ MDL but < 2x RL	J
		Non-detect sample results	No Action
		Detected sample results ≥ 2x RL	No Action
	RL %R >180% (> 200% for Sb, Pb, Tl)	Sample results ≥ MDL	R

3.4 ICP Interference Check Sample (ICS)

The ICS verifies the laboratory's interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on samples where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS analysis was not performed on a sample from within these SDGs.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

The laboratory duplicate sample analysis was not performed on a sample from within these SDGs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Total Aluminum	0.11 J	0.11 J	AC
	Dissolved Aluminum	0.20 U	0.15 J	AC
	Total Arsenic	0.0034 J	0.0047 J	AC
	Dissolved Arsenic	0.010 U	0.0047 J	AC
	Total Barium	0.26	0.28	7.4 %
	Dissolved Barium	0.23	0.25	8.3 %
	Total Calcium	84	85	1.2 %
	Dissolved Calcium	96	89	7.6 %
	Total Chromium	0.0059 J	0.0052 J	AC
	Dissolved Chromium	0.0038 J	0.0046 J	AC
	Total Cobalt	0.0021 J	0.0023 J	AC
	Dissolved Cobalt	0.0015 J	0.0017 J	AC
	Total Copper	0.0029 J	0.0040 J	AC
	Total Iron	8.9	9.6	7.6 %

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Dissolved Iron	6.4	7.6	17.1 %
	Total Lead	0.0036 J	0.0077	AC
	Total Magnesium	52	55	5.6 %
	Dissolved Magnesium	46	50	8.3 %
	Total Manganese	0.38	0.40	5.1 %
	Dissolved Manganese	0.34	0.36	5.7 %
	Total Nickel	0.0079 J	0.0069 J	AC
	Dissolved Nickel	0.0072 J	0.0063 J	AC
	Total Potassium	74	77	4.0 %
	Dissolved Potassium	67	71	5.8 %
	Dissolved Selenium	0.010 U	0.0065 J	AC
	Total Sodium	220	230	4.4 %
	Dissolved Sodium	230	230	0.0 %
	Total Vanadium	0.0031 J	0.0035 J	AC
	Dissolved Vanadium	0.0036 J	0.0036 J	AC
	Total Zinc	0.011 J	0.013 J	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Total Aluminum	0.55 J	0.56 J	AC
	Total Arsenic	0.030 J	0.019 J	AC
	Dissolved Arsenic	0.028 J	0.022 J	AC
	Total Barium	0.37	0.40	7.8 %
	Dissolved Barium	0.35	0.37	5.6 %
	Total Calcium	11	12	8.7 %
	Dissolved Calcium	11	11	0.0 %
	Total Chromium	0.19	0.20	5.1 %
	Dissolved Chromium	0.18	0.19	5.4 %
	Total Cobalt	0.036	0.046	24.4 %
	Dissolved Cobalt	0.038	0.046	19 %
	Total Copper	0.016 J	0.022 J	AC
	Total Iron	2.7 B	2.6	3.8 %
	Dissolved Iron	2.1 B	2.4	13.3 %
	Total Lead	0.22	0.24	8.7 %
	Dissolved Lead	0.029	0.025 U	AC
	Total Magnesium	28	30	6.9 %
	Dissolved Magnesium	29	30	3.4 %
	Total Nickel	0.14	0.17	19.4 %
	Dissolved Nickel	0.15	0.17	12.5 %
	Total Potassium	650	700	7.4 %
	Dissolved Potassium	690	710	2.9 %

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Dissolved Selenium	0.039 J	0.050 U	AC
	Total Sodium	3200	3500	9.0 %
	Dissolved Sodium	3300	3500	5.9 %
	Total Vanadium	0.065	0.064	1.6 %
	Dissolved Vanadium	0.053	0.058	9.0 %
	Total Zinc	0.20	0.31	AC
	Dissolved Zinc	0.056 J	0.051 J	AC
	Total Mercury	0.00023	0.00018 J	AC

The field duplicate samples exhibited acceptable results.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit recoveries between the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be no greater than the established acceptance limit of 20%.

All analytes associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

7. Serial Dilution (SD) Analysis

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

Sample MW-07-GW-10042016 was used in the serial dilution analyses. All analytes associated with the serial dilution analyses exhibited %Ds within the control limits except for those presented in the following table.

Sample	Analytes	SD %D
SDG 500-118070: MW-07-GW-10042016	Dissolved Barium	13 %
	Dissolved Magnesium	17 %
	Dissolved Potassium	15 %
	Total Sodium	13 %
	Dissolved Sodium	20 %

The criteria used to evaluate SD recoveries are presented in the following table. In the case of SD exceedance, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
SD %D > 10%	Non-detect	UJ
	Detect	J

8. Assessment of Dissolved versus Total Results

The results for dissolved metal analytes should be less than 120% of the associated total metal result for those analytes that are at least five times the reporting limit (RL).

The calculated %D between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: SW-846 6010C and 7470A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
ICP Serial Dilution %D		X	X		
Total vs. Dissolved		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
RL Standard Recovery		X	X		
ICP Interference Check		X		X	
ICP-MS Internal Standards					X
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Nitrite-N by SM 4500-NO2-B	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate-N by USEPA 353.2	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate+Nitrite as N by SM 4500-NO3-F	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Sulfate by SW-846 9038A	Water	28 days from collection to analysis	Cool to < 6 °C.
Sulfide by SW-846 9034	Water	7 days from collection to analysis	Cool to < 6 °C.
Total Organic Carbon (TOC) by SW-846 9060A	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Total Suspended Solids (TSS) by SM 2540D	Water	7 days from collection to analysis	Cool to < 6 °C

The analyses that exceeded the holding time are presented in the following table; all other holding times were met.

Samples	Analysis	Holding Time	Criteria
SDG 500-118024: MW-01-GW-10032016 MW-02-GW-10032016 SDG 500-118070: MW-03-GW-10042016 MW-04-GW-10042016 MW-05-GW-10042016 MW-07-GW-10042016 SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016) SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	Nitrate-N by USEPA 353.2	> 48 Hours but < 28 Days	< 48 Hours

Note: Due to the tendency of nitrite converting into nitrate, nitrate results for samples analyzed greater than 48 hours after collection should be considered as nitrate+nitrite. The nitrite results for the samples which were analyzed for nitrate after 48 hours (but within 28 days) were non-detects. Therefore, the nitrate results do not require qualification.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination

which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, except for the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Samples	Analyte	Sample Result	Qualification
SDG 500-118024: MW-02-GW-10032016 SDG 500-118070: MW-03-GW-10042016 MW-05-GW-10042016 SDG 500-118151: MW-08-GW-10052016 MW-09-GW-10052016	Sulfate	Detected sample results < RL and < BAL	"UB" at the RL
SDG 500-118189: MW11-GW-10062016	Sulfate	Detected sample results > RL and < BAL	"UB" at detected sample concentration

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within the control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate Sample (MS/MSD)/Laboratory Duplicate Sample Analysis

MS/MSD and laboratory duplicate sample data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and any laboratory

qualifiers will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Samples MW-01-GW-10032016, MW-05-GW-10042016, MW-13-GW-10042016, MW-09-GW-10052016, and MW11-GW-10062016 were used in the MS/MSD analyses. All analytes associated with MS/MSD recoveries were within the control limits except for the following analyte present in the table below.

Sample	Analyte	MS Recovery	MSD Recovery
SDG 500-118151: MW-09-GW-10052016	TOC	68 %	68 %

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are only applied to the parent sample result.

Control limit	Sample Result	Qualification
MS/MSD recovery between 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD recovery < 30%	Non-detect	R
	Detect	J
MS/MSD recovery > 125%	Non-detect	No Action
	Detect	J

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample RPD criterion is applied when parent and duplicate sample concentrations are at least five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

MS/MSD analysis was performed in lieu of the laboratory duplicate sample analysis. The MS/MSD recoveries exhibited acceptable RPD, except as where indicate above.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Total Suspended Solids	24	25	4.1 %
	Ammonia Nitrogen	79	80	1.3 %
	Sulfide	1.0 U	0.57 J	AC
	Sulfate	21	19	10.0 %
	Total Organic Carbon	53	54	1.9 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Nitrate-N	0.053 J	0.058 J	AC
	Total Suspended Solids	7.0	7.5	6.9 %
	Total Ammonia Nitrogen	790	780	1.3 %
	Nitrate/Nitrite	0.053 J	0.058 J	AC
	Sulfide	8.0	8.6	7.2 %
	Sulfate	12 J	50 U	AC
	Total Organic Carbon	530	520	1.9 %

AC Acceptable
J Estimated (result is < RL)
U Not detected

The field duplicate samples exhibited acceptable results.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

The LCS analyses exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 353.2, SW-846 9034, 9038, 9060A, SM 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference,
%D – difference

VALIDATION PERFORMED BY: Dennis Dyke

SIGNATURE:

DATE: November 29, 2016

PEER REVIEW: Dennis Capria

DATE: December 7, 2016

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118024 COC

Chain of Custody Record

Lab Job #: 500-118024

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 3.4

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0002.00004
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhofer
Lab PM: Therese Hargraves

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Parameter: Preservative	8	3	3	6	5	2	8	9	1	Comments
							Parameter	SVOCs, PCBs, Pesticides	Total metals	Dissolved metals	Ammonia, NO3 NO2	Sulfide	TOC	TSS, SO4, NO2	Dissolved Gases	VOC	
1		MW-01-GW-10032016	10/3/16	1105	18	W		—	—	—	—	—	—	—	—	—	P, 3S Metals
2		MW-02-GW-10032016	10/3/16	1350	18	W		—	—	—	—	—	—	—	—	—	Field filtered
																	- Poor meniscus
																	formed in diss
																	Gas samples so
																	bubbles couldn't be
																	removed.

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/3/16	1600	David Beden	TA	10/3/16	16:00
David Beden	TA	10/3/16	16:38	[signature]	TA-CHI	10/4/16	0730
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**110**	J	5.0	1.7	ug/L			10/05/16 13:55	1
Benzene	**36**	J	0.50	0.15	ug/L			10/05/16 13:55	1
Bromodichloromethane	<1.0	UJ	1.0	0.37	ug/L			10/05/16 13:55	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			10/05/16 13:55	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/05/16 13:55	1
Carbon disulfide	<2.0	UJ	2.0	0.45	ug/L			10/05/16 13:55	1
Carbon tetrachloride	<1.0	UJ	1.0	0.38	ug/L			10/05/16 13:55	1
Chlorobenzene	**5.3**	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
Chloroethane	<1.0	UJ	1.0	0.51	ug/L			10/05/16 13:55	1
Chloroform	<1.0	UJ	1.0	0.37	ug/L			10/05/16 13:55	1
Chloromethane	<1.0	UJ	1.0	0.32	ug/L			10/05/16 13:55	1
cis-1,2-Dichloroethene	<1.0	UJ	1.0	0.41	ug/L			10/05/16 13:55	1
cis-1,3-Dichloropropene	<1.0	UJ	1.0	0.42	ug/L			10/05/16 13:55	1
Cyclohexane	**1.5**	J	1.0	0.49	ug/L			10/05/16 13:55	1
Dibromochloromethane	<1.0	UJ	1.0	0.49	ug/L			10/05/16 13:55	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/05/16 13:55	1
1,2-Dibromoethane	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,2-Dichlorobenzene	**1.6**	J	1.0	0.33	ug/L			10/05/16 13:55	1
1,3-Dichlorobenzene	<1.0	UJ	1.0	0.40	ug/L			10/05/16 13:55	1
1,4-Dichlorobenzene	**2.8**	J	1.0	0.36	ug/L			10/05/16 13:55	1
Dichlorodifluoromethane	<2.0	UJ	2.0	0.67	ug/L			10/05/16 13:55	1
1,1-Dichloroethane	<1.0	UJ	1.0	0.41	ug/L			10/05/16 13:55	1
1,2-Dichloroethane	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,1-Dichloroethene	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,2-Dichloropropane	<1.0	UJ	1.0	0.43	ug/L			10/05/16 13:55	1
Ethylbenzene	**24**	J	0.50	0.18	ug/L			10/05/16 13:55	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			10/05/16 13:55	1
Isopropylbenzene	**11**	J	1.0	0.39	ug/L			10/05/16 13:55	1
Methyl acetate	<5.0	UJ	5.0	2.0	ug/L			10/05/16 13:55	1
Methylcyclohexane	**1.4**	J	1.0	0.32	ug/L			10/05/16 13:55	1
Methylene Chloride	<5.0	UJ	5.0	1.6	ug/L			10/05/16 13:55	1
Methyl Ethyl Ketone	**110**	J	5.0	2.1	ug/L			10/05/16 13:55	1
Methyl tert-butyl ether	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
Styrene	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,1,2,2-Tetrachloroethane	<1.0	UJ	1.0	0.40	ug/L			10/05/16 13:55	1
Tetrachloroethene	<1.0	UJ	1.0	0.37	ug/L			10/05/16 13:55	1
Toluene	**13**	J	0.50	0.15	ug/L			10/05/16 13:55	1
trans-1,2-Dichloroethene	<1.0	UJ	1.0	0.35	ug/L			10/05/16 13:55	1
trans-1,3-Dichloropropene	<1.0	UJ	1.0	0.36	ug/L			10/05/16 13:55	1
1,2,4-Trichlorobenzene	<1.0	UJ	1.0	0.34	ug/L			10/05/16 13:55	1
1,1,1-Trichloroethane	<1.0	UJ	1.0	0.38	ug/L			10/05/16 13:55	1
1,1,2-Trichloroethane	<1.0	UJ	1.0	0.35	ug/L			10/05/16 13:55	1
Trichloroethene	<0.50	UJ	0.50	0.16	ug/L			10/05/16 13:55	1
Trichlorofluoromethane	<1.0	UJ	1.0	0.43	ug/L			10/05/16 13:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	UJ	1.0	0.46	ug/L			10/05/16 13:55	1
Vinyl chloride	**0.33**	J	0.50	0.20	ug/L			10/05/16 13:55	1
Xylenes, Total	**27**	J	1.0	0.22	ug/L			10/05/16 13:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*71 - 120*		*10/05/16 13:55*	*1*
Dibromofluoromethane	*14*	*X*	*70 - 120*		*10/05/16 13:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*10/05/16 13:55*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/05/16 13:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
methyl isobutyl ketone	**230**		50	22	ug/L			10/06/16 11:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*71 - 120*		*10/06/16 11:44*	*10*
Dibromofluoromethane	*101*		*70 - 120*		*10/06/16 11:44*	*10*
1,2-Dichloroethane-d4 (Surr)	*120*		*71 - 127*		*10/06/16 11:44*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/06/16 11:44*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**6.9**		0.75	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		10/04/16 15:42	10/13/16 00:58	1
Acetophenone	**2.2**	**J**	3.8	0.50	ug/L		10/04/16 15:42	10/13/16 00:58	1
Anthracene	<0.75		0.75	0.25	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		10/04/16 15:42	10/13/16 00:58	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		10/04/16 15:42	10/13/16 00:58	1
Carbazole	**6.7**	**J**	3.8	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chloroaniline	**13**		7.5	1.5	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		10/04/16 15:42	10/13/16 00:58	1
Chrysene	<0.38		0.38	0.051	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dibenzofuran	**0.91**	**J**	1.5	0.20	ug/L		10/04/16 15:42	10/13/16 00:58	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		10/04/16 15:42	10/13/16 00:58	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dimethylphenol	**5.9**	**J**	7.5	1.4	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		10/04/16 15:42	10/13/16 00:58	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		10/04/16 15:42	10/13/16 00:58	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,6-Dinitrotoluene	<0.75		0.75	0.056	ug/L		10/04/16 15:42	10/13/16 00:58	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		10/04/16 15:42	10/13/16 00:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.75		0.75	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
Fluorene	**1.7**		0.75	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorocyclopentadiene	<15	UJ	15	4.8	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		10/04/16 15:42	10/13/16 00:58	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		10/04/16 15:42	10/13/16 00:58	1
Isophorone	<1.5		1.5	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Methylnaphthalene	**5.0**		1.5	0.049	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Methylphenol	**2.3**		1.5	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
3 & 4 Methylphenol	**10**		1.5	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		10/04/16 15:42	10/13/16 00:58	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Nitrophenol	<15		15	5.6	ug/L		10/04/16 15:42	10/13/16 00:58	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		10/04/16 15:42	10/13/16 00:58	1
N-Nitrosodiphenylamine	<0.75		0.75	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		10/04/16 15:42	10/13/16 00:58	1
Pentachlorophenol	<15		15	3.0	ug/L		10/04/16 15:42	10/13/16 00:58	1
Phenanthrene	**0.88**		0.75	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
Pyrene	<0.75		0.75	0.32	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzaldehyde	<30	UJ	30	11	ug/L		10/04/16 15:42	10/13/16 00:58	1
Caprolactam	<7.5		7.5	1.1	ug/L		10/04/16 15:42	10/13/16 00:58	1
Atrazine	<3.8		3.8	0.47	ug/L		10/04/16 15:42	10/13/16 00:58	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*30 - 123*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Nitrobenzene-d5 (Surr)	*81*		*33 - 139*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
2,4,6-Tribromophenol (Surr)	*111*		*30 - 150*	*10/04/16 15:42*	*10/13/16 00:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**230**		7.5	2.3	ug/L		10/04/16 15:42	10/06/16 02:49	10
Phenol	**160**		38	5.1	ug/L		10/04/16 15:42	10/06/16 02:49	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 16:27	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 16:27	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/05/16 16:27	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/05/16 16:27	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1
Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 16:27	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/05/16 16:27	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 16:27	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 16:27	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 16:27	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/05/16 16:27	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:27	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/05/16 16:27	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*110*		*30 - 143*	*10/05/16 07:55*	*10/05/16 16:27*	*1*
Tetrachloro-m-xylene	*86*		*30 - 120*	*10/05/16 07:55*	*10/05/16 16:27*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*71*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:11*	*1*
DCB Decachlorobiphenyl	*103*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.42**		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:01	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:01	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Barium	**0.82**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:01	1
Calcium	**730**		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 18:00	5
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:01	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:01	1
Iron	**0.12**	**J**	0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:01	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 17:55	1
Magnesium	**0.25**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.0045	J	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Nickel	0.023		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:01	1
Potassium	52		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:01	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:01	1
Sodium	200		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:01	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:01	1
Zinc	0.015	J	0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.40		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:06	1
Antimony	0.0079	J	0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:06	1
Arsenic	0.0045	J	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Barium	0.81		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:06	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:06	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:06	1
Calcium	790		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 18:07	5
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:06	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:06	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:06	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:06	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:03	1
Magnesium	0.051	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:06	1
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Nickel	0.021		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:06	1
Potassium	50		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:06	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:06	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:06	1
Sodium	200		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:06	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:06	1
Zinc	0.012	J	0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:08	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.6		1.0	0.18	mg/L			10/05/16 06:24	1
Sulfate	44	~~B~~	10	2.9	mg/L			10/07/16 08:28	2
Total Organic Carbon - Duplicates	49	~~B~~	4.0	1.1	mg/L			10/07/16 19:29	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	10		5.0	2.5	mg/L			10/06/16 12:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016
Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**59**	~~B~~	5.0	2.5	mg/L		10/12/16 11:30	10/12/16 14:29	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/04/16 16:16	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/07/16 23:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Lab Sample ID: 500-118024-2

Date Collected: 10/03/16 13:50
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.0**	J	5.0	1.7	ug/L			10/05/16 14:21	1
Benzene	**15**		0.50	0.15	ug/L			10/05/16 14:21	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Bromoform	<1.0		1.0	0.48	ug/L			10/05/16 14:21	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/05/16 14:21	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/05/16 14:21	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/05/16 14:21	1
Chloroethane	**5.0**		1.0	0.51	ug/L			10/05/16 14:21	1
Chloroform	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/05/16 14:21	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/05/16 14:21	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/05/16 14:21	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/05/16 14:21	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/05/16 14:21	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/05/16 14:21	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,2-Dichlorobenzene	**5.6**		1.0	0.33	ug/L			10/05/16 14:21	1
1,3-Dichlorobenzene	**3.9**		1.0	0.40	ug/L			10/05/16 14:21	1
1,4-Dichlorobenzene	**9.2**		1.0	0.36	ug/L			10/05/16 14:21	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/05/16 14:21	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/05/16 14:21	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/05/16 14:21	1
Ethylbenzene	**1.7**		0.50	0.18	ug/L			10/05/16 14:21	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/05/16 14:21	1
Isopropylbenzene	**4.2**		1.0	0.39	ug/L			10/05/16 14:21	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/05/16 14:21	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/05/16 14:21	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/05/16 14:21	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/05/16 14:21	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/05/16 14:21	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
Styrene	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/05/16 14:21	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Toluene	**1.4**		0.50	0.15	ug/L			10/05/16 14:21	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/05/16 14:21	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/05/16 14:21	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/05/16 14:21	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/05/16 14:21	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/05/16 14:21	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/05/16 14:21	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/05/16 14:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/05/16 14:21	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/05/16 14:21	1
Xylenes, Total	**4.4**		1.0	0.22	ug/L			10/05/16 14:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*71 - 120*		*10/05/16 14:21*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*10/05/16 14:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*10/05/16 14:21*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/05/16 14:21*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**560**		10	3.9	ug/L			10/06/16 12:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*71 - 120*		*10/06/16 12:09*	*10*
Dibromofluoromethane	*114*		*70 - 120*		*10/06/16 12:09*	*10*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*10/06/16 12:09*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/06/16 12:09*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.98**		0.72	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
Acenaphthylene	<0.72		0.72	0.19	ug/L		10/04/16 15:42	10/06/16 03:18	1
Acetophenone	<3.6		3.6	0.48	ug/L		10/04/16 15:42	10/06/16 03:18	1
Anthracene	<0.72		0.72	0.24	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[a]anthracene	<0.14		0.14	0.041	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[a]pyrene	<0.14		0.14	0.071	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[b]fluoranthene	<0.14		0.14	0.058	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[g,h,i]perylene	<0.72		0.72	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[k]fluoranthene	<0.14		0.14	0.046	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-chloroethoxy)methane	<1.4		1.4	0.21	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-chloroethyl)ether	**1.2**	**J**	1.4	0.21	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-ethylhexyl) phthalate	<7.2		7.2	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		10/04/16 15:42	10/06/16 03:18	1
Butyl benzyl phthalate	<1.4		1.4	0.35	ug/L		10/04/16 15:42	10/06/16 03:18	1
Carbazole	**0.29**	**J**	3.6	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chloroaniline	<7.2	UJ	7.2	1.5	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chloro-3-methylphenol	<7.2		7.2	1.7	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Chloronaphthalene	**0.55**	**J**	1.4	0.17	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Chlorophenol	**2.7**	**J**	3.6	0.40	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		10/04/16 15:42	10/06/16 03:18	1
Chrysene	<0.36		0.36	0.049	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dibenzofuran	**0.29**	**J**	1.4	0.19	ug/L		10/04/16 15:42	10/06/16 03:18	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dichlorophenol	<7.2		7.2	1.9	ug/L		10/04/16 15:42	10/06/16 03:18	1
Diethyl phthalate	**0.43**	**J**	1.4	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dimethylphenol	<7.2		7.2	1.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dimethyl phthalate	<1.4		1.4	0.23	ug/L		10/04/16 15:42	10/06/16 03:18	1
Di-n-butyl phthalate	**0.79**	**J**	3.6	0.53	ug/L		10/04/16 15:42	10/06/16 03:18	1
4,6-Dinitro-2-methylphenol	<14		14	4.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dinitrophenol	<14		14	6.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dinitrotoluene	<0.72		0.72	0.18	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,6-Dinitrotoluene	<0.72		0.72	0.053	ug/L		10/04/16 15:42	10/06/16 03:18	1
Di-n-octyl phthalate	<7.2		7.2	0.76	ug/L		10/04/16 15:42	10/06/16 03:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.72		0.72	0.33	ug/L		10/04/16 15:42	10/06/16 03:18	1
Fluorene	**0.53**	**J**	0.72	0.18	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorobenzene	<0.36		0.36	0.057	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorobutadiene	<3.6		3.6	0.37	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorocyclopentadiene	<14		14	4.6	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachloroethane	<3.6		3.6	0.43	ug/L		10/04/16 15:42	10/06/16 03:18	1
Indeno[1,2,3-cd]pyrene	<0.14		0.14	0.054	ug/L		10/04/16 15:42	10/06/16 03:18	1
Isophorone	<1.4		1.4	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Methylphenol	<1.4		1.4	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
3 & 4 Methylphenol	**2.7**		1.4	0.32	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Nitroaniline	<3.6		3.6	0.93	ug/L		10/04/16 15:42	10/06/16 03:18	1
3-Nitroaniline	<7.2		7.2	1.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Nitroaniline	<7.2	UJ	7.2	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
Nitrobenzene	<0.72		0.72	0.32	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Nitrophenol	<7.2		7.2	1.8	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Nitrophenol	<14		14	5.4	ug/L		10/04/16 15:42	10/06/16 03:18	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		10/04/16 15:42	10/06/16 03:18	1
N-Nitrosodiphenylamine	**6.3**		0.72	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,2'-oxybis[1-chloropropane]	<1.4		1.4	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
Pentachlorophenol	<14		14	2.8	ug/L		10/04/16 15:42	10/06/16 03:18	1
Phenanthrene	**0.26**	**J**	0.72	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
Phenol	<3.6		3.6	0.49	ug/L		10/04/16 15:42	10/06/16 03:18	1
Pyrene	<0.72		0.72	0.31	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4,5-Trichlorophenol	<7.2		7.2	1.9	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzaldehyde	<29	UJ	29	11	ug/L		10/04/16 15:42	10/06/16 03:18	1
Caprolactam	<7.2		7.2	1.1	ug/L		10/04/16 15:42	10/06/16 03:18	1
Atrazine	<3.6		3.6	0.45	ug/L		10/04/16 15:42	10/06/16 03:18	1
1,1'-Biphenyl	**0.53**	**J**	3.6	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*30 - 123*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
2-Fluorophenol (Surr)	*73*		*30 - 110*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Nitrobenzene-d5 (Surr)	*77*		*33 - 139*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Phenol-d5 (Surr)	*53*		*20 - 100*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Terphenyl-d14 (Surr)	*105*		*42 - 150*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*10/04/16 15:42*	*10/06/16 03:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**120**		7.2	0.24	ug/L		10/04/16 15:42	10/13/16 19:32	5
Naphthalene	**92**		3.6	1.1	ug/L		10/04/16 15:42	10/13/16 19:32	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 16:46	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 16:46	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/05/16 16:46	1
beta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 16:46	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 16:46	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/05/16 07:55	10/05/16 16:46	1
delta-BHC	<0.037		0.037	0.0096	ug/L		10/05/16 07:55	10/05/16 16:46	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 16:46	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 16:46	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/05/16 07:55	10/05/16 16:46	1
Heptachlor	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Methoxychlor	<0.075		0.075	0.021	ug/L		10/05/16 07:55	10/05/16 16:46	1
Toxaphene	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*30 - 143*	*10/05/16 07:55*	*10/05/16 16:46*	*1*
Tetrachloro-m-xylene	*109*		*30 - 120*	*10/05/16 07:55*	*10/05/16 16:46*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1221	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1232	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1242	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1248	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1254	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 20:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:26*	*1*
DCB Decachlorobiphenyl	*92*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:11	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:11	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Barium	**0.36**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:11	1
Cadmium	**0.00096**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:11	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:11	1
Chromium	**0.0035**	**J**	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:11	1
Cobalt	**0.0012**	**J**	0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:11	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:11	1
Iron	**41**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:11	1
Lead	**0.0028**	**J**	0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:10	1
Magnesium	**54**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.30**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Nickel	**0.0037**	**J**	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:11	1
Potassium	**38**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:11	1
Selenium	**0.0053**	**J**	0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:11	1
Sodium	**180**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:11	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:11	1
Zinc	**0.067**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:15	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:15	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Barium	**0.35**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:15	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:15	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:15	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:15	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:15	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:15	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:15	1
Iron	**39**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:15	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:14	1
Magnesium	**51**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:15	1
Manganese	**0.28**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Nickel	**0.0037**	**J**	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:15	1
Potassium	**36**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:15	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:15	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:15	1
Sodium	**170**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:15	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:15	1
Zinc	**0.021**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:14	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 06:36	1
Sulfate	< 5.0 ~~**4.0**~~	~~**J B**~~	5.0	1.5	mg/L			10/07/16 08:31	1
Total Organic Carbon - Duplicates	**20**	~~**B**~~	1.0	0.27	mg/L			10/07/16 02:18	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**57**		5.0	2.5	mg/L			10/05/16 10:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Lab Sample ID: 500-118024-2

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**45**	~~B~~	5.0	2.5	mg/L		10/12/16 11:30	10/12/16 14:32	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:42	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/07/16 23:51	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20508

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/17/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78752.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118024-2
Address: 220 William Pitt Way, ,	Due Date Requested: 10/13/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of Containers	Special Instructions/Note:
			Preservation Code:						
MW-01-GW-10032016 (500-118024-1)	10/3/16	11:05 Central		Water			X	2	
MW-02-GW-10032016 (500-118024-2)	10/3/16	13:50 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed 1.1°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/04/16 1330	Company TA	Received by: Thomas Sarg	Date/Time: 10/5/16 840	Company Test America
Relinquished by:	Date/Time: 10/5/16	Company	Received by: Leslie PACS	Date/Time: 10.6.16 1015	Company PACS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20508 500-118024-2

Lab ID: 205080001 Date Received: 10/6/2016 10:15 Matrix: Water
Sample ID: MW-01-GW-10032016 Date Collected: 10/3/2016 11:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	12000	ug/l	0.50	0.027	1	10/12/2016 13:57	TD	n
Carbon Dioxide	<5.0	mg/l	5.0	0.24	1	10/12/2016 13:57	TD	n
Oxygen	3.9	mg/l	0.50	0.13	1	10/12/2016 13:57	TD	n
Nitrogen	10	mg/l	2.0	0.24	1	10/12/2016 13:57	TD	n

CERTIFICATE OF ANALYSIS
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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20508 500-118024-2

Lab ID: 205080002 Date Received: 10/6/2016 10:15 Matrix: Water
Sample ID: MW-02-GW-10032016 Date Collected: 10/3/2016 13:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	12000	ug/l	0.50	0.027	1	10/12/2016 14:10	TD	n
Carbon Dioxide	290	mg/l	5.0	0.24	1	10/12/2016 14:10	TD	n
Oxygen	1.6	mg/l	0.50	0.13	1	10/12/2016 14:10	TD	n
Nitrogen	8.3	mg/l	2.0	0.24	1	10/12/2016 14:10	TD	n

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St #1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118070
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 3.2, 2.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

500-118070 COC

7. Other
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TOC	TSS, SO4, NO2	Dissolved Gases	Comments
Preservative							8	3	3	6	5	1	2	8	9	
1		MW-03-GW-10042016	10/4/16	0810	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metals
2		MW-04-GW-10042016	10/4/16	0935	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-05-GW-10042016	10/4/16	1110	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-07-GW-10042016	10/4/16	1250	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- MW-07, Reactive with preservative
																unable to remove bubbles from VOC, TOC
																samples
																- Poor Meniscus formed
																in all Diss Gas Samples
																unable to remove bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	10/4/16	1600	David Bedin	TA	10/4/16	1600
David Bedin	TA	10/4/16	1650	[illegible]	TA-CHI	10/04/16	16:50
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

10/18/2016

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/07/16 21:01	10
Benzene	**110**		5.0	1.5	ug/L			10/07/16 21:01	10
Bromodichloromethane	<10		10	3.7	ug/L			10/07/16 21:01	10
Bromoform	<10		10	4.8	ug/L			10/07/16 21:01	10
Bromomethane	<20		20	8.0	ug/L			10/07/16 21:01	10
Carbon disulfide	<20		20	4.5	ug/L			10/07/16 21:01	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/07/16 21:01	10
Chlorobenzene	<10		10	3.9	ug/L			10/07/16 21:01	10
Chloroethane	<10		10	5.1	ug/L			10/07/16 21:01	10
Chloroform	<10		10	3.7	ug/L			10/07/16 21:01	10
Chloromethane	<10		10	3.2	ug/L			10/07/16 21:01	10
cis-1,2-Dichloroethene	<10		10	4.1	ug/L			10/07/16 21:01	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/07/16 21:01	10
Cyclohexane	<10		10	4.9	ug/L			10/07/16 21:01	10
Dibromochloromethane	<10		10	4.9	ug/L			10/07/16 21:01	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			10/07/16 21:01	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/07/16 21:01	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			10/07/16 21:01	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/07/16 21:01	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/07/16 21:01	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/07/16 21:01	10
1,1-Dichloroethane	<10		10	4.1	ug/L			10/07/16 21:01	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/07/16 21:01	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/07/16 21:01	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/07/16 21:01	10
Ethylbenzene	**25**		5.0	1.8	ug/L			10/07/16 21:01	10
2-Hexanone	<50		50	16	ug/L			10/07/16 21:01	10
Isopropylbenzene	<10		10	3.9	ug/L			10/07/16 21:01	10
Methyl acetate	<50		50	20	ug/L			10/07/16 21:01	10
Methylcyclohexane	<10		10	3.2	ug/L			10/07/16 21:01	10
Methylene Chloride	<50		50	16	ug/L			10/07/16 21:01	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/07/16 21:01	10
methyl isobutyl ketone	<50		50	22	ug/L			10/07/16 21:01	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/07/16 21:01	10
Styrene	<10		10	3.9	ug/L			10/07/16 21:01	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/07/16 21:01	10
Tetrachloroethene	<10		10	3.7	ug/L			10/07/16 21:01	10
Toluene	**96**		5.0	1.5	ug/L			10/07/16 21:01	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/07/16 21:01	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/07/16 21:01	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/07/16 21:01	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/07/16 21:01	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/07/16 21:01	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/07/16 21:01	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/07/16 21:01	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/07/16 21:01	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/07/16 21:01	10
Xylenes, Total	**150**		10	2.2	ug/L			10/07/16 21:01	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/07/16 21:01*	*10*
Dibromofluoromethane	*96*		*70 - 120*		*10/07/16 21:01*	*10*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 21:01*	*10*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/07/16 21:01*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**21**		7.4	2.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Acenaphthylene	**3.4**	**J**	7.4	2.0	ug/L		10/05/16 15:21	10/10/16 18:14	10
Acetophenone	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
Anthracene	**9.1**		7.4	2.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[a]pyrene	<1.5		1.5	0.73	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[b]fluoranthene	<1.5		1.5	0.59	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[g,h,i]perylene	<7.4		7.4	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[k]fluoranthene	<1.5		1.5	0.47	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-ethylhexyl) phthalate	<74		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/05/16 15:21	10/10/16 18:14	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
Carbazole	**150**		37	2.6	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chloroaniline	<74		74	15	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Chlorophenol	<37		37	4.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
Chrysene	<3.7		3.7	0.50	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dibenz(a,h)anthracene	<2.2		2.2	0.37	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dibenzofuran	**42**		15	1.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/05/16 15:21	10/10/16 18:14	10
Diethyl phthalate	<15		15	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dimethylphenol	**74**		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/05/16 15:21	10/10/16 18:14	10
4,6-Dinitro-2-methylphenol	<150		150	43	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,6-Dinitrotoluene	<7.4		7.4	0.54	ug/L		10/05/16 15:21	10/10/16 18:14	10
Di-n-octyl phthalate	<74		74	7.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
Fluoranthene	**6.2**	**J**	7.4	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Fluorene	**62**		7.4	1.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorobenzene	<3.7		3.7	0.58	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorocyclopentadiene	<150	UJ	150	47	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachloroethane	<37		37	4.4	ug/L		10/05/16 15:21	10/10/16 18:14	10
Indeno[1,2,3-cd]pyrene	<1.5		1.5	0.55	ug/L		10/05/16 15:21	10/10/16 18:14	10
Isophorone	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Methylnaphthalene	**300**	~~B~~	15	0.48	ug/L		10/05/16 15:21	10/10/16 18:14	10

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**21**		15	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
3 & 4 Methylphenol	**12**	**J**	15	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Nitroaniline	<37		37	9.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
3-Nitroaniline	<74		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Nitroaniline	<74		74	12	ug/L		10/05/16 15:21	10/10/16 18:14	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Nitrophenol	<74		74	18	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Nitrophenol	<150		150	55	ug/L		10/05/16 15:21	10/10/16 18:14	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
N-Nitrosodiphenylamine	<7.4		7.4	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Pentachlorophenol	<150	UJ	150	29	ug/L		10/05/16 15:21	10/10/16 18:14	10
Phenanthrene	**55**		7.4	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
Phenol	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
Pyrene	**4.5**	**J**	7.4	3.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzaldehyde	<290	UJ	290	110	ug/L		10/05/16 15:21	10/10/16 18:14	10
Caprolactam	<74		74	11	ug/L		10/05/16 15:21	10/10/16 18:14	10
Atrazine	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 18:14	10
1,1'-Biphenyl	**26**	**J**	37	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*111*		*30 - 123*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
2-Fluorophenol (Surr)	*85*		*30 - 110*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Nitrobenzene-d5 (Surr)	*104*		*33 - 139*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Phenol-d5 (Surr)	*69*		*20 - 100*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Terphenyl-d14 (Surr)	*116*		*42 - 150*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
2,4,6-Tribromophenol (Surr)	*127*		*30 - 150*	*10/05/16 15:21*	*10/10/16 18:14*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2200**	~~B~~	37	11	ug/L		10/05/16 15:21	10/15/16 17:43	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*10/05/16 15:21*	*10/15/16 17:43*	*50*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 17:05	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 17:05	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/05/16 07:55	10/05/16 17:05	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/05/16 17:05	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 17:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Date Collected: 10/04/16 08:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/05/16 17:05	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 17:05	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 17:05	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 17:05	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/05/16 17:05	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 17:05	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/05/16 17:05	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*57*		*30 - 143*	*10/05/16 07:55*	*10/05/16 17:05*	*1*
Tetrachloro-m-xylene	*106*		*30 - 120*	*10/05/16 07:55*	*10/05/16 17:05*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/05/16 07:55	10/05/16 20:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:41*	*1*
DCB Decachlorobiphenyl	*71*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:41*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:19	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1
Barium	**1.0**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:19	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:19	1
Calcium	**76**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:19	1
Iron	**4.6**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:17	1
Magnesium	**84**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:19	1
Manganese	**0.14**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Date Collected: 10/04/16 08:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	0.0051	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:19	1
Potassium	62		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:19	1
Sodium	270	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:24	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Barium	0.96	J	0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:24	1
Cadmium	0.0013	J	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:24	1
Calcium	73		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:24	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:24	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:24	1
Iron	3.6		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:28	1
Magnesium	82	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:24	1
Manganese	0.13		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Nickel	0.0049	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:24	1
Potassium	60	J	0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:24	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:24	1
Sodium	260	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:24	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:24	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.31	J	1.0	0.18	mg/L			10/05/16 06:40	1
Sulfate	< 5.0 ~~3.6~~	~~J B~~ UB	5.0	1.5	mg/L			10/07/16 08:32	1
Total Organic Carbon - Duplicates	24	~~B~~	1.0	0.27	mg/L			10/07/16 02:34	1
Nitrogen, Nitrate	0.077	J	0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	8.5		5.0	2.5	mg/L			10/05/16 10:42	1
Ammonia	38		2.0	1.0	mg/L		10/12/16 11:30	10/13/16 09:40	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:42	1
Nitrogen, Nitrate Nitrite	**0.077**	**J**	0.10	0.035	mg/L			10/13/16 23:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Lab Sample ID: 500-118070-2

Date Collected: 10/04/16 09:35
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/07/16 18:47	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 18:47	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 18:47	1
Carbon disulfide	**33**		2.0	0.45	ug/L			10/07/16 18:47	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 18:47	1
Chlorobenzene	**0.82**	**J**	1.0	0.39	ug/L			10/07/16 18:47	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 18:47	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 18:47	1
cis-1,2-Dichloroethene	**7.3**		1.0	0.41	ug/L			10/07/16 18:47	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 18:47	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			10/07/16 18:47	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 18:47	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 18:47	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/07/16 18:47	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 18:47	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/07/16 18:47	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 18:47	1
1,1-Dichloroethane	**24**		1.0	0.41	ug/L			10/07/16 18:47	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 18:47	1
Ethylbenzene	**7.2**		0.50	0.18	ug/L			10/07/16 18:47	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 18:47	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 18:47	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/07/16 18:47	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 18:47	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 18:47	1
methyl isobutyl ketone	**6.1**		5.0	2.2	ug/L			10/07/16 18:47	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 18:47	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Toluene	**21**		0.50	0.15	ug/L			10/07/16 18:47	1
trans-1,2-Dichloroethene	**1.0**		1.0	0.35	ug/L			10/07/16 18:47	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 18:47	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 18:47	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 18:47	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 18:47	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 18:47	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 18:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 18:47	1
Vinyl chloride	**8.5**		0.50	0.20	ug/L			10/07/16 18:47	1
Xylenes, Total	**5.9**		1.0	0.22	ug/L			10/07/16 18:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*10/07/16 18:47*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*10/07/16 18:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*71 - 127*		*10/07/16 18:47*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*10/07/16 18:47*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**530**		5.0	1.5	ug/L			10/07/16 19:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*10/07/16 19:14*	*10*
Dibromofluoromethane	*95*		*70 - 120*		*10/07/16 19:14*	*10*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*		*10/07/16 19:14*	*10*
Toluene-d8 (Surr)	*102*		*75 - 120*		*10/07/16 19:14*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Acenaphthylene	<3.6		3.6	0.98	ug/L		10/05/16 15:21	10/15/16 18:09	5
Acetophenone	<18		18	2.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Anthracene	<3.6		3.6	1.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[g,h,i]perylene	<3.6		3.6	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-ethylhexyl) phthalate	<36		36	6.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/15/16 18:09	5
Carbazole	<18		18	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chloroaniline	<36		36	7.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Chlorophenol	<18		18	2.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
Chrysene	<1.8		1.8	0.25	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/05/16 15:21	10/15/16 18:09	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		10/05/16 15:21	10/15/16 18:09	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dimethylphenol	**17**	**J**	36	6.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dinitrophenol	<73		73	31	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,6-Dinitrotoluene	<3.6		3.6	0.27	ug/L		10/05/16 15:21	10/15/16 18:09	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		10/05/16 15:21	10/15/16 18:09	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
Fluorene	<3.6		3.6	0.89	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachloroethane	<18		18	2.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/05/16 15:21	10/15/16 18:09	5
Isophorone	<7.3		7.3	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Methylnaphthalene	<7.3		7.3	0.24	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Methylphenol	**5.5**	**J**	7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
3 & 4 Methylphenol	**2.1**	**J**	7.3	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Naphthalene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Nitroaniline	<18		18	4.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
3-Nitroaniline	<36		36	6.5	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Nitroaniline	<36		36	6.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Nitrophenol	<36		36	9.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Nitrophenol	<73		73	27	ug/L		10/05/16 15:21	10/15/16 18:09	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/05/16 15:21	10/15/16 18:09	5
N-Nitrosodiphenylamine	<3.6		3.6	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,2'-oxybis[1-chloropropane]	<7.3	UJ	7.3	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Pentachlorophenol	<73		73	14	ug/L		10/05/16 15:21	10/15/16 18:09	5
Phenanthrene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Phenol	<18		18	2.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Pyrene	<3.6		3.6	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzaldehyde	<150	~~J~~ UJ	150	55	ug/L		10/05/16 15:21	10/15/16 18:09	5
Caprolactam	<36		36	5.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Atrazine	<18		18	2.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*30 - 123*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
2,4,6-Tribromophenol (Surr)	*120*		*30 - 150*	*10/05/16 15:21*	*10/15/16 18:09*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/06/16 11:34	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/06/16 11:34	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/06/16 11:34	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/06/16 11:34	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/06/16 11:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/06/16 11:34	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/06/16 11:34	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/06/16 11:34	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:34	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/06/16 11:34	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 11:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*105*		*30 - 143*	*10/05/16 07:55*	*10/06/16 11:34*	*1*
Tetrachloro-m-xylene	*483*	*X*	*30 - 120*	*10/05/16 07:55*	*10/06/16 11:34*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/05/16 07:55	10/06/16 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*30 - 127*	*10/05/16 07:55*	*10/06/16 14:26*	*1*
DCB Decachlorobiphenyl	*86*		*30 - 150*	*10/05/16 07:55*	*10/06/16 14:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:29	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:29	1
Arsenic	**0.0084**	**J**	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Barium	**0.058**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:29	1
Calcium	**100**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:29	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:29	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:29	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:35	1
Magnesium	**27**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:29	1
Manganese	**0.32**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:29	1
Potassium	**15**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:29	1
Sodium	**340**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:29	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:29	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:34	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:34	1
Arsenic	**0.010**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Barium	**0.061**	J	0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:34	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:34	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:34	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:34	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:34	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:39	1
Magnesium	**29**	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:34	1
Manganese	**0.33**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:34	1
Potassium	**16**	J	0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:34	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:34	1
Sodium	**360**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:34	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:34	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.8**		1.0	0.18	mg/L			10/05/16 06:44	1
Sulfate	**210**	~~B~~	50	15	mg/L			10/07/16 08:35	10
Total Organic Carbon - Duplicates	**26**		2.0	0.53	mg/L			10/11/16 02:02	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/05/16 10:43	1
Ammonia	**9.8**		0.40	0.20	mg/L		10/12/16 11:30	10/13/16 09:43	2
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 23:56	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.0**		5.0	1.7	ug/L			10/07/16 19:40	1
Benzene	**0.27**	**J**	0.50	0.15	ug/L			10/07/16 19:40	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 19:40	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 19:40	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/07/16 19:40	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 19:40	1
Chlorobenzene	**4.3**		1.0	0.39	ug/L			10/07/16 19:40	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 19:40	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 19:40	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/07/16 19:40	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 19:40	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			10/07/16 19:40	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 19:40	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 19:40	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/07/16 19:40	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 19:40	1
1,4-Dichlorobenzene	**1.9**		1.0	0.36	ug/L			10/07/16 19:40	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 19:40	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/07/16 19:40	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 19:40	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/07/16 19:40	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 19:40	1
Isopropylbenzene	**35**		1.0	0.39	ug/L			10/07/16 19:40	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 19:40	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/07/16 19:40	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 19:40	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 19:40	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/07/16 19:40	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 19:40	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Toluene	**1.0**		0.50	0.15	ug/L			10/07/16 19:40	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/07/16 19:40	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 19:40	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 19:40	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 19:40	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 19:40	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 19:40	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 19:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 19:40	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/07/16 19:40	1
Xylenes, Total	**0.75**	**J**	1.0	0.22	ug/L			10/07/16 19:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/07/16 19:40*	*1*
Dibromofluoromethane	*93*		*70 - 120*		*10/07/16 19:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*		*10/07/16 19:40*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/07/16 19:40*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/05/16 15:21	10/15/16 18:35	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/05/16 15:21	10/15/16 18:35	1
Anthracene	<0.74		0.74	0.25	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/05/16 15:21	10/15/16 18:35	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/05/16 15:21	10/15/16 18:35	1
Carbazole	<3.7		3.7	0.26	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Chloronaphthalene	**0.18**	**J**	1.5	0.17	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/05/16 15:21	10/15/16 18:35	1
Chrysene	<0.37		0.37	0.050	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/05/16 15:21	10/15/16 18:35	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/05/16 15:21	10/15/16 18:35	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/05/16 15:21	10/15/16 18:35	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/05/16 15:21	10/15/16 18:35	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
Fluorene	<0.74		0.74	0.18	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/05/16 15:21	10/15/16 18:35	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/05/16 15:21	10/15/16 18:35	1
Isophorone	<1.5		1.5	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Methylnaphthalene	< 1.5 ~~0.36~~	~~J B~~ UB	1.5	0.048	ug/L		10/05/16 15:21	10/15/16 18:35	1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/05/16 15:21	10/15/16 18:35	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/05/16 15:21	10/15/16 18:35	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Nitrophenol	<15		15	5.5	ug/L		10/05/16 15:21	10/15/16 18:35	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/05/16 15:21	10/15/16 18:35	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,2'-oxybis[1-chloropropane]	<1.5	UJ	1.5	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
Pentachlorophenol	<15		15	2.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
Phenol	<3.7		3.7	0.50	ug/L		10/05/16 15:21	10/15/16 18:35	1
Pyrene	<0.74		0.74	0.31	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzaldehyde	<29	UJ	29	11	ug/L		10/05/16 15:21	10/15/16 18:35	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/05/16 15:21	10/15/16 18:35	1
Atrazine	<3.7		3.7	0.46	ug/L		10/05/16 15:21	10/15/16 18:35	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*64*		*30 - 123*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Nitrobenzene-d5 (Surr)	*58*		*33 - 139*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Phenol-d5 (Surr)	*36*		*20 - 100*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
2,4,6-Tribromophenol (Surr)	*109*		*30 - 150*	*10/05/16 15:21*	*10/15/16 18:35*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/06/16 11:54	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/06/16 11:54	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/06/16 11:54	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/05/16 07:55	10/06/16 11:54	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/06/16 11:54	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/06/16 11:54	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/06/16 11:54	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/05/16 07:55	10/06/16 11:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:54	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/06/16 11:54	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 11:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*54*		*30 - 143*	*10/05/16 07:55*	*10/06/16 11:54*	*1*
Tetrachloro-m-xylene	*101*		*30 - 120*	*10/05/16 07:55*	*10/06/16 11:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 21:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*10/05/16 07:55*	*10/05/16 21:12*	*1*
DCB Decachlorobiphenyl	*63*		*30 - 150*	*10/05/16 07:55*	*10/05/16 21:12*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.28**		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:38	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:38	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Barium	**0.89**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:38	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:38	1
Cadmium	**0.0013**	J	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:38	1
Calcium	**70**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:38	1
Chromium	**0.0032**	J	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:38	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:38	1
Copper	~~**0.0054**~~	~~J~~ R	~~0.010~~	~~0.0022~~	~~mg/L~~		10/11/16 08:58	10/13/16 02:38	1
Iron	**18**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:38	1
Lead	**0.013**		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:45	1
Magnesium	**80**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:38	1
Manganese	**0.057**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Nickel	**0.0044**	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:38	1
Potassium	**43**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:38	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:38	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:38	1
Sodium	**150**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:38	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:38	1
Zinc	**0.044**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:38	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Date Collected: 10/04/16 11:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:50	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Barium	**0.97**	J	0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:50	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:50	1
Calcium	**76**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:50	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:50	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:50	1
Iron	**18**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:50	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:48	1
Magnesium	**88**	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:50	1
Manganese	**0.053**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:50	1
Potassium	**47**	J	0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:50	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:50	1
Sodium	**160**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:50	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:50	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 06:48	1
Sulfate	< 5.0 ~~3.4~~	~~J B~~ UB	5.0	1.5	mg/L			10/07/16 08:36	1
Total Organic Carbon - Duplicates	**20**	~~B~~	1.0	0.27	mg/L			10/07/16 03:07	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			10/05/16 10:45	1
Ammonia	**50**		5.0	2.5	mg/L		10/12/16 11:30	10/13/16 09:46	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		5.0	1.7	ug/L			10/07/16 20:07	1
Benzene	**11**		0.50	0.15	ug/L			10/07/16 20:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 20:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 20:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/07/16 20:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 20:07	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 20:07	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 20:07	1
cis-1,2-Dichloroethene	**7.2**		1.0	0.41	ug/L			10/07/16 20:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 20:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/07/16 20:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 20:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 20:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,2-Dichlorobenzene	**5.0**		1.0	0.33	ug/L			10/07/16 20:07	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 20:07	1
1,4-Dichlorobenzene	**16**		1.0	0.36	ug/L			10/07/16 20:07	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 20:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/07/16 20:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 20:07	1
Ethylbenzene	**130**		0.50	0.18	ug/L			10/07/16 20:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 20:07	1
Isopropylbenzene	**8.6**		1.0	0.39	ug/L			10/07/16 20:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 20:07	1
Methylcyclohexane	**0.94**	**J**	1.0	0.32	ug/L			10/07/16 20:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 20:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 20:07	1
methyl isobutyl ketone	**69**		5.0	2.2	ug/L			10/07/16 20:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 20:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/07/16 20:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 20:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 20:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 20:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 20:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 20:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 20:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 20:07	1
Vinyl chloride	**11**		0.50	0.20	ug/L			10/07/16 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/07/16 20:07*	*1*

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*95*		*70 - 120*		*10/07/16 20:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 20:07*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/07/16 20:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**310**		5.0	1.5	ug/L			10/07/16 20:34	10
Xylenes, Total	**560**		10	2.2	ug/L			10/07/16 20:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*		*10/07/16 20:34*	*10*
Dibromofluoromethane	*97*		*70 - 120*		*10/07/16 20:34*	*10*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 20:34*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/07/16 20:34*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.3		7.3	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Acenaphthylene	<7.3		7.3	2.0	ug/L		10/05/16 15:21	10/10/16 19:42	10
Acetophenone	**17**	**J**	37	4.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
Anthracene	<7.3		7.3	2.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[a]anthracene	<1.5		1.5	0.41	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[a]pyrene	**1.1**	**J**	1.5	0.72	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[b]fluoranthene	**1.5**		1.5	0.59	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[g,h,i]perylene	<7.3		7.3	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[k]fluoranthene	**0.62**	**J**	1.5	0.47	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-chloroethyl)ether	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-ethylhexyl) phthalate	**210**		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/05/16 15:21	10/10/16 19:42	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/05/16 15:21	10/10/16 19:42	10
Carbazole	**4.2**	**J**	37	2.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chloroaniline	<73		73	15	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chloro-3-methylphenol	<73		73	17	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Chlorophenol	<37		37	4.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chlorophenyl phenyl ether	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
Chrysene	**1.8**	**J**	3.7	0.50	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dibenz(a,h)anthracene	<2.2		2.2	0.37	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dibenzofuran	<15		15	1.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dichlorophenol	<73		73	19	ug/L		10/05/16 15:21	10/10/16 19:42	10
Diethyl phthalate	<15		15	2.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dimethylphenol	**320**		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Di-n-butyl phthalate	<37		37	5.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
4,6-Dinitro-2-methylphenol	<150		150	43	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dinitrotoluene	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,6-Dinitrotoluene	<7.3		7.3	0.54	ug/L		10/05/16 15:21	10/10/16 19:42	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-4
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<73		73	7.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
Fluoranthene	**5.4**	**J**	7.3	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Fluorene	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorobenzene	<3.7		3.7	0.58	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorocyclopentadiene	<150	UJ	150	47	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachloroethane	<37		37	4.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
Indeno[1,2,3-cd]pyrene	<1.5		1.5	0.55	ug/L		10/05/16 15:21	10/10/16 19:42	10
Isophorone	<15		15	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Methylnaphthalene	**5.6**	**J ~~B~~**	15	0.48	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Methylphenol	**88**		15	2.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
3 & 4 Methylphenol	**290**		15	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Naphthalene	**35**	**~~B~~**	7.3	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Nitroaniline	<37		37	9.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
3-Nitroaniline	<73		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Nitroaniline	<73		73	12	ug/L		10/05/16 15:21	10/10/16 19:42	10
Nitrobenzene	<7.3		7.3	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Nitrophenol	<73		73	18	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Nitrophenol	<150		150	54	ug/L		10/05/16 15:21	10/10/16 19:42	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
N-Nitrosodiphenylamine	**5.4**	**J**	7.3	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Pentachlorophenol	<150	UJ	150	29	ug/L		10/05/16 15:21	10/10/16 19:42	10
Phenanthrene	**8.7**		7.3	2.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
Phenol	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
Pyrene	**5.3**	**J**	7.3	3.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4,5-Trichlorophenol	<73		73	19	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4,6-Trichlorophenol	<37		37	5.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzaldehyde	<290	UJ	290	110	ug/L		10/05/16 15:21	10/10/16 19:42	10
Caprolactam	<73		73	11	ug/L		10/05/16 15:21	10/10/16 19:42	10
Atrazine	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*56*		*30 - 123*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
2-Fluorophenol (Surr)	*79*		*30 - 110*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Nitrobenzene-d5 (Surr)	*80*		*33 - 139*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Phenol-d5 (Surr)	*66*		*20 - 100*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Terphenyl-d14 (Surr)	*80*		*42 - 150*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
2,4,6-Tribromophenol (Surr)	*74*		*30 - 150*	*10/05/16 15:21*	*10/10/16 19:42*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.19	UJ	0.19	0.025	ug/L		10/05/16 07:55	10/06/16 12:13	5
alpha-BHC	<0.19		0.19	0.012	ug/L		10/05/16 07:55	10/06/16 12:13	5
alpha-Chlordane	<0.19		0.19	0.020	ug/L		10/05/16 07:55	10/06/16 12:13	5
beta-BHC	<0.19		0.19	0.047	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDD	<0.19		0.19	0.062	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDE	<0.19		0.19	0.018	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDT	<0.19		0.19	0.015	ug/L		10/05/16 07:55	10/06/16 12:13	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.19	UJ	0.19	0.048	ug/L		10/05/16 07:55	10/06/16 12:13	5
Dieldrin	<0.19		0.19	0.060	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan I	<0.19		0.19	0.019	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan II	<0.19		0.19	0.013	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan sulfate	<0.19		0.19	0.054	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin	<0.19		0.19	0.066	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin aldehyde	<0.19		0.19	0.038	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin ketone	<0.19		0.19	0.079	ug/L		10/05/16 07:55	10/06/16 12:13	5
gamma-BHC (Lindane)	<0.19		0.19	0.026	ug/L		10/05/16 07:55	10/06/16 12:13	5
gamma-Chlordane	<0.19		0.19	0.034	ug/L		10/05/16 07:55	10/06/16 12:13	5
Heptachlor	<0.19		0.19	0.063	ug/L		10/05/16 07:55	10/06/16 12:13	5
Heptachlor epoxide	<0.19		0.19	0.064	ug/L		10/05/16 07:55	10/06/16 12:13	5
Methoxychlor	<0.37		0.37	0.11	ug/L		10/05/16 07:55	10/06/16 12:13	5
Toxaphene	<1.9		1.9	0.93	ug/L		10/05/16 07:55	10/06/16 12:13	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*24*	*X*	*30 - 143*	*10/05/16 07:55*	*10/06/16 12:13*	*5*
Tetrachloro-m-xylene	*129*	*X*	*30 - 120*	*10/05/16 07:55*	*10/06/16 12:13*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
~~PCB-1016~~	~~<0.37~~		~~0.37~~	~~0.061~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1016	<0.37		0.37	0.061	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~PCB-1221~~	~~<0.37~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~PCB-1232~~	~~<0.37~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~**PCB-1242**~~	~~**2.7**~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1242	**3.0**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~**PCB-1248**~~	~~**2.5**~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1248	**3.5**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~**PCB-1254**~~	~~**1.6**~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1254	**2.4**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~PCB-1260~~	~~<0.37~~		~~0.37~~	~~0.064~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:20	10/10/16 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
Tetrachloro-m-xylene	*19*	*X*	*30 - 127*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
DCB Decachlorobiphenyl	*37*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.7**		1.0	0.31	mg/L		10/11/16 08:58	10/13/16 02:54	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 08:58	10/13/16 02:54	1
Arsenic	**0.050**		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Barium	**0.63**		0.050	0.011	mg/L		10/11/16 08:58	10/13/16 02:54	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 08:58	10/13/16 02:54	1
Cadmium	**0.0078**	**J**	0.010	0.0047	mg/L		10/11/16 08:58	10/13/16 02:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-4

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	11		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 02:54	1
Chromium	0.50		0.050	0.012	mg/L		10/11/16 08:58	10/13/16 02:54	1
Cobalt	0.040		0.025	0.0048	mg/L		10/11/16 08:58	10/13/16 02:54	1
Copper	~~0.082~~	R	~~0.050~~	~~0.011~~	~~mg/L~~		10/11/16 08:58	10/13/16 02:54	1
Iron	5.2		1.0	0.50	mg/L		10/11/16 08:58	10/13/16 02:54	1
Lead	0.71		0.025	0.013	mg/L		10/11/16 08:58	10/13/16 18:51	1
Magnesium	25		0.50	0.20	mg/L		10/11/16 08:58	10/13/16 02:54	1
Manganese	0.017	J	0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Nickel	0.15		0.050	0.018	mg/L		10/11/16 08:58	10/13/16 02:54	1
Potassium	680		2.5	0.81	mg/L		10/11/16 08:58	10/13/16 02:54	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 08:58	10/13/16 02:54	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 08:58	10/13/16 02:54	1
Sodium	3400	~~V~~ J	5.0	2.2	mg/L		10/11/16 08:58	10/13/16 02:54	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Vanadium	0.081		0.025	0.0093	mg/L		10/11/16 08:58	10/13/16 02:54	1
Zinc	1.1		0.10	0.045	mg/L		10/11/16 08:58	10/13/16 02:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.4		1.0	0.31	mg/L		10/11/16 08:58	10/13/16 03:02	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 08:58	10/13/16 03:02	1
Arsenic	0.038	J	0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Barium	0.60	~~V~~ J	0.050	0.011	mg/L		10/11/16 08:58	10/13/16 03:02	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 08:58	10/13/16 03:02	1
Cadmium	0.0061	J	0.010	0.0047	mg/L		10/11/16 08:58	10/13/16 03:02	1
Calcium	11		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 03:02	1
Chromium	0.48		0.050	0.012	mg/L		10/11/16 08:58	10/13/16 03:02	1
Cobalt	0.040		0.025	0.0048	mg/L		10/11/16 08:58	10/13/16 03:02	1
Copper	~~0.048~~	~~J~~ R	~~0.050~~	~~0.011~~	~~mg/L~~		10/11/16 08:58	10/13/16 03:02	1
Iron	5.1		1.0	0.50	mg/L		10/11/16 08:58	10/13/16 03:02	1
Lead	0.32		0.025	0.013	mg/L		10/11/16 08:58	10/13/16 18:59	1
Magnesium	25	~~V~~ J	0.50	0.20	mg/L		10/11/16 08:58	10/13/16 03:02	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Nickel	0.16		0.050	0.018	mg/L		10/11/16 08:58	10/13/16 03:02	1
Potassium	700	~~V~~ J	2.5	0.81	mg/L		10/11/16 08:58	10/13/16 03:02	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 08:58	10/13/16 03:02	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 08:58	10/13/16 03:02	1
Sodium	3500	~~V~~ J	5.0	2.2	mg/L		10/11/16 08:58	10/13/16 03:02	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Vanadium	0.076		0.025	0.0093	mg/L		10/11/16 08:58	10/13/16 03:02	1
Zinc	0.65		0.10	0.045	mg/L		10/11/16 08:58	10/13/16 03:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0011		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00051		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**9.1**		1.0	0.18	mg/L			10/05/16 06:52	1
Sulfate	<50		50	15	mg/L			10/07/16 08:39	10
Total Organic Carbon - Duplicates	**540**	~~B~~	20	5.3	mg/L			10/07/16 20:02	20
Nitrogen, Nitrate	**0.10**		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			10/05/16 10:46	1
Ammonia	**710**		40	20	mg/L		10/12/16 11:30	10/13/16 09:49	100
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:44	1
Nitrogen, Nitrate Nitrite	**0.10**		0.10	0.035	mg/L			10/14/16 00:00	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20509

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/17/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78836.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118070-2
Address: 220 William Pitt Way, ,	Due Date Requested: 10/14/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-03-GW-10042016 (500-118070-1)	10/4/16	08:10 Central		Water			X	2	
MW-04-GW-10042016 (500-118070-2)	10/4/16	09:35 Central		Water			X	2	
MW-05-GW-10042016 (500-118070-3)	10/4/16	11:10 Central		Water			X	2	
MW-07-GW-10042016 (500-118070-4)	10/4/16	12:50 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed 2-7°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/05/16 1530	Company TA	Received by:	Date/Time: 10.6.16 1115	Company Pitzer
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090001 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-03-GW-10042016 Date Collected: 10/4/2016 08:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	16000	ug/l	0.50	0.027	1	10/12/2016 12:55	TD	n
Carbon Dioxide	30	mg/l	5.0	0.24	1	10/12/2016 12:55	TD	n
Oxygen	3.4	mg/l	0.50	0.13	1	10/12/2016 12:55	TD	n
Nitrogen	9.1	mg/l	2.0	0.24	1	10/12/2016 12:55	TD	n

CERTIFICATE OF ANALYSIS
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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090002 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-04-GW-10042016 Date Collected: 10/4/2016 09:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	13000	ug/l	0.50	0.027	1	10/12/2016 13:07	TD	n
Carbon Dioxide	<5.0	mg/l	5.0	0.24	1	10/12/2016 13:07	TD	n
Oxygen	<0.50	mg/l	0.50	0.13	1	10/12/2016 13:07	TD	n
Nitrogen	8.6	mg/l	2.0	0.24	1	10/12/2016 13:07	TD	n

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090003 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-05-GW-10042016 Date Collected: 10/4/2016 11:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	10000	ug/l	0.50	0.027	1	10/12/2016 13:20	TD	n
Carbon Dioxide	270	mg/l	5.0	0.24	1	10/12/2016 13:20	TD	n
Oxygen	2.3	mg/l	0.50	0.13	1	10/12/2016 13:20	TD	n
Nitrogen	8.1	mg/l	2.0	0.24	1	10/12/2016 13:20	TD	n

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090004 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-07-GW-10042016 Date Collected: 10/4/2016 12:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	19000	ug/l	0.50	0.027	1	10/12/2016 13:32	TD	n
Carbon Dioxide	38	mg/l	5.0	0.24	1	10/12/2016 13:32	TD	n
Oxygen	1.1	mg/l	0.50	0.13	1	10/12/2016 13:32	TD	n
Nitrogen	6.6	mg/l	2.0	0.24	1	10/12/2016 13:32	TD	n

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TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118151 COC

Chain of Custody Record

Lab Job #: 500-118151

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 2.7/3.1/2.6

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. La Salle St Ste 850
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0001.00003
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: R. Thornhatter
Lab PM: Therese Margraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (8)	Total metals (3)	Dissolved metals (3)	Ammonia, NO_3, NO_2 (6)	Sulfide (5)	VOCs (1)	TOC (2)	TSS, SO_4, NO_2 (8)	Dissolved Gas (9)	Comments
1		MW-13-GW-10042016	10/4/16	1515	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-Diss Metals
2		Dup-1 (10042016)	10/4/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-08-GW-10052016	10/5/16	1205	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-09-GW-10052016	10/5/16	1335	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-06-GW-10052016	10/5/16	0840	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-MW-6 Highly
6		Dup-2 (10052016)	10/5/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	reactive with preservative
																for TOC & VOC vials
																unable to remove
																bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/5/16	1555	David Belen	TA	10/5/16	15:55
David Belen	TA	10/5/16	1635	[signature]	TA-CHI	10/6/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 22:11	10
Benzene	**400**		5.0	1.5	ug/L			10/11/16 22:11	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 22:11	10
Bromoform	<10		10	4.8	ug/L			10/11/16 22:11	10
Bromomethane	<20	UJ	20	8.0	ug/L			10/11/16 22:11	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 22:11	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 22:11	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 22:11	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 22:11	10
Chloroform	<10		10	3.7	ug/L			10/11/16 22:11	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 22:11	10
cis-1,2-Dichloroethene	**19**		10	4.1	ug/L			10/11/16 22:11	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 22:11	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 22:11	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 22:11	10
1,2-Dibromo-3-Chloropropane	<50	UJ	50	20	ug/L			10/11/16 22:11	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 22:11	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 22:11	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 22:11	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 22:11	10
1,1-Dichloroethane	<10		10	4.1	ug/L			10/11/16 22:11	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 22:11	10
Ethylbenzene	**1000**		5.0	1.8	ug/L			10/11/16 22:11	10
2-Hexanone	<50		50	16	ug/L			10/11/16 22:11	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 22:11	10
Methyl acetate	<50		50	20	ug/L			10/11/16 22:11	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 22:11	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 22:11	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 22:11	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 22:11	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 22:11	10
Styrene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 22:11	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 22:11	10
Toluene	**1700**		5.0	1.5	ug/L			10/11/16 22:11	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 22:11	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 22:11	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 22:11	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 22:11	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 22:11	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 22:11	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 22:11	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 22:11	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 22:11	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Date Collected: 10/04/16 15:15
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 22:11*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*10/11/16 22:11*	*10*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*10/11/16 22:11*	*10*
Toluene-d8 (Surr)	*102*		*75 - 120*		*10/11/16 22:11*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7000**		100	22	ug/L			10/11/16 22:38	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 22:38*	*100*
Dibromofluoromethane	*92*		*70 - 120*		*10/11/16 22:38*	*100*
1,2-Dichloroethane-d4 (Surr)	*83*		*71 - 127*		*10/11/16 22:38*	*100*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 22:38*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acenaphthylene	**2.2**	**J**	3.7	0.98	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acetophenone	**26**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:28	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloroaniline	<37	UJ	37	7.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloro-3-methylphenol	<37		37	8.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:28	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dichlorophenol	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Diethyl phthalate	**12**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dimethylphenol	**22**	**J**	37	6.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-butyl phthalate	**3.8**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
4,6-Dinitro-2-methylphenol	<73	UJ	73	22	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrophenol	<73	UJ	73	31	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-octyl phthalate	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 15:28	5

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
Fluorene	**1.0**	**J**	3.7	0.89	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylnaphthalene	**10**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylphenol	**5.4**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
3 & 4 Methylphenol	**29**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Naphthalene	**140**		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
3-Nitroaniline	<37		37	6.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Nitrobenzene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitrophenol	<37		37	9.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodiphenylamine	**11**		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenol	**17**	**J**	18	2.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzaldehyde	<150	✗ UJ	150	55	ug/L		10/06/16 16:12	10/07/16 15:28	5
Caprolactam	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
1,1'-Biphenyl	**1.8**	**J**	18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Nitrobenzene-d5 (Surr)	*79*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Phenol-d5 (Surr)	*62*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Terphenyl-d14 (Surr)	*114*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2,4,6-Tribromophenol (Surr)	*134*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/06/16 07:53	10/10/16 12:12	1
beta-BHC	<0.037		0.037	0.0093	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/06/16 07:53	10/10/16 12:12	1
delta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:12	1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/10/16 12:12	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:12*	*1*
Tetrachloro-m-xylene	*633*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:12*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/06/16 07:53	10/07/16 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*45*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:27*	*1*
DCB Decachlorobiphenyl	*51*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 03:49	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 03:49	1
Arsenic	**0.0034**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Barium	**0.26**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 03:49	1
Calcium	**84**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 03:49	1
Chromium	**0.0059**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 03:49	1
Copper	**0.0029**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Iron	**8.9**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 03:49	1
Lead	**0.0036**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 03:49	1
Magnesium	**52**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:28	1
Manganese	**0.38**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Nickel	**0.0079**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 03:49	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 03:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Date Collected: 10/04/16 15:15
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 03:49	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 03:49	1
Sodium	**220**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 03:49	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Vanadium	**0.0031**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 03:49	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 03:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:00	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Barium	**0.23**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:00	1
Calcium	**96**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:00	1
Chromium	**0.0038**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:00	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Iron	**6.4**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:00	1
Magnesium	**46**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:33	1
Manganese	**0.34**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Nickel	**0.0072**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:00	1
Potassium	**67**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:00	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:00	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:00	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Vanadium	**0.0036**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:00	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:18	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:41	1
Sulfate	**21**	~~B~~	5.0	1.5	mg/L			10/07/16 08:41	1
Total Organic Carbon - Duplicates	**53**	~~B~~	2.0	0.53	mg/L			10/07/16 20:18	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			10/06/16 12:44	1
Ammonia	**79**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:03	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:26	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 23:04	10
Benzene	**370**		5.0	1.5	ug/L			10/11/16 23:04	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 23:04	10
Bromoform	<10		10	4.8	ug/L			10/11/16 23:04	10
Bromomethane	<20	UJ	20	8.0	ug/L			10/11/16 23:04	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 23:04	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 23:04	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 23:04	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 23:04	10
Chloroform	<10		10	3.7	ug/L			10/11/16 23:04	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 23:04	10
cis-1,2-Dichloroethene	**16**		10	4.1	ug/L			10/11/16 23:04	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 23:04	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 23:04	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 23:04	10
1,2-Dibromo-3-Chloropropane	<50	UJ	50	20	ug/L			10/11/16 23:04	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 23:04	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 23:04	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 23:04	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 23:04	10
1,1-Dichloroethane	**7.6**	**J**	10	4.1	ug/L			10/11/16 23:04	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 23:04	10
Ethylbenzene	**970**		5.0	1.8	ug/L			10/11/16 23:04	10
2-Hexanone	<50		50	16	ug/L			10/11/16 23:04	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 23:04	10
Methyl acetate	<50		50	20	ug/L			10/11/16 23:04	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 23:04	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 23:04	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 23:04	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 23:04	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 23:04	10
Styrene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 23:04	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 23:04	10
Toluene	**1500**		5.0	1.5	ug/L			10/11/16 23:04	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 23:04	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 23:04	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 23:04	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 23:04	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 23:04	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 23:04	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 23:04	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 23:04	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 23:04	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:04*	*10*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:04*	*10*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*10/11/16 23:04*	*10*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 23:04*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7100**		100	22	ug/L			10/11/16 23:31	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 23:31*	*100*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:31*	*100*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/11/16 23:31*	*100*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/11/16 23:31*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acenaphthylene	**1.7**	**J**	3.6	0.98	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acetophenone	**20**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Anthracene	<3.6		3.6	1.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]anthracene	**0.43**	**J**	0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[g,h,i]perylene	<3.6		3.6	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-ethylhexyl) phthalate	<36		36	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:57	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloroaniline	<36	UJ	36	7.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
Chrysene	**0.35**	**J**	1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:57	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
Diethyl phthalate	**8.9**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dimethylphenol	**16**	**J**	36	6.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-butyl phthalate	**3.4**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
4,6-Dinitro-2-methylphenol	<73	UJ	73	22	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrophenol	<73	UJ	73	31	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,6-Dinitrotoluene	<3.6		3.6	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		10/06/16 16:12	10/07/16 15:57	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
Fluorene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylnaphthalene	**8.1**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylphenol	**4.8**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
3 & 4 Methylphenol	**22**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Naphthalene	**110**		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
3-Nitroaniline	<36		36	6.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitroaniline	<36		36	6.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitrophenol	<36		36	9.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodiphenylamine	**7.7**		3.6	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenanthrene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenol	**12**	**J**	18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pyrene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzaldehyde	<150	~~X~~ UJ	150	55	ug/L		10/06/16 16:12	10/07/16 15:57	5
Caprolactam	<36		36	5.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2,4,6-Tribromophenol (Surr)	*93*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/10/16 12:31	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/10/16 12:31	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/10/16 12:31	1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/10/16 12:31	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*50*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:31*	*1*
Tetrachloro-m-xylene	*638*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:31*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:42*	*1*
DCB Decachlorobiphenyl	*45*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:05	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:05	1
Arsenic	**0.0047**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Barium	**0.28**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:05	1
Calcium	**85**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:05	1
Chromium	**0.0052**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cobalt	**0.0023**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:05	1
Copper	**0.0040**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Iron	**9.6**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:05	1
Lead	**0.0077**		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:05	1
Magnesium	**55**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:37	1
Manganese	**0.40**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Nickel	**0.0069**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:05	1
Potassium	**77**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:05	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:05	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Vanadium	**0.0035**	J	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:05	1
Zinc	**0.013**	J	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	J	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:09	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:09	1
Arsenic	**0.0047**	J	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Barium	**0.25**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:09	1
Calcium	**89**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:09	1
Chromium	**0.0046**	J	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cobalt	**0.0017**	J	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:09	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Iron	**7.6**	~~* B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:09	1
Magnesium	**50**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:42	1
Manganese	**0.36**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Nickel	**0.0063**	J	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:09	1
Potassium	**71**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:09	1
Selenium	< 0.010 ~~**0.0065**~~	~~J~~ UB	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:09	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:09	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Vanadium	**0.0036**	J	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:09	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:21	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.57**	J	1.0	0.18	mg/L			10/10/16 00:45	1
Sulfate	**19**	~~B~~	5.0	1.5	mg/L			10/07/16 08:42	1
Total Organic Carbon - Duplicates	**54**	~~B~~	2.0	0.53	mg/L			10/07/16 20:35	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**25**		5.0	2.5	mg/L			10/06/16 12:45	1
Ammonia	**80**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:06	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 23:58	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 23:58	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/11/16 23:58	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 23:58	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 23:58	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 23:58	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/11/16 23:58	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 23:58	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 23:58	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 23:58	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Isopropylbenzene	**0.40**	**J**	1.0	0.39	ug/L			10/11/16 23:58	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 23:58	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 23:58	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 23:58	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 23:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 23:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 23:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 23:58	1
Xylenes, Total	**0.82**	**J**	1.0	0.22	ug/L			10/11/16 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Date Collected: 10/05/16 12:05
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:58*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*10/11/16 23:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*71 - 127*		*10/11/16 23:58*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 23:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:59	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:59	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:59	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloroaniline	<7.4	UJ	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:59	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:59	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:59	1
4,6-Dinitro-2-methylphenol	<15	UJ	15	4.4	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrophenol	<15	UJ	15	6.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:59	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:59	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Methylnaphthalene	**0.10**	**J**	1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:59	1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
3 & 4 Methylphenol	**0.39**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:59	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:59	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzaldehyde	<30	~~J~~ UJ	30	11	ug/L		10/06/16 16:12	10/07/16 13:59	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:59	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:59	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Terphenyl-d14 (Surr)	*110*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2,4,6-Tribromophenol (Surr)	*125*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/06/16 07:53	10/06/16 16:13	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/06/16 07:53	10/06/16 16:13	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/06/16 07:53	10/06/16 16:13	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin aldehyde	<0.036		0.036	0.0074	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-Chlordane	<0.036		0.036	0.0065	ug/L		10/06/16 07:53	10/06/16 16:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/06/16 16:13	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/06/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*86*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:13*	*1*
Tetrachloro-m-xylene	*54*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/06/16 07:53	10/07/16 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*64*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:58*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:58*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.062**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:13	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:13	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Barium	**0.56**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:13	1
Calcium	**97**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:13	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:13	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Iron	**8.4**	~~**^ B**~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:13	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:13	1
Magnesium	**72**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:53	1
Manganese	**0.14**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:13	1
Potassium	**37**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:13	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:13	1
Sodium	**210**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:13	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:13	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Barium	**0.52**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:19	1
Calcium	**92**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Iron	**7.8**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:19	1
Magnesium	**68**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:57	1
Manganese	**0.13**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:19	1
Potassium	**35**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:19	1
Sodium	**200**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:49	1
Sulfate	< 5.0 ~~3.0~~	~~J B~~ UB	5.0	1.5	mg/L			10/07/16 08:43	1
Total Organic Carbon - Duplicates	**17**	~~B~~	1.0	0.27	mg/L			10/07/16 04:12	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**19**		5.0	2.5	mg/L			10/06/16 12:47	1
Ammonia	**39**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:14	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/12/16 00:25	1
Benzene	**1.3**		0.50	0.15	ug/L			10/12/16 00:25	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:25	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/12/16 00:25	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:25	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
Chlorobenzene	**13**		1.0	0.39	ug/L			10/12/16 00:25	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:25	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:25	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:25	1
Cyclohexane	**1.1**		1.0	0.49	ug/L			10/12/16 00:25	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:25	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/12/16 00:25	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/12/16 00:25	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
1,4-Dichlorobenzene	**1.2**		1.0	0.36	ug/L			10/12/16 00:25	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:25	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/12/16 00:25	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Isopropylbenzene	**2.5**		1.0	0.39	ug/L			10/12/16 00:25	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:25	1
Methylcyclohexane	**0.99**	**J**	1.0	0.32	ug/L			10/12/16 00:25	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/12/16 00:25	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/12/16 00:25	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Toluene	<0.50		0.50	0.15	ug/L			10/12/16 00:25	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:25	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:25	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:25	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:25	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/12/16 00:25	1
Xylenes, Total	**0.46**	**J**	1.0	0.22	ug/L			10/12/16 00:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/12/16 00:25*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:25*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/12/16 00:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.88**		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 14:29	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 14:29	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		10/06/16 16:12	10/07/16 14:29	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloroaniline	<7.4	UJ	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 14:29	1
Chrysene	<0.37		0.37	0.051	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenz(a,h)anthracene	<0.22		0.22	0.038	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		10/06/16 16:12	10/07/16 14:29	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 14:29	1
4,6-Dinitro-2-methylphenol	<15	UJ	15	4.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrophenol	<15	UJ	15	6.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,6-Dinitrotoluene	<0.74		0.74	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-octyl phthalate	<7.4		7.4	0.78	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluoranthene	<0.74		0.74	0.34	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluorene	**0.39**	**J**	0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 14:29	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Methylnaphthalene	**2.3**		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 14:29	1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
3 & 4 Methylphenol	**1.5**		1.5	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
Naphthalene	**0.30**	**J**	0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 14:29	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:29	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitrophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodiphenylamine	**0.57**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pyrene	<0.74		0.74	0.32	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzaldehyde	<30	UJ	30	11	ug/L		10/06/16 16:12	10/07/16 14:29	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:29	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 14:29	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Nitrobenzene-d5 (Surr)	*56*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/06/16 16:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/06/16 16:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/06/16 16:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/06/16 07:53	10/06/16 16:33	1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Date Received: 10/05/16 16:35

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/06/16 16:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/06/16 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*58*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:33*	*1*
Tetrachloro-m-xylene	*69*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*10/06/16 07:53*	*10/07/16 15:13*	*1*
DCB Decachlorobiphenyl	*54*		*30 - 150*	*10/06/16 07:53*	*10/07/16 15:13*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:24	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:24	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:24	1
Chromium	**0.0050**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:24	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Iron	**24**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:24	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:01	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:24	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:24	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:24	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:24	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:24	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:24	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:28	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:28	1
Chromium	**0.0044**	J	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cobalt	**0.0010**	J	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:28	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Iron	**25**	~~A B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:28	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:05	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:28	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:28	1
Selenium	< 0.010 ~~**0.0058**~~	~~J~~ UB	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:28	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:28	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Vanadium	**0.0019**	J	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:28	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:30	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:53	1
Sulfate	< 5.0 ~~**2.1**~~	~~J B~~ UB	5.0	1.5	mg/L			10/12/16 07:51	1
Total Organic Carbon - Duplicates	**27**	~~F1 B~~ J	1.0	0.27	mg/L			10/07/16 04:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**28**		5.0	2.5	mg/L			10/06/16 12:48	1
Ammonia	**78**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:17	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**41**		5.0	1.7	ug/L			10/12/16 00:52	1
Benzene	**6.6**		0.50	0.15	ug/L			10/12/16 00:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:52	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/12/16 00:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:52	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
cis-1,2-Dichloroethene	**5.3**		1.0	0.41	ug/L			10/12/16 00:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/12/16 00:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichlorobenzene	**2.6**		1.0	0.33	ug/L			10/12/16 00:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			10/12/16 00:52	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:52	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 00:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
Ethylbenzene	**63**		0.50	0.18	ug/L			10/12/16 00:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			10/12/16 00:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:52	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Methyl Ethyl Ketone	**19**		5.0	2.1	ug/L			10/12/16 00:52	1
methyl isobutyl ketone	**44**		5.0	2.2	ug/L			10/12/16 00:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Toluene	**160**		0.50	0.15	ug/L			10/12/16 00:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:52	1
Vinyl chloride	**4.4**		0.50	0.20	ug/L			10/12/16 00:52	1
Xylenes, Total	**240**		1.0	0.22	ug/L			10/12/16 00:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Date Collected: 10/05/16 08:40
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*10/12/16 00:52*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:52*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/12/16 00:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acetophenone	**7.2**	**J**	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]pyrene	<1.5	* UJ	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[b]fluoranthene	<1.5	* UJ	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[g,h,i]perylene	<7.4	* UJ	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[k]fluoranthene	<1.5	* UJ	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloroaniline	<74	* UJ	74	15	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenz(a,h)anthracene	<2.2	* UJ	2.2	0.37	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dimethylphenol	**79**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
4,6-Dinitro-2-methylphenol	<150	UJ	150	44	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrophenol	<150	UJ	150	63	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,6-Dinitrotoluene	<7.4		7.4	0.54	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluoranthene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
Indeno[1,2,3-cd]pyrene	<1.5	* UJ	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:27	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Methylnaphthalene	**2.2**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:27	10

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**21**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
3 & 4 Methylphenol	**160**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Naphthalene	**14**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:27	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitrophenol	<74		74	18	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodiphenylamine	**3.2**	**J**	7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pyrene	<7.4		7.4	3.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzaldehyde	<300	~~J~~ UJ	300	110	ug/L		10/06/16 16:12	10/07/16 16:27	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:27	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2-Fluorophenol (Surr)	*74*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Phenol-d5 (Surr)	*69*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:36	10/07/16 20:44	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:36	10/07/16 20:44	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:36	10/07/16 20:44	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan II	<0.036		0.036	0.0026	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:36	10/07/16 20:44	1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 20:44	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/07/16 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*109*		*30 - 143*	*10/07/16 10:36*	*10/07/16 20:44*	*1*
Tetrachloro-m-xylene	*226*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 20:44*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1242	**5.3**		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:36	10/17/16 12:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*34*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:19*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.55**	**J**	1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:31	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:31	1
Arsenic	**0.030**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Barium	**0.37**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:31	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:31	1
Chromium	**0.19**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cobalt	**0.036**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:31	1
Copper	**0.016**	**J**	0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Iron	**2.7**	~~^ B~~	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:31	1
Lead	**0.22**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:31	1
Magnesium	**28**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Nickel	**0.14**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:31	1
Potassium	**650**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:31	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:31	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:31	1
Sodium	**3200**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:31	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Vanadium	**0.065**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:31	1
Zinc	**0.20**		0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:36	1
Arsenic	**0.028**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Barium	**0.35**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:36	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:36	1
Chromium	**0.18**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cobalt	**0.038**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:36	1
Copper	<0.050		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Iron	**2.1**	~~^ B~~	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:36	1
Lead	**0.029**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:36	1
Magnesium	**29**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:14	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Nickel	**0.15**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:36	1
Potassium	**690**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:36	1
Selenium	**0.039**	**J**	0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:36	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:36	1
Sodium	**3300**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:36	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Vanadium	**0.053**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:36	1
Zinc	**0.056**	**J**	0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00023**		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			10/10/16 00:58	1
Sulfate	**12**	**J** ~~B~~	25	7.4	mg/L			10/12/16 07:46	5
Total Organic Carbon - Duplicates	**530**	~~B~~	20	5.3	mg/L			10/07/16 20:51	20
Nitrogen, Nitrate	**0.053**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.0**		5.0	2.5	mg/L			10/06/16 12:49	1
Ammonia	**790**		50	25	mg/L		10/12/16 19:17	10/13/16 16:08	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:28	1
Nitrogen, Nitrate Nitrite	**0.053**	**J**	0.10	0.035	mg/L			10/14/16 00:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**44**		5.0	1.7	ug/L			10/12/16 01:45	1
Benzene	**7.6**		0.50	0.15	ug/L			10/12/16 01:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 01:45	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/12/16 01:45	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 01:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 01:45	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
cis-1,2-Dichloroethene	**5.5**		1.0	0.41	ug/L			10/12/16 01:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 01:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/12/16 01:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichlorobenzene	**3.2**		1.0	0.33	ug/L			10/12/16 01:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
1,4-Dichlorobenzene	**18**		1.0	0.36	ug/L			10/12/16 01:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 01:45	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 01:45	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 01:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
Ethylbenzene	**78**		0.50	0.18	ug/L			10/12/16 01:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Isopropylbenzene	**5.1**		1.0	0.39	ug/L			10/12/16 01:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 01:45	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Methyl Ethyl Ketone	**20**		5.0	2.1	ug/L			10/12/16 01:45	1
methyl isobutyl ketone	**49**		5.0	2.2	ug/L			10/12/16 01:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Toluene	**200**		0.50	0.15	ug/L			10/12/16 01:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 01:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 01:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 01:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 01:45	1
Vinyl chloride	**5.3**		0.50	0.20	ug/L			10/12/16 01:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		71 - 120		10/12/16 01:45	1
Dibromofluoromethane	91		70 - 120		10/12/16 01:45	1
1,2-Dichloroethane-d4 (Surr)	84		71 - 127		10/12/16 01:45	1
Toluene-d8 (Surr)	97		75 - 120		10/12/16 01:45	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**220**		10	2.2	ug/L			10/12/16 02:12	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		71 - 120		10/12/16 02:12	10
Dibromofluoromethane	89		70 - 120		10/12/16 02:12	10
1,2-Dichloroethane-d4 (Surr)	84		71 - 127		10/12/16 02:12	10
Toluene-d8 (Surr)	98		75 - 120		10/12/16 02:12	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acetophenone	**6.6**	J	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]pyrene	<1.5	* UJ	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[b]fluoranthene	<1.5	* UJ	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[g,h,i]perylene	<7.4	* UJ	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[k]fluoranthene	<1.5	* UJ	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Butyl benzyl phthalate	<15		15	3.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloroaniline	<74	* UJ	74	15	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenz(a,h)anthracene	<2.2	* UJ	2.2	0.38	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dimethylphenol	**77**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
4,6-Dinitro-2-methylphenol	<150	UJ	150	44	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrophenol	<150	UJ	150	64	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,6-Dinitrotoluene	<7.4		7.4	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:56	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<7.4		7.4	3.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Indeno[1,2,3-cd]pyrene	<1.5	UJ	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylnaphthalene	**2.1**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylphenol	**17**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
3 & 4 Methylphenol	**150**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Naphthalene	**13**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:56	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitrophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodiphenylamine	<7.4		7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pyrene	<7.4		7.4	3.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzaldehyde	<300	UJ	300	110	ug/L		10/06/16 16:12	10/07/16 16:56	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:56	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2-Fluorophenol (Surr)	*62*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Nitrobenzene-d5 (Surr)	*45*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Phenol-d5 (Surr)	*63*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Terphenyl-d14 (Surr)	*116*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037	UJ	0.037	0.0049	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/07/16 10:36	10/07/16 21:22	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/07/16 10:36	10/07/16 21:22	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:36	10/07/16 21:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037	UJ	0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 21:22	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/07/16 21:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*21*	*X*	*30 - 143*	*10/07/16 10:36*	*10/07/16 21:22*	*1*
Tetrachloro-m-xylene	*245*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 21:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1242	**4.9**		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:36	10/17/16 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*30*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:34*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:34*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.56**	**J**	1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:04	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:04	1
Arsenic	**0.019**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Barium	**0.40**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:04	1
Calcium	**12**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:04	1
Chromium	**0.20**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:04	1
Copper	**0.022**	**J**	0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Iron	**2.6**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:04	1
Lead	**0.24**		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:04	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:04	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:04	1
Potassium	**700**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:04	1

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:04	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:04	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:04	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Vanadium	**0.064**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:04	1
Zinc	**0.31**		0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:09	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:09	1
Arsenic	**0.022**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Barium	**0.37**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:09	1
Calcium	**11**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:09	1
Chromium	**0.19**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:09	1
Copper	<0.050		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Iron	**2.4**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:09	1
Lead	<0.025		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:09	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:09	1
Potassium	**710**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:09	1
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:09	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:09	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:09	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Vanadium	**0.058**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:09	1
Zinc	**0.051**	**J**	0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00018**	**J**	0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.6**		1.0	0.18	mg/L			10/10/16 01:02	1
Sulfate	<50		50	15	mg/L			10/12/16 07:49	10
Total Organic Carbon - Duplicates	**520**	~~**B**~~	20	5.3	mg/L			10/07/16 21:27	20
Nitrogen, Nitrate	**0.058**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			10/06/16 12:50	1
Ammonia	**780**		50	25	mg/L		10/12/16 19:17	10/13/16 16:15	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:29	1
Nitrogen, Nitrate Nitrite	**0.058**	**J**	0.10	0.035	mg/L			10/14/16 00:22	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20524

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78910.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118151-1
Address: 220 William Pitt Way, ,	Due Date Requested: 10/17/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-13-GW-10042016 (500-118151-1)	10/4/16	15:15 Central		Water			X	2	
DUP-1 (10042016) (500-118151-2)	10/4/16	Central		Water			X	2	
MW-08-GW-10052016 (500-118151-3)	10/5/16	12:05 Central		Water			X	2	
MW-09-GW-10052016 (500-118151-4)	10/5/16	13:35 Central		Water			X	2	
MW-06-GW-10052016 (500-118151-5)	10/5/16	08:40 Central		Water			X	2	
DUP-2 (10052016) (500-118151-6)	10/5/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 10/06/16 1600	Company TA	Received by:		Date/Time: 10.7.16 1200	Company PACE
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company

Seals Intact: Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240001** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-13-GW-10042016** Date Collected: 10/4/2016 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	10/17/2016 14:45	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:45	MM	n
Oxygen	**2.7**	mg/l	0.50	0.13	1	10/17/2016 14:45	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	10/17/2016 14:45	MM	n

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Pittsburgh, PA 15238
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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240002** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **DUP-01(10042016)** Date Collected: 10/4/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	10/17/2016 14:58	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:58	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 14:58	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	10/17/2016 14:58	MM	n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240003** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-08-GW-10052016** Date Collected: 10/5/2016 12:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**12000**	ug/l	0.50	0.027	1	10/17/2016 15:10	MM	n
Carbon Dioxide	**180**	mg/l	5.0	0.24	1	10/17/2016 15:10	MM	n
Oxygen	**3.5**	mg/l	0.50	0.13	1	10/17/2016 15:10	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	10/17/2016 15:10	MM	n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240004** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-09-GW-10052016** Date Collected: 10/5/2016 13:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	10/17/2016 15:23	MM	n
Carbon Dioxide	**410**	mg/l	5.0	0.24	1	10/17/2016 15:23	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 15:23	MM	n
Nitrogen	**13**	mg/l	2.0	0.24	1	10/17/2016 15:23	MM	n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240005** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-06-GW-10052016** Date Collected: 10/5/2016 08:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	1.8	0.094	3.5	10/17/2016 16:05	MM	d,n
Carbon Dioxide	**38**	mg/l	18	0.84	3.5	10/17/2016 16:05	MM	d,n
Oxygen	**1.9**	mg/l	1.8	0.46	3.5	10/17/2016 16:05	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:05	MM	d,n

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ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240006** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **DUP-2(10052016)** Date Collected: 10/5/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	1.8	0.094	3.5	10/17/2016 16:17	MM	d,n
Carbon Dioxide	**40**	mg/l	18	0.84	3.5	10/17/2016 16:17	MM	d,n
Oxygen	**2.3**	mg/l	1.8	0.46	3.5	10/17/2016 16:17	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:17	MM	d,n

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-118189

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.3

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: C1001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key: 4° / to 4° / > 4° / > 4° / ol to 4°

500-118189 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TPH	TSS, SO4, NO2	Dissolved Gases	Comments
1		MW-11-GW-10062016	10/6/16	0830	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- Diss Metals
2		MW-10-GW-10052016	10/5/16	1705	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Field filtered
																- MW-11 & Sample
																receive with preservative
																in VOC vial. Unable
																to remove air bubbles
																- Diss Gas Samples,
																Not able to remove
																all headspace

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/6/16	1225	[signature]	TA-CHI	10/6/16	1225

Lab Courier
Shipped
Hand Delivered X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
QL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Ben
312-420-3651

TAL 4124 500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	UJ	5.0	1.7	ug/L			10/11/16 17:26	1
Benzene	**84**		0.50	0.15	ug/L			10/11/16 17:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 17:26	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/11/16 17:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 17:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
Chlorobenzene	**8.9**		1.0	0.39	ug/L			10/11/16 17:26	1
Chloroethane	**4.4**		1.0	0.51	ug/L			10/11/16 17:26	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 17:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 17:26	1
Cyclohexane	**78**		1.0	0.49	ug/L			10/11/16 17:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 17:26	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/11/16 17:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichlorobenzene	**0.85**	J	1.0	0.33	ug/L			10/11/16 17:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
1,4-Dichlorobenzene	**2.6**		1.0	0.36	ug/L			10/11/16 17:26	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 17:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
Ethylbenzene	**2.6**		0.50	0.18	ug/L			10/11/16 17:26	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			10/11/16 17:26	1
Isopropylbenzene	**39**		1.0	0.39	ug/L			10/11/16 17:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 17:26	1
Methylcyclohexane	**76**		1.0	0.32	ug/L			10/11/16 17:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 17:26	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 17:26	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 17:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Toluene	**1.5**		0.50	0.15	ug/L			10/11/16 17:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 17:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 17:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 17:26	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 17:26	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 17:26	1
Xylenes, Total	**15**		1.0	0.22	ug/L			10/11/16 17:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Date Collected: 10/06/16 08:30
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 17:26*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*10/11/16 17:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 17:26*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 17:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acenaphthylene	<3.7		3.7	0.98	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acetophenone	<18		18	2.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]pyrene	<0.74		0.74	0.36	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 14:58	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloroaniline	**8.2**	**J**	37	7.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloro-3-methylphenol	<37		37	8.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chloronaphthalene	<7.4		7.4	0.86	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chlorophenol	<18		18	2.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenzofuran	<7.4		7.4	0.97	ug/L		10/06/16 16:12	10/07/16 14:58	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dichlorophenol	<37		37	9.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Diethyl phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dimethylphenol	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
4,6-Dinitro-2-methylphenol	<74	UJ	74	22	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrophenol	<74	UJ	74	32	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-octyl phthalate	<37		37	3.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluorene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorocyclopentadiene	<74		74	23	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:58	5
Isophorone	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Methylnaphthalene	**1.8**	**J**	7.4	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
3 & 4 Methylphenol	**2.2**	**J**	7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Naphthalene	**1.9**	**J**	3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
3-Nitroaniline	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitrophenol	<37		37	9.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitrophenol	<74		74	27	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.57	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodiphenylamine	**1.6**	**J**	3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pentachlorophenol	<74		74	14	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenol	<18		18	2.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzaldehyde	<150	✗ UJ	150	56	ug/L		10/06/16 16:12	10/07/16 14:58	5
Caprolactam	<37		37	5.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*80*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2-Fluorophenol (Surr)	*53*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Phenol-d5 (Surr)	*48*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:20	10/07/16 20:06	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:20	10/07/16 20:06	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:20	10/07/16 20:06	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:20	10/07/16 20:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:20	10/07/16 20:06	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/07/16 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:06*	*1*
Tetrachloro-m-xylene	*70*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:20	10/10/16 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*76*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:26*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.095**	**J**	0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:27	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:27	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Barium	**0.75**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:27	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:27	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:27	1
Copper	**0.0053**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:27	1
Lead	**0.0060**		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:27	1
Magnesium	**110**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:27	1
Manganese	**0.21**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:27	1
Potassium	**100**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:27	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:27	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:27	1
Sodium	**320**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:27	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Vanadium	**0.0055**		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:27	1
Zinc	**0.018**	**J**	0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:27	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Date Collected: 10/06/16 08:30
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-1

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:32	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Barium	**0.76**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:32	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:32	1
Chromium	**0.0075**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:32	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:32	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:32	1
Magnesium	**120**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:32	1
Manganese	**0.22**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:32	1
Potassium	**110**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:32	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:32	1
Sodium	**330**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:32	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Vanadium	**0.0048**	**J**	0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:32	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:38	1
Sulfate	**< 6.7**	~~B~~ UB	~~5.0~~ 6.7	1.5	mg/L			10/14/16 06:12	1
Total Organic Carbon - Duplicates	**65**		5.0	1.3	mg/L			10/12/16 00:44	5
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**68**		5.0	2.5	mg/L			10/07/16 13:31	1
Ammonia	**59**		4.0	2.0	mg/L		10/13/16 21:45	10/16/16 19:37	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	UJ	5.0	1.7	ug/L			10/11/16 16:59	1
Benzene	**0.54**		0.50	0.15	ug/L			10/11/16 16:59	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 16:59	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/11/16 16:59	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 16:59	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
Chlorobenzene	**0.92**	**J**	1.0	0.39	ug/L			10/11/16 16:59	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 16:59	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 16:59	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/11/16 16:59	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 16:59	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 16:59	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 16:59	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			10/11/16 16:59	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 16:59	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 16:59	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 16:59	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 16:59	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 16:59	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 16:59	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 16:59	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 16:59	1
Vinyl chloride	**0.42**	**J**	0.50	0.20	ug/L			10/11/16 16:59	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 16:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Date Collected: 10/05/16 17:05
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*10/11/16 16:59*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/11/16 16:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 16:59*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 16:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:30	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:30	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:30	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloroaniline	<7.4	UJ	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:30	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:30	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:30	1
4,6-Dinitro-2-methylphenol	<15	UJ	15	4.4	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrophenol	<15	UJ	15	6.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:30	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
3 & 4 Methylphenol	**0.47**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:30	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:30	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodiphenylamine	**0.56**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzaldehyde	<29	UJ	29	11	ug/L		10/06/16 16:12	10/07/16 13:30	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:30	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:30	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*83*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Nitrobenzene-d5 (Surr)	*74*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Phenol-d5 (Surr)	*49*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Terphenyl-d14 (Surr)	*107*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2,4,6-Tribromophenol (Surr)	*128*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/07/16 10:20	10/07/16 20:25	1
beta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/07/16 10:20	10/07/16 20:25	1
delta-BHC	<0.037		0.037	0.0096	ug/L		10/07/16 10:20	10/07/16 20:25	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/07/16 10:20	10/07/16 20:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/07/16 10:20	10/07/16 20:25	1
Toxaphene	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/07/16 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:25*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:25*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1221	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1232	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1242	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1248	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1254	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/07/16 10:20	10/10/16 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:42*	*1*
DCB Decachlorobiphenyl	*97*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:48	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Barium	**0.44**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:48	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:48	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:48	1
Copper	**0.0034**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:48	1
Lead	**0.0026**	**J**	0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:48	1
Magnesium	**58**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:48	1
Manganese	**0.58**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Nickel	**0.0038**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:48	1
Potassium	**52**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:48	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:48	1
Sodium	**140**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:48	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:48	1
Zinc	**0.038**		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:48	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:52	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Barium	**0.45**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:52	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:52	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:52	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:52	1
Magnesium	**61**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:52	1
Manganese	**0.61**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Nickel	**0.0039**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:52	1
Potassium	**54**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:52	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:52	1
Sodium	**150**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:52	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:42	1
Sulfate	**22**	~~**B**~~	5.0	1.5	mg/L			10/14/16 06:16	1
Total Organic Carbon - Duplicates	**20**	~~**B**~~	1.0	0.27	mg/L			10/08/16 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**42**		5.0	2.5	mg/L			10/07/16 13:32	1
Ammonia	**19**	~~**B**~~	1.0	0.50	mg/L		10/13/16 21:45	10/14/16 00:48	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:52	1

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20525

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/17/2016

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving
Company: Pace Analytical Services, Inc.
Address: 220 William Pitt Way,
City: Pittsburgh
State, Zip: PA, 15238
Phone: 412-826-5245(Tel)
Email:
Project Name: Lake Calumet Cluster Site
Site:

Sampler:
Phone:
Due Date Requested: 10/18/2016
TAT Requested (days):
PO #:
WO #:
Project #: 50011099
SSOW#:

Lab PM: Hargraves, Therese M
E-Mail: therese.hargraves@testamericainc.com
Carrier Tracking No(s):
COC No: 500-78911.1
Page: Page 1 of 1
Job #: 500-118189-2

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW11-GW-10062016 (500-118189-1)	10/6/16	08:30 Central		Water			X	2	
MW10-GW-10052016 (500-118189-2)	10/5/16	17:05 Central		Water			X	2	

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/06/16 1600	TA	[signature]	10.7.16 1200	PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250001 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW11-GW-10062016 Date Collected: 10/6/2016 08:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	10000	ug/l	0.50	0.027	1	10/12/2016 14:22	TD	n
Carbon Dioxide	130	mg/l	5.0	0.24	1	10/12/2016 14:22	TD	n
Oxygen	1.1	mg/l	0.50	0.13	1	10/12/2016 14:22	TD	n
Nitrogen	5.1	mg/l	2.0	0.24	1	10/12/2016 14:22	TD	n

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Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250002 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW10-GW-10052016 Date Collected: 10/5/2016 17:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	5200	ug/l	0.50	0.027	1	10/12/2016 14:34	TD	n
Carbon Dioxide	140	mg/l	5.0	0.24	1	10/12/2016 14:34	TD	n
Oxygen	3.1	mg/l	0.50	0.13	1	10/12/2016 14:34	TD	n
Nitrogen	13	mg/l	2.0	0.24	1	10/12/2016 14:34	TD	n

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118189-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/17/2016 11:27:36 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Receipt Checklists 17

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-2

Job ID: 500-118189-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118189-2

Comments
No additional comments.

Receipt
The samples were received on 10/6/2016 12:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

October 14, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-118189-2**
Pace Workorder: 20525

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 07, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 10/14/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages ____

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 20525 500-118189-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
205250001	MW11-GW-10062016	Water	10/6/2016 08:30	10/7/2016 12:00
205250002	MW10-GW-10052016	Water	10/5/2016 17:05	10/7/2016 12:00

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Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250001 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW11-GW-10062016 Date Collected: 10/6/2016 08:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	10000	ug/l	0.50	0.027	1	10/12/2016 14:22	TD	n
Carbon Dioxide	130	mg/l	5.0	0.24	1	10/12/2016 14:22	TD	n
Oxygen	1.1	mg/l	0.50	0.13	1	10/12/2016 14:22	TD	n
Nitrogen	5.1	mg/l	2.0	0.24	1	10/12/2016 14:22	TD	n

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Pittsburgh, PA 15238
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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250002 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW10-GW-10052016 Date Collected: 10/5/2016 17:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	5200	ug/l	0.50	0.027	1	10/12/2016 14:34	TD	n
Carbon Dioxide	140	mg/l	5.0	0.24	1	10/12/2016 14:34	TD	n
Oxygen	3.1	mg/l	0.50	0.13	1	10/12/2016 14:34	TD	n
Nitrogen	13	mg/l	2.0	0.24	1	10/12/2016 14:34	TD	n

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 20525 500-118189-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 20525 500-118189-2

QC Batch: DISG/5664 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 205250001, 205250002

METHOD BLANK: 44719

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 44720

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 44721 44723

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	800	810	106	108	80-120	1.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 44722 44724

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	140	140	117	117	80-120	0	20	n
Oxygen	mg/l	11	12	10	105	91	80-120	14	20	n
Nitrogen	mg/l	140	120	120	90	87	80-120	3.4	20	n

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Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 20525 500-118189-2

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 20525 500-118189-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
205250001	MW11-GW-10062016			AM20GAX	DISG/5664
205250002	MW10-GW-10052016			AM20GAX	DISG/5664

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TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20525

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78911.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118189-2
Address: 220 William Pitt Way,	Due Date Requested: 10/18/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW11-GW-10062016 (500-118189-1)	10/6/16	08:30 Central		Water			X	2	
MW10-GW-10052016 (500-118189-2)	10/5/16	17:05 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:		
Relinquished by:	Date/Time: 10/06/16 1600	Company TA	Received by:	Date/Time: 10.7.16 1200	Company PAS	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Cooler Receipt Form

Client Name: TA Project: 500-118189-2 Lab Work Order: 20525

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 651484278861

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 2°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LO Date: 10.7.16

Project Manager Review: RW Date: 10-7-16

F-PAE-Q-009-rev.00, 20 Nov2014

Sample Tracking Record

Client Name: Test America

Client Project Number: 500-118189-2

Page ____ of ____

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas				
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
205251-1-2				see above	LY	10.7.16	12.00
↓	TD	10-12-16	420	diss gas	TD	10-12-16	1500

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-118189

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.3

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key: 4° / to 4° / > 4° / > 4° / >1 to 4°

500-118189 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TPH	TSS, SO4, NO2	Dissolved Gases	Comments
1		MW-11-GW-10062016	10/6/16	0830	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- Diss Metals
2		MW-10-GW-10052016	10/5/16	1705	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Field filtered
																- MW-11 & Sample
																receive with pleasedtue
																in VOC vial. Unable
																to remove air bubbles
																- Diss Gas Samples,
																Not able to remove
																all headspace

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/6/16	1225	[signature]	TA-CHI	10/6/16	1225
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped
Hand Delivered X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
QL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Ben
312-420-3651

TAL-4124-500 (1209)

10/17/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118189-2

Login Number: 118189
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123839-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/27/2017 4:29:51 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-123839-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123839-1

Comments
No additional comments.

Receipt
The samples were received on 2/14/2017 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 4.8º C.

The Dissolved Gases analyzed by Pace Labs will be reported in a separate -2 job.

GC/MS VOA
Method(s) 8260B: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-09-GW-02142017 (500-123839-2). The sample was analyzed within 7 days per EPA recommendation, therefore no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: LCSD 500-372103/3-A had seven analytes outside of control limits. The LCS was within limits. There were 13 RPD's outside of limits. This data has been reported and qualified.(LCS 500-372103/2-A) and (LCSD 500-372103/3-A)

Method(s) 8270D: CCVIS 500-372152/2 was outside the method criteria for Benzaldehyde, biased low. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.(CCVIS 500-372152/2)

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-367726/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-10-GW-02142017 (500-123839-1), MW-09-GW-02142017 (500-123839-2), MW-08-GW-02142017 (500-123839-3) and Dup-2-02142017 (500-123839-4). The reagent lot number used was: 153166.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: Dissolved metals results for the following sample is greater than the corresponding total metals results: MW-09-GW-02142017 (500-123839-2). The dissolved metals and total metals results have been confirmed by the analysis of the undigested sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017 — Lab Sample ID: 500-123839-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	1.3	J	7.3	1.2	ug/L	1		8270D	Total/NA
Barium	0.093		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	180		0.20	0.059	mg/L	1		6010C	Total/NA
Cobalt	0.0011	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0088	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	12		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	77		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.99		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.011		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	34		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	64		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.074		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.093		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	180		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0052	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	11		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	78		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	1.0		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.010		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	65		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.073		0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfate	530	B	100	29	mg/L	20		9038	Total/NA
Total Organic Carbon - Duplicates	12		1.0	0.27	mg/L	1		9060A	Total/NA
Nitrogen, Nitrate	1.3		0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	30		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	1.7		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.016	J	0.020	0.0088	mg/L	1		SM 4500 NO2 B	Total/NA
Nitrogen, Nitrate Nitrite	1.3		0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: MW-09-GW-02142017 — Lab Sample ID: 500-123839-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.5		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	14		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.4		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.2		1.0	0.32	ug/L	1		8260B	Total/NA
Acenaphthene	1.1		0.74	0.23	ug/L	1		8270D	Total/NA
Dibenzofuran	0.21	J	1.5	0.19	ug/L	1		8270D	Total/NA
Fluorene	0.42	J	0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.5		1.5	0.048	ug/L	1		8270D	Total/NA
Naphthalene	0.29	J	0.74	0.23	ug/L	1		8270D	Total/NA
Phenanthrene	0.37	J	0.74	0.22	ug/L	1		8270D	Total/NA
Barium	0.82		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0040	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	26		0.20	0.10	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017 (Continued) — Lab Sample ID: 500-123839-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	81		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.16		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0046	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	77		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	200		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.83		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0030	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	26		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	83		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.16		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0041	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	78		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	10	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	26		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	45		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	73		5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-08-GW-02142017 — Lab Sample ID: 500-123839-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.7		5.0	1.7	ug/L	1		8260B	Total/NA
Barium	0.67		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.00094	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0022	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	11		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	91		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	36		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	240		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	11		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	87		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00012	J	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfate	2.4	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	15		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	36		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: Dup-2-02142017 — Lab Sample ID: 500-123839-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
3 & 4 Methylphenol	0.33	J	1.5	0.33	ug/L	1		8270D	Total/NA
Barium	0.68		0.010	0.0022	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017 (Continued) — Lab Sample ID: 500-123839-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	11		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	92		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.19		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	37		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	250		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.017	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	11		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	88		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	1.7	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	15		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	26		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	37		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-123839-1	MW-10-GW-02142017	Water	02/14/17 08:00	02/14/17 16:40
500-123839-2	MW-09-GW-02142017	Water	02/14/17 09:40	02/14/17 16:40
500-123839-3	MW-08-GW-02142017	Water	02/14/17 11:30	02/14/17 16:40
500-123839-4	Dup-2-02142017	Water	02/14/17 00:00	02/14/17 16:40

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 19:33	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 19:33	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 19:33	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 19:33	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 19:33	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 19:33	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 19:33	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 19:33	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 19:33	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 19:33	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 19:33	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 19:33	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 19:33	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 19:33	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 19:33	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 19:33	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 19:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/16/17 19:33*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/16/17 19:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 127*		*02/16/17 19:33*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 19:33*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/15/17 08:59	02/15/17 17:13	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/15/17 08:59	02/15/17 17:13	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:13	1
Carbazole	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chlorophenol	<3.6	*	3.6	0.41	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/15/17 08:59	02/15/17 17:13	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobutadiene	<3.6	*	3.6	0.38	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorocyclopentadiene	<15		15	4.6	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachloroethane	<3.6	*	3.6	0.44	ug/L		02/15/17 08:59	02/15/17 17:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Methylnaphthalene	<1.5		1.5	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/15/17 08:59	02/15/17 17:13	1
3-Nitroaniline	<7.3	*	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitrophenol	<7.3	*	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitrophenol	<15	*	15	5.4	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenol	<3.6	*	3.6	0.49	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,5-Trichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,6-Trichlorophenol	<3.6	*	3.6	0.52	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 17:13	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 17:13	1
Atrazine	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
1,1'-Biphenyl	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Nitrobenzene-d5 (Surr)	*89*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Phenol-d5 (Surr)	*60*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2,4,6-Tribromophenol (Surr)	*97*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:13	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:13	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:13	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:13	1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:13	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:13*	*1*
Tetrachloro-m-xylene	*56*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 09:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*58*		*30 - 127*	*02/15/17 07:39*	*02/16/17 09:50*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*02/15/17 07:39*	*02/16/17 09:50*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:47	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:47	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Barium	**0.093**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:47	1
Calcium	**180**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:47	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cobalt	**0.0011**	**J**	0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:47	1
Copper	**0.0088**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Iron	**12**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:47	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:47	1
Magnesium	**77**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:47	1
Manganese	**0.99**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Nickel	**0.011**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:47	1
Potassium	**34**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:47	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:47	1
Sodium	**64**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:47	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:47	1
Zinc	**0.074**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:47	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:50	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Barium	**0.093**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:50	1
Calcium	**180**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:50	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:50	1
Copper	**0.0052**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:50	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:50	1
Magnesium	**78**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:50	1
Manganese	**1.0**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Nickel	**0.010**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:50	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:50	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:50	1
Sodium	**65**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:50	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:50	1
Zinc	**0.073**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:43	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:23	1
Sulfate	**530**	**B**	100	29	mg/L			02/15/17 06:52	20
Total Organic Carbon - Duplicates	**12**		1.0	0.27	mg/L			02/16/17 22:11	1
Nitrogen, Nitrate	**1.3**		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**30**		5.0	2.5	mg/L			02/15/17 11:22	1
Ammonia	**1.7**		0.20	0.10	mg/L		02/14/17 21:30	02/15/17 00:16	1
Nitrogen, Nitrite	**0.016**	**J**	0.020	0.0088	mg/L			02/15/17 14:18	1
Nitrogen, Nitrate Nitrite	**1.3**		0.10	0.035	mg/L			02/17/17 21:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 20:00	1
Benzene	**1.5**		0.50	0.15	ug/L			02/16/17 20:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
Chlorobenzene	**14**		1.0	0.39	ug/L			02/16/17 20:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:00	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/16/17 20:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Isopropylbenzene	**3.0**		1.0	0.39	ug/L			02/16/17 20:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
Methylcyclohexane	**1.2**		1.0	0.32	ug/L			02/16/17 20:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 20:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:00	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/16/17 20:00*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*02/16/17 20:00*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/16/17 20:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.1**		0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 17:40	1
Anthracene	<0.74		0.74	0.25	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 17:40	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:40	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chlorophenol	<3.7	*	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 17:40	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:40	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dichlorophenol	<7.4	*	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 17:40	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.4	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluorene	**0.42**	**J**	0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobutadiene	<3.7	*	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachloroethane	<3.7	*	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 17:40	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 17:40	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Methylnaphthalene	**2.5**		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 17:40	1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Naphthalene	**0.29**	**J**	0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/15/17 08:59	02/15/17 17:40	1
3-Nitroaniline	<7.4	*	7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/15/17 08:59	02/15/17 17:40	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitrophenol	<7.4	*	7.4	1.8	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitrophenol	<15	*	15	5.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenol	<3.7	*	3.7	0.50	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pyrene	<0.74		0.74	0.31	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,5-Trichlorophenol	<7.4	*	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,6-Trichlorophenol	<3.7	*	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzaldehyde	<30		30	11	ug/L		02/15/17 08:59	02/15/17 17:40	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/15/17 08:59	02/15/17 17:40	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 17:40	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2-Fluorophenol (Surr)	*52*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Phenol-d5 (Surr)	*47*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:33	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:33	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:33	1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:33*	*1*
Tetrachloro-m-xylene	*46*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:06*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:00	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Barium	**0.82**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:00	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:00	1
Chromium	**0.0040**	**J**	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:00	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Iron	**26**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:00	1
Magnesium	**81**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:00	1
Manganese	**0.16**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Nickel	**0.0046**	**J**	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:00	1
Potassium	**77**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:00	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:00	1
Sodium	**200**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:00	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:00	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:00	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:04	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Barium	**0.83**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:04	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:04	1
Chromium	**0.0030**	**J**	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:04	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Iron	**26**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:04	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:04	1
Magnesium	**83**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:04	1
Manganese	**0.16**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Nickel	**0.0041**	**J**	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:04	1
Potassium	**78**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:04	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:04	1
Sodium	**200**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:04	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:04	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:26	1
Sulfate	**10**	**B**	5.0	1.5	mg/L			02/15/17 06:53	1
Total Organic Carbon - Duplicates	**26**		1.0	0.27	mg/L			02/16/17 22:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**45**		5.0	2.5	mg/L			02/15/17 11:24	1
Ammonia	**73**		5.0	2.5	mg/L		02/14/17 21:30	02/15/17 01:01	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:19	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5.7		5.0	1.7	ug/L			02/16/17 20:27	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:27	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 20:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:27	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/16/17 20:27*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*71 - 127*		*02/16/17 20:27*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 20:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:07	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:07	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chlorophenol	<3.7	*	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:07	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:07	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:07	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobutadiene	<3.7	*	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachloroethane	<3.7	*	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:07	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:07	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:07	1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:07	1
3-Nitroaniline	<7.3	*	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:07	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitrophenol	<7.3	*	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitrophenol	<15	*	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenol	<3.7	*	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,5-Trichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,6-Trichlorophenol	<3.7	*	3.7	0.52	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:07	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:07	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:07	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Nitrobenzene-d5 (Surr)	*61*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Phenol-d5 (Surr)	*42*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Terphenyl-d14 (Surr)	*70*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		02/15/17 07:39	02/21/17 12:52	1
beta-BHC	<0.036		0.036	0.0093	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		02/15/17 07:39	02/21/17 12:52	1
delta-BHC	<0.036		0.036	0.0094	ug/L		02/15/17 07:39	02/21/17 12:52	1
Dieldrin	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin ketone	<0.036		0.036	0.015	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		02/15/17 07:39	02/21/17 12:52	1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:52	1
Toxaphene	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/21/17 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:52*	*1*
Tetrachloro-m-xylene	*45*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1221	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1232	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1242	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1248	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1254	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1260	<0.36		0.36	0.064	ug/L		02/15/17 07:39	02/16/17 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*51*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:21*	*1*
DCB Decachlorobiphenyl	*74*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:09	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:09	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Barium	**0.67**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cadmium	**0.00094**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:09	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:09	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:09	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:09	1
Magnesium	**91**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:09	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:09	1
Potassium	**36**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:09	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:09	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:09	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:09	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:09	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:16	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:16	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:16	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:16	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:16	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:16	1
Magnesium	**87**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:16	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:16	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:16	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:16	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:16	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:16	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:16	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:28	1
Sulfate	**2.4**	**J B**	5.0	1.5	mg/L			02/15/17 07:02	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 22:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/15/17 11:26	1
Ammonia	**36**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:04	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 20:54	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:54	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:54	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:54	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:54	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:54	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:54	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:54	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:54	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:54	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 20:54	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:54	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:54	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:54	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:54	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:54	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		71 - 120		02/16/17 20:54	1
Dibromofluoromethane	94		70 - 120		02/16/17 20:54	1
1,2-Dichloroethane-d4 (Surr)	107		71 - 127		02/16/17 20:54	1
Toluene-d8 (Surr)	100		75 - 120		02/16/17 20:54	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:34	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:34	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chlorophenol	<3.7	*	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:34	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:34	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 18:34	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobutadiene	<3.7	*	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachloroethane	<3.7	*	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:34	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:34	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:34	1

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
3 & 4 Methylphenol	**0.33**	**J**	1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:34	1
3-Nitroaniline	<7.3	*	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:34	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitrophenol	<7.3	*	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitrophenol	<15	*	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenol	<3.7	*	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,5-Trichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,6-Trichlorophenol	<3.7	*	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:34	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:34	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:34	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2-Fluorophenol (Surr)	*38*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Nitrobenzene-d5 (Surr)	*51*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Phenol-d5 (Surr)	*36*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 13:11	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 13:11	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 13:11	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 13:11	1

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 13:11	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*30 - 143*	*02/15/17 07:39*	*02/21/17 13:11*	*1*
Tetrachloro-m-xylene	*37*		*30 - 120*	*02/15/17 07:39*	*02/21/17 13:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*47*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:36*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:36*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:20	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:20	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Barium	**0.68**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:20	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:20	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:20	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:20	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:20	1
Magnesium	**92**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:20	1
Manganese	**0.19**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:20	1
Potassium	**37**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:20	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:20	1
Sodium	**250**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:20	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:20	1
Zinc	**0.017**	**J**	0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:20	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:24	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:24	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:24	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:24	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:24	1
Magnesium	**88**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:24	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:24	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:24	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:24	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:24	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:24	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:31	1
Sulfate	**1.7**	**J B**	5.0	1.5	mg/L			02/20/17 09:22	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 23:01	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**26**		5.0	2.5	mg/L			02/15/17 11:27	1
Ammonia	**37**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:07	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:40	1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

GC/MS VOA

Analysis Batch: 372273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8260B	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8260B	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8260B	
500-123839-4	Dup-2-02142017	Total/NA	Water	8260B	
MB 500-372273/11	Method Blank	Total/NA	Water	8260B	
LCS 500-372273/10	Lab Control Sample	Total/NA	Water	8260B	
500-123839-4 MS	Dup-2-02142017	Total/NA	Water	8260B	
500-123839-4 MSD	Dup-2-02142017	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 372103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	3510C	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	3510C	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	3510C	
500-123839-4	Dup-2-02142017	Total/NA	Water	3510C	
MB 500-372103/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372103/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372103/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8270D	372103
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8270D	372103
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8270D	372103
500-123839-4	Dup-2-02142017	Total/NA	Water	8270D	372103
MB 500-372103/1-A	Method Blank	Total/NA	Water	8270D	372103
LCS 500-372103/2-A	Lab Control Sample	Total/NA	Water	8270D	372103
LCSD 500-372103/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	372103

GC Semi VOA

Prep Batch: 372085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	3510C	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	3510C	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	3510C	
500-123839-4	Dup-2-02142017	Total/NA	Water	3510C	
MB 500-372085/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372085/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-372085/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372085/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-372085/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8082A	372085
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8082A	372085
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8082A	372085

GC Semi VOA (Continued)

Analysis Batch: 372289 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-4	Dup-2-02142017	Total/NA	Water	8082A	372085
MB 500-372085/1-A	Method Blank	Total/NA	Water	8082A	372085
LCS 500-372085/4-A	Lab Control Sample	Total/NA	Water	8082A	372085
LCSD 500-372085/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	372085

Analysis Batch: 372911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8081B	372085
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8081B	372085
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8081B	372085
500-123839-4	Dup-2-02142017	Total/NA	Water	8081B	372085
MB 500-372085/1-A	Method Blank	Total/NA	Water	8081B	372085
LCS 500-372085/2-A	Lab Control Sample	Total/NA	Water	8081B	372085
LCSD 500-372085/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	372085

Metals

Prep Batch: 372096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	3010A	
500-123839-1	MW-10-GW-02142017	Total/NA	Water	3010A	
500-123839-2	MW-09-GW-02142017	Dissolved	Water	3010A	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	3010A	
500-123839-3	MW-08-GW-02142017	Dissolved	Water	3010A	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	3010A	
500-123839-4	Dup-2-02142017	Dissolved	Water	3010A	
500-123839-4	Dup-2-02142017	Total/NA	Water	3010A	
MB 500-372096/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-372096/2-A	Lab Control Sample	Total/NA	Water	3010A	
500-123839-4 MS	Dup-2-02142017	Dissolved	Water	3010A	
500-123839-4 MSD	Dup-2-02142017	Dissolved	Water	3010A	
500-123839-4 DU	Dup-2-02142017	Dissolved	Water	3010A	

Prep Batch: 372119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	7470A	
500-123839-1	MW-10-GW-02142017	Total/NA	Water	7470A	
500-123839-2	MW-09-GW-02142017	Dissolved	Water	7470A	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	7470A	
500-123839-3	MW-08-GW-02142017	Dissolved	Water	7470A	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	7470A	
500-123839-4	Dup-2-02142017	Dissolved	Water	7470A	
500-123839-4	Dup-2-02142017	Total/NA	Water	7470A	
MB 500-372119/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-372119/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 372337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	7470A	372119
500-123839-1	MW-10-GW-02142017	Total/NA	Water	7470A	372119

Metals (Continued)

Analysis Batch: 372337 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-2	MW-09-GW-02142017	Dissolved	Water	7470A	372119
500-123839-2	MW-09-GW-02142017	Total/NA	Water	7470A	372119
500-123839-3	MW-08-GW-02142017	Dissolved	Water	7470A	372119
500-123839-3	MW-08-GW-02142017	Total/NA	Water	7470A	372119
500-123839-4	Dup-2-02142017	Dissolved	Water	7470A	372119
500-123839-4	Dup-2-02142017	Total/NA	Water	7470A	372119
MB 500-372119/12-A	Method Blank	Total/NA	Water	7470A	372119
LCS 500-372119/13-A	Lab Control Sample	Total/NA	Water	7470A	372119

Analysis Batch: 372788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	6010C	372096
500-123839-1	MW-10-GW-02142017	Total/NA	Water	6010C	372096
500-123839-2	MW-09-GW-02142017	Dissolved	Water	6010C	372096
500-123839-2	MW-09-GW-02142017	Total/NA	Water	6010C	372096
500-123839-3	MW-08-GW-02142017	Dissolved	Water	6010C	372096
500-123839-3	MW-08-GW-02142017	Total/NA	Water	6010C	372096
500-123839-4	Dup-2-02142017	Dissolved	Water	6010C	372096
500-123839-4	Dup-2-02142017	Total/NA	Water	6010C	372096
MB 500-372096/1-A	Method Blank	Total/NA	Water	6010C	372096
LCS 500-372096/2-A	Lab Control Sample	Total/NA	Water	6010C	372096
500-123839-4 MS	Dup-2-02142017	Dissolved	Water	6010C	372096
500-123839-4 MSD	Dup-2-02142017	Dissolved	Water	6010C	372096
500-123839-4 DU	Dup-2-02142017	Dissolved	Water	6010C	372096

General Chemistry

Prep Batch: 372038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NH3 B	
MB 500-372038/9-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-372038/10-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
500-123839-1 MS	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-1 MSD	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 372067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NH3 G	372038
MB 500-372038/9-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	372038
LCS 500-372038/10-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-1 MS	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-1 MSD	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038

General Chemistry (Continued)

Analysis Batch: 372084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	9038	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	9038	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	9038	
MB 500-372084/3	Method Blank	Total/NA	Water	9038	
LCS 500-372084/4	Lab Control Sample	Total/NA	Water	9038	
500-123839-2 MS	MW-09-GW-02142017	Total/NA	Water	9038	
500-123839-2 MSD	MW-09-GW-02142017	Total/NA	Water	9038	
500-123839-3 MS	MW-08-GW-02142017	Total/NA	Water	9038	
500-123839-3 MSD	MW-08-GW-02142017	Total/NA	Water	9038	

Analysis Batch: 372140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 2540D	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 2540D	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 2540D	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 2540D	
MB 500-372140/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-372140/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 372329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NO2 B	
MB 500-372329/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-372329/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 372593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	9060A	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	9060A	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	9060A	
500-123839-4	Dup-2-02142017	Total/NA	Water	9060A	
MB 500-372593/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372593/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 372664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NO3 F	
MB 500-372664/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-372664/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 372666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	Nitrate by calc	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	Nitrate by calc	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	Nitrate by calc	

General Chemistry (Continued)

Analysis Batch: 372666 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-4	Dup-2-02142017	Total/NA	Water	Nitrate by calc	

Analysis Batch: 372717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-4	Dup-2-02142017	Total/NA	Water	9038	
MB 500-372717/3	Method Blank	Total/NA	Water	9038	
LCS 500-372717/4	Lab Control Sample	Total/NA	Water	9038	
500-123839-4 MS	Dup-2-02142017	Total/NA	Water	9038	
500-123839-4 MSD	Dup-2-02142017	Total/NA	Water	9038	

Analysis Batch: 372854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	9034	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	9034	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	9034	
500-123839-4	Dup-2-02142017	Total/NA	Water	9034	
MB 500-372854/1	Method Blank	Total/NA	Water	9034	
LCS 500-372854/2	Lab Control Sample	Total/NA	Water	9034	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-123839-1	MW-10-GW-02142017	99	94	107	99
500-123839-2	MW-09-GW-02142017	100	95	109	100
500-123839-3	MW-08-GW-02142017	97	95	104	99
500-123839-4	Dup-2-02142017	98	94	107	100
500-123839-4 MS	Dup-2-02142017	97	98	106	100
500-123839-4 MSD	Dup-2-02142017	97	96	106	99
LCS 500-372273/10	Lab Control Sample	97	92	98	102
MB 500-372273/11	Method Blank	100	95	104	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-123839-1	MW-10-GW-02142017	82	72	89	60	91	97
500-123839-2	MW-09-GW-02142017	61	52	68	47	86	88
500-123839-3	MW-08-GW-02142017	59	50	61	42	70	79
500-123839-4	Dup-2-02142017	54	38	51	36	81	85
LCS 500-372103/2-A	Lab Control Sample	84	76	90	69	104	105
LCSD 500-372103/3-A	Lab Control Sample Dup	80	30	88	40	95	44
MB 500-372103/1-A	Method Blank	87	81	97	73	101	99

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-123839-1	MW-10-GW-02142017	74	56
500-123839-2	MW-09-GW-02142017	66	46
500-123839-3	MW-08-GW-02142017	81	45
500-123839-4	Dup-2-02142017	80	37
LCS 500-372085/2-A	Lab Control Sample	105	51
LCSD 500-372085/3-A	Lab Control Sample Dup	111	43
MB 500-372085/1-A	Method Blank	96	40

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB2
Lab Sample ID	**Client Sample ID**	**(30-127)**	**(30-150)**
500-123839-1	MW-10-GW-02142017	58	55
500-123839-2	MW-09-GW-02142017	53	57
500-123839-3	MW-08-GW-02142017	51	74
500-123839-4	Dup-2-02142017	47	79
LCS 500-372085/4-A	Lab Control Sample	43	100
LCSD 500-372085/5-A	Lab Control Sample Dup	43	96
MB 500-372085/1-A	Method Blank	39	83

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372273/11
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 14:27	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 14:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 14:27	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 14:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 14:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 14:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 14:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 14:27	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 14:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 14:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 14:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 14:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 14:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 14:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 14:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 14:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 14:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 14:27	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 14:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 14:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 14:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 14:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 14:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 14:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 14:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 14:27	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 14:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 14:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 14:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 14:27	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 14:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 14:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 14:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 14:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 14:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 14:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 14:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 14:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 14:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 14:27	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 14:27	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		71 - 120		02/16/17 14:27	1
Dibromofluoromethane	95		70 - 120		02/16/17 14:27	1
1,2-Dichloroethane-d4 (Surr)	104		71 - 127		02/16/17 14:27	1
Toluene-d8 (Surr)	101		75 - 120		02/16/17 14:27	1

Lab Sample ID: LCS 500-372273/10
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.8		ug/L		80	37 - 141
Benzene	50.0	44.6		ug/L		89	70 - 125
Bromodichloromethane	50.0	44.2		ug/L		88	70 - 125
Bromoform	50.0	41.4		ug/L		83	54 - 128
Bromomethane	50.0	46.2		ug/L		92	40 - 150
Carbon disulfide	50.0	42.4		ug/L		85	68 - 125
Carbon tetrachloride	50.0	45.2		ug/L		90	70 - 125
Chlorobenzene	50.0	46.1		ug/L		92	70 - 125
Chloroethane	50.0	49.7		ug/L		99	60 - 139
Chloroform	50.0	44.6		ug/L		89	70 - 125
Chloromethane	50.0	51.8		ug/L		104	60 - 140
cis-1,2-Dichloroethene	50.0	43.2		ug/L		86	70 - 125
cis-1,3-Dichloropropene	50.0	46.6		ug/L		93	70 - 125
Cyclohexane	50.0	47.4		ug/L		95	56 - 149
Dibromochloromethane	50.0	45.3		ug/L		91	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	43.1		ug/L		86	51 - 125
1,2-Dibromoethane	50.0	46.6		ug/L		93	70 - 125
1,2-Dichlorobenzene	50.0	46.5		ug/L		93	70 - 125
1,3-Dichlorobenzene	50.0	46.6		ug/L		93	70 - 125
1,4-Dichlorobenzene	50.0	46.3		ug/L		93	70 - 125
Dichlorodifluoromethane	50.0	54.9		ug/L		110	51 - 140
1,1-Dichloroethane	50.0	44.6		ug/L		89	70 - 125
1,2-Dichloroethane	50.0	45.9		ug/L		92	70 - 125
1,1-Dichloroethene	50.0	44.5		ug/L		89	70 - 125
1,2-Dichloropropane	50.0	45.6		ug/L		91	70 - 125
Ethylbenzene	50.0	48.6		ug/L		97	70 - 125
2-Hexanone	50.0	43.7		ug/L		87	49 - 139
Isopropylbenzene	50.0	47.5		ug/L		95	70 - 125
Methyl acetate	250	222		ug/L		89	60 - 148
Methylcyclohexane	50.0	47.1		ug/L		94	70 - 127
Methylene Chloride	50.0	43.2		ug/L		86	68 - 125
Methyl Ethyl Ketone	50.0	39.6		ug/L		79	52 - 142
methyl isobutyl ketone	50.0	44.8		ug/L		90	47 - 140
Methyl tert-butyl ether	50.0	44.4		ug/L		89	67 - 125
Styrene	50.0	45.9		ug/L		92	70 - 125
1,1,2,2-Tetrachloroethane	50.0	45.9		ug/L		92	68 - 125
Tetrachloroethene	50.0	47.8		ug/L		96	70 - 125
Toluene	50.0	47.5		ug/L		95	70 - 125
trans-1,2-Dichloroethene	50.0	44.0		ug/L		88	70 - 125
trans-1,3-Dichloropropene	50.0	45.2		ug/L		90	70 - 125
1,2,4-Trichlorobenzene	50.0	45.5		ug/L		91	64 - 126
1,1,1-Trichloroethane	50.0	44.8		ug/L		90	70 - 125
1,1,2-Trichloroethane	50.0	46.4		ug/L		93	70 - 125
Trichloroethene	50.0	44.7		ug/L		89	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372273/10
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	53.8		ug/L		108	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.0		ug/L		94	57 - 141
Vinyl chloride	50.0	53.7		ug/L		107	70 - 126
Xylenes, Total	100	93.9		ug/L		94	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*92*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*

Lab Sample ID: 500-123839-4 MS
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<5.0		50.0	46.2		ug/L		92	37 - 141
Benzene	<0.50		50.0	50.2		ug/L		100	70 - 125
Bromodichloromethane	<1.0		50.0	51.7		ug/L		103	70 - 125
Bromoform	<1.0		50.0	48.4		ug/L		97	54 - 128
Bromomethane	<2.0		50.0	47.4		ug/L		95	40 - 150
Carbon disulfide	<2.0		50.0	45.7		ug/L		91	68 - 125
Carbon tetrachloride	<1.0		50.0	47.9		ug/L		96	70 - 125
Chlorobenzene	<1.0		50.0	51.7		ug/L		103	70 - 125
Chloroethane	<1.0		50.0	52.0		ug/L		104	60 - 139
Chloroform	<2.0		50.0	51.6		ug/L		103	70 - 125
Chloromethane	<1.0		50.0	50.6		ug/L		101	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	49.6		ug/L		99	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	52.4		ug/L		105	70 - 125
Cyclohexane	<1.0		50.0	50.6		ug/L		101	56 - 149
Dibromochloromethane	<1.0		50.0	51.7		ug/L		103	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	51.0		ug/L		102	51 - 125
1,2-Dibromoethane	<1.0		50.0	55.3		ug/L		111	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	53.6		ug/L		107	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	51.6		ug/L		103	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	51.6		ug/L		103	70 - 125
Dichlorodifluoromethane	<2.0		50.0	53.9		ug/L		108	51 - 140
1,1-Dichloroethane	<1.0		50.0	50.5		ug/L		101	70 - 125
1,2-Dichloroethane	<1.0		50.0	54.7		ug/L		109	70 - 125
1,1-Dichloroethene	<1.0		50.0	48.3		ug/L		97	70 - 125
1,2-Dichloropropane	<1.0		50.0	52.7		ug/L		105	70 - 125
Ethylbenzene	<0.50		50.0	52.1		ug/L		104	70 - 125
2-Hexanone	<5.0		50.0	50.0		ug/L		100	49 - 139
Isopropylbenzene	<1.0		50.0	50.7		ug/L		101	70 - 125
Methyl acetate	<5.0		250	266		ug/L		106	60 - 148
Methylcyclohexane	<1.0		50.0	49.3		ug/L		99	70 - 127
Methylene Chloride	<5.0		50.0	51.6		ug/L		103	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-123839-4 MS
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	45.1		ug/L		90	52 - 142
methyl isobutyl ketone	<5.0		50.0	51.5		ug/L		103	47 - 140
Methyl tert-butyl ether	<1.0		50.0	54.0		ug/L		108	67 - 125
Styrene	<1.0		50.0	51.9		ug/L		104	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	54.3		ug/L		109	68 - 125
Tetrachloroethene	<1.0		50.0	50.7		ug/L		101	70 - 125
Toluene	<0.50		50.0	51.7		ug/L		103	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	48.6		ug/L		97	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	51.5		ug/L		103	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	50.0		ug/L		100	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	49.1		ug/L		98	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	54.7		ug/L		109	70 - 125
Trichloroethene	<0.50		50.0	49.6		ug/L		99	70 - 125
Trichlorofluoromethane	<1.0		50.0	52.4		ug/L		105	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	50.1		ug/L		100	57 - 141
Vinyl chloride	<0.50		50.0	54.3		ug/L		109	70 - 126
Xylenes, Total	<1.0		100	103		ug/L		103	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*98*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 127*
Toluene-d8 (Surr)	*100*		*75 - 120*

Lab Sample ID: 500-123839-4 MSD
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<5.0		50.0	51.9		ug/L		104	37 - 141	12	20
Benzene	<0.50		50.0	49.6		ug/L		99	70 - 125	1	20
Bromodichloromethane	<1.0		50.0	52.0		ug/L		104	70 - 125	1	20
Bromoform	<1.0		50.0	50.6		ug/L		101	54 - 128	4	20
Bromomethane	<2.0		50.0	49.7		ug/L		99	40 - 150	5	20
Carbon disulfide	<2.0		50.0	45.0		ug/L		90	68 - 125	1	20
Carbon tetrachloride	<1.0		50.0	47.1		ug/L		94	70 - 125	2	20
Chlorobenzene	<1.0		50.0	50.7		ug/L		101	70 - 125	2	20
Chloroethane	<1.0		50.0	52.0		ug/L		104	60 - 139	0	20
Chloroform	<2.0		50.0	51.2		ug/L		102	70 - 125	1	20
Chloromethane	<1.0		50.0	51.9		ug/L		104	60 - 140	2	20
cis-1,2-Dichloroethene	<1.0		50.0	49.5		ug/L		99	70 - 125	0	20
cis-1,3-Dichloropropene	<1.0		50.0	52.6		ug/L		105	70 - 125	0	20
Cyclohexane	<1.0		50.0	49.7		ug/L		99	56 - 149	2	20
Dibromochloromethane	<1.0		50.0	52.3		ug/L		105	66 - 125	1	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	54.5		ug/L		109	51 - 125	7	20
1,2-Dibromoethane	<1.0		50.0	54.1		ug/L		108	70 - 125	2	20
1,2-Dichlorobenzene	<1.0		50.0	52.9		ug/L		106	70 - 125	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-123839-4 MSD
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	50.8		ug/L		102	70 - 125	2	20
1,4-Dichlorobenzene	<1.0		50.0	50.3		ug/L		101	70 - 125	3	20
Dichlorodifluoromethane	<2.0		50.0	53.8		ug/L		108	51 - 140	0	20
1,1-Dichloroethane	<1.0		50.0	50.2		ug/L		100	70 - 125	1	20
1,2-Dichloroethane	<1.0		50.0	54.7		ug/L		109	70 - 125	0	20
1,1-Dichloroethene	<1.0		50.0	47.3		ug/L		95	70 - 125	2	20
1,2-Dichloropropane	<1.0		50.0	52.6		ug/L		105	70 - 125	0	20
Ethylbenzene	<0.50		50.0	51.6		ug/L		103	70 - 125	1	20
2-Hexanone	<5.0		50.0	52.4		ug/L		105	49 - 139	5	20
Isopropylbenzene	<1.0		50.0	49.9		ug/L		100	70 - 125	2	20
Methyl acetate	<5.0		250	268		ug/L		107	60 - 148	1	20
Methylcyclohexane	<1.0		50.0	48.4		ug/L		97	70 - 127	2	20
Methylene Chloride	<5.0		50.0	51.3		ug/L		103	68 - 125	1	20
Methyl Ethyl Ketone	<5.0		50.0	48.8		ug/L		98	52 - 142	8	20
methyl isobutyl ketone	<5.0		50.0	54.6		ug/L		109	47 - 140	6	20
Methyl tert-butyl ether	<1.0		50.0	53.7		ug/L		107	67 - 125	1	20
Styrene	<1.0		50.0	51.5		ug/L		103	70 - 125	1	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	55.3		ug/L		111	68 - 125	2	20
Tetrachloroethene	<1.0		50.0	49.7		ug/L		99	70 - 125	2	20
Toluene	<0.50		50.0	51.4		ug/L		103	70 - 125	1	20
trans-1,2-Dichloroethene	<1.0		50.0	47.9		ug/L		96	70 - 125	1	20
trans-1,3-Dichloropropene	<1.0		50.0	51.8		ug/L		104	70 - 125	1	20
1,2,4-Trichlorobenzene	<1.0		50.0	49.8		ug/L		100	64 - 126	0	20
1,1,1-Trichloroethane	<1.0		50.0	49.0		ug/L		98	70 - 125	0	20
1,1,2-Trichloroethane	<1.0		50.0	55.4		ug/L		111	70 - 125	1	20
Trichloroethene	<0.50		50.0	48.9		ug/L		98	70 - 125	1	20
Trichlorofluoromethane	<1.0		50.0	55.8		ug/L		112	60 - 126	6	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	48.5		ug/L		97	57 - 141	3	20
Vinyl chloride	<0.50		50.0	56.8		ug/L		114	70 - 126	4	20
Xylenes, Total	<1.0		100	102		ug/L		102	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 127*
Toluene-d8 (Surr)	*99*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372103/1-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/15/17 08:59	02/15/17 16:19	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/15/17 08:59	02/15/17 16:19	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/15/17 08:59	02/15/17 16:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372103/1-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	<0.80		0.80	0.27	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/15/17 08:59	02/15/17 16:19	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/15/17 08:59	02/15/17 16:19	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/15/17 08:59	02/15/17 16:19	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/15/17 08:59	02/15/17 16:19	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/15/17 08:59	02/15/17 16:19	1
Carbazole	<4.0		4.0	0.28	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/15/17 08:59	02/15/17 16:19	1
Chrysene	<0.16		0.16	0.055	ug/L		02/15/17 08:59	02/15/17 16:19	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/15/17 08:59	02/15/17 16:19	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/15/17 08:59	02/15/17 16:19	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/15/17 08:59	02/15/17 16:19	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/15/17 08:59	02/15/17 16:19	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/15/17 08:59	02/15/17 16:19	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/15/17 08:59	02/15/17 16:19	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/15/17 08:59	02/15/17 16:19	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/15/17 08:59	02/15/17 16:19	1
Fluorene	<0.80		0.80	0.20	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/15/17 08:59	02/15/17 16:19	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/15/17 08:59	02/15/17 16:19	1
Isophorone	<1.6		1.6	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/15/17 08:59	02/15/17 16:19	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/15/17 08:59	02/15/17 16:19	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/15/17 08:59	02/15/17 16:19	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/15/17 08:59	02/15/17 16:19	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/15/17 08:59	02/15/17 16:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372103/1-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	<16		16	5.9	ug/L		02/15/17 08:59	02/15/17 16:19	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/15/17 08:59	02/15/17 16:19	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
Pentachlorophenol	<16		16	3.2	ug/L		02/15/17 08:59	02/15/17 16:19	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/15/17 08:59	02/15/17 16:19	1
Phenol	<4.0		4.0	0.54	ug/L		02/15/17 08:59	02/15/17 16:19	1
Pyrene	<0.80		0.80	0.34	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzaldehyde	<32	^	32	12	ug/L		02/15/17 08:59	02/15/17 16:19	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/15/17 08:59	02/15/17 16:19	1
Atrazine	<4.0		4.0	0.50	ug/L		02/15/17 08:59	02/15/17 16:19	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/15/17 08:59	02/15/17 16:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*30 - 123*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
Nitrobenzene-d5 (Surr)	*97*		*33 - 139*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
Phenol-d5 (Surr)	*73*		*20 - 100*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
Terphenyl-d14 (Surr)	*101*		*42 - 150*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/15/17 08:59*	*02/15/17 16:19*	*1*

Lab Sample ID: LCS 500-372103/2-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	27.4		ug/L		86	41 - 112
Acenaphthylene	32.0	26.9		ug/L		84	48 - 110
Acetophenone	32.0	26.5		ug/L		83	54 - 116
Anthracene	32.0	27.7		ug/L		87	65 - 118
Benzo[a]anthracene	32.0	30.2		ug/L		94	69 - 121
Benzo[a]pyrene	32.0	32.5		ug/L		102	69 - 130
Benzo[b]fluoranthene	32.0	31.4		ug/L		98	66 - 133
Benzo[g,h,i]perylene	32.0	35.0		ug/L		109	47 - 145
Benzo[k]fluoranthene	32.0	31.2		ug/L		97	64 - 134
Bis(2-chloroethoxy)methane	32.0	26.4		ug/L		83	55 - 115
Bis(2-chloroethyl)ether	32.0	23.8		ug/L		74	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	31.9		ug/L		100	60 - 132
4-Bromophenyl phenyl ether	32.0	27.1		ug/L		85	60 - 124
Butyl benzyl phthalate	32.0	32.7		ug/L		102	63 - 127
Carbazole	32.0	30.8		ug/L		96	71 - 132
4-Chloroaniline	32.0	31.2		ug/L		97	15 - 125
4-Chloro-3-methylphenol	32.0	27.4		ug/L		86	63 - 120
2-Chloronaphthalene	32.0	25.4		ug/L		79	38 - 110
2-Chlorophenol	32.0	25.9		ug/L		81	49 - 110
4-Chlorophenyl phenyl ether	32.0	28.8		ug/L		90	55 - 115

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372103/2-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chrysene	32.0	27.9		ug/L		87	70 - 126
Dibenz(a,h)anthracene	32.0	35.9		ug/L		112	59 - 145
Dibenzofuran	32.0	28.4		ug/L		89	54 - 111
3,3'-Dichlorobenzidine	32.0	33.5		ug/L		105	57 - 145
2,4-Dichlorophenol	32.0	25.2		ug/L		79	53 - 123
Diethyl phthalate	32.0	33.6		ug/L		105	64 - 126
2,4-Dimethylphenol	32.0	25.9		ug/L		81	42 - 115
Dimethyl phthalate	32.0	30.7		ug/L		96	66 - 120
Di-n-butyl phthalate	32.0	30.4		ug/L		95	67 - 125
4,6-Dinitro-2-methylphenol	64.0	57.9		ug/L		90	34 - 152
2,4-Dinitrophenol	64.0	63.1		ug/L		99	20 - 140
2,4-Dinitrotoluene	32.0	31.4		ug/L		98	67 - 131
2,6-Dinitrotoluene	32.0	31.2		ug/L		98	66 - 125
Di-n-octyl phthalate	32.0	32.2		ug/L		101	63 - 133
Fluoranthene	32.0	28.2		ug/L		88	68 - 127
Fluorene	32.0	28.4		ug/L		89	54 - 113
Hexachlorobenzene	32.0	26.4		ug/L		83	63 - 127
Hexachlorobutadiene	32.0	12.5		ug/L		39	20 - 110
Hexachlorocyclopentadiene	32.0	16.5		ug/L		51	10 - 110
Hexachloroethane	32.0	13.2		ug/L		41	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	35.1		ug/L		110	52 - 150
Isophorone	32.0	24.2		ug/L		76	55 - 120
2-Methylnaphthalene	32.0	18.9		ug/L		59	32 - 110
2-Methylphenol	32.0	28.3		ug/L		89	49 - 113
3 & 4 Methylphenol	32.0	26.0		ug/L		81	49 - 114
Naphthalene	32.0	17.8		ug/L		56	32 - 110
2-Nitroaniline	32.0	33.7		ug/L		105	61 - 126
3-Nitroaniline	32.0	29.6		ug/L		93	42 - 134
4-Nitroaniline	32.0	32.6		ug/L		102	40 - 142
Nitrobenzene	32.0	25.7		ug/L		80	49 - 116
2-Nitrophenol	32.0	25.2		ug/L		79	51 - 120
4-Nitrophenol	64.0	53.6		ug/L		84	21 - 110
N-Nitrosodi-n-propylamine	32.0	29.3		ug/L		91	52 - 122
N-Nitrosodiphenylamine	32.0	28.1		ug/L		88	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	25.4		ug/L		79	34 - 110
Pentachlorophenol	64.0	57.2		ug/L		89	29 - 138
Phenanthrene	32.0	27.6		ug/L		86	63 - 121
Phenol	32.0	18.5		ug/L		58	33 - 100
Pyrene	32.0	29.9		ug/L		93	65 - 122
2,4,5-Trichlorophenol	32.0	32.4		ug/L		101	63 - 121
2,4,6-Trichlorophenol	32.0	31.1		ug/L		97	61 - 120
Caprolactam	32.0	14.3		ug/L		45	25 - 100
Atrazine	32.0	23.5		ug/L		73	57 - 128
1,1'-Biphenyl	32.0	26.6		ug/L		83	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*84*		*30 - 123*
2-Fluorophenol (Surr)	*76*		*30 - 110*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372103/2-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*90*		*33 - 139*
Phenol-d5 (Surr)	*69*		*20 - 100*
Terphenyl-d14 (Surr)	*104*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*

Lab Sample ID: LCSD 500-372103/3-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	27.0		ug/L		84	41 - 112	1	20
Acenaphthylene	32.0	27.0		ug/L		84	48 - 110	0	20
Acetophenone	32.0	25.6		ug/L		80	54 - 116	3	20
Anthracene	32.0	26.5		ug/L		83	65 - 118	5	20
Benzo[a]anthracene	32.0	26.7		ug/L		83	69 - 121	12	20
Benzo[a]pyrene	32.0	29.8		ug/L		93	69 - 130	9	20
Benzo[b]fluoranthene	32.0	29.5		ug/L		92	66 - 133	6	20
Benzo[g,h,i]perylene	32.0	32.1		ug/L		100	47 - 145	9	20
Benzo[k]fluoranthene	32.0	27.5		ug/L		86	64 - 134	13	20
Bis(2-chloroethoxy)methane	32.0	25.8		ug/L		80	55 - 115	3	20
Bis(2-chloroethyl)ether	32.0	23.4		ug/L		73	46 - 110	2	20
Bis(2-ethylhexyl) phthalate	32.0	29.3		ug/L		91	60 - 132	8	20
4-Bromophenyl phenyl ether	32.0	25.9		ug/L		81	60 - 124	4	20
Butyl benzyl phthalate	32.0	29.9		ug/L		93	63 - 127	9	20
Carbazole	32.0	30.2		ug/L		94	71 - 132	2	20
4-Chloroaniline	32.0	31.6		ug/L		99	15 - 125	1	20
4-Chloro-3-methylphenol	32.0	23.3		ug/L		73	63 - 120	16	20
2-Chloronaphthalene	32.0	25.9		ug/L		81	38 - 110	2	20
2-Chlorophenol	32.0	13.0	*	ug/L		41	49 - 110	66	20
4-Chlorophenyl phenyl ether	32.0	27.7		ug/L		87	55 - 115	4	20
Chrysene	32.0	26.0		ug/L		81	70 - 126	7	20
Dibenz(a,h)anthracene	32.0	32.9		ug/L		103	59 - 145	9	20
Dibenzofuran	32.0	28.1		ug/L		88	54 - 111	1	20
3,3'-Dichlorobenzidine	32.0	30.1		ug/L		94	57 - 145	11	20
2,4-Dichlorophenol	32.0	12.5	*	ug/L		39	53 - 123	67	20
Diethyl phthalate	32.0	32.3		ug/L		101	64 - 126	4	20
2,4-Dimethylphenol	32.0	24.9		ug/L		78	42 - 115	4	20
Dimethyl phthalate	32.0	29.5		ug/L		92	66 - 120	4	20
Di-n-butyl phthalate	32.0	28.7		ug/L		90	67 - 125	6	20
4,6-Dinitro-2-methylphenol	64.0	20.2	*	ug/L		32	34 - 152	97	20
2,4-Dinitrophenol	64.0	18.6	*	ug/L		29	20 - 140	109	20
2,4-Dinitrotoluene	32.0	30.1		ug/L		94	67 - 131	4	20
2,6-Dinitrotoluene	32.0	30.1		ug/L		94	66 - 125	4	20
Di-n-octyl phthalate	32.0	30.3		ug/L		95	63 - 133	6	20
Fluoranthene	32.0	26.7		ug/L		83	68 - 127	6	20
Fluorene	32.0	27.3		ug/L		85	54 - 113	4	20
Hexachlorobenzene	32.0	24.9		ug/L		78	63 - 127	6	20
Hexachlorobutadiene	32.0	15.6	*	ug/L		49	20 - 110	22	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372103/3-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorocyclopentadiene	32.0	17.9		ug/L		56	10 - 110	9	20
Hexachloroethane	32.0	16.5	*	ug/L		51	20 - 110	22	20
Indeno[1,2,3-cd]pyrene	32.0	32.3		ug/L		101	52 - 150	8	20
Isophorone	32.0	23.3		ug/L		73	55 - 120	4	20
2-Methylnaphthalene	32.0	20.3		ug/L		63	32 - 110	7	20
2-Methylphenol	32.0	25.1		ug/L		78	49 - 113	12	20
3 & 4 Methylphenol	32.0	21.5		ug/L		67	49 - 114	19	20
Naphthalene	32.0	19.6		ug/L		61	32 - 110	9	20
2-Nitroaniline	32.0	32.5		ug/L		102	61 - 126	4	20
3-Nitroaniline	32.0	36.9	*	ug/L		115	42 - 134	22	20
4-Nitroaniline	32.0	34.9		ug/L		109	40 - 142	7	20
Nitrobenzene	32.0	25.1		ug/L		78	49 - 116	2	20
2-Nitrophenol	32.0	11.0	*	ug/L		34	51 - 120	78	20
4-Nitrophenol	64.0	17.1	*	ug/L		27	21 - 110	103	20
N-Nitrosodi-n-propylamine	32.0	28.3		ug/L		89	52 - 122	3	20
N-Nitrosodiphenylamine	32.0	27.4		ug/L		86	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	25.5		ug/L		80	34 - 110	1	20
Pentachlorophenol	64.0	15.2	J *	ug/L		24	29 - 138	116	20
Phenanthrene	32.0	26.3		ug/L		82	63 - 121	5	20
Phenol	32.0	12.4	*	ug/L		39	33 - 100	39	20
Pyrene	32.0	27.6		ug/L		86	65 - 122	8	20
2,4,5-Trichlorophenol	32.0	12.3	*	ug/L		38	63 - 121	90	20
2,4,6-Trichlorophenol	32.0	11.5	*	ug/L		36	61 - 120	92	20
Caprolactam	32.0	13.6		ug/L		43	25 - 100	5	20
Atrazine	32.0	22.8		ug/L		71	57 - 128	3	20
1,1'-Biphenyl	32.0	27.1		ug/L		85	42 - 110	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*80*		*30 - 123*
2-Fluorophenol (Surr)	*30*		*30 - 110*
Nitrobenzene-d5 (Surr)	*88*		*33 - 139*
Phenol-d5 (Surr)	*40*		*20 - 100*
Terphenyl-d14 (Surr)	*95*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*44*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-372085/1-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/15/17 07:39	02/21/17 11:16	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/15/17 07:39	02/21/17 11:16	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/15/17 07:39	02/21/17 11:16	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/15/17 07:39	02/21/17 11:16	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/15/17 07:39	02/21/17 11:16	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/15/17 07:39	02/21/17 11:16	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-372085/1-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/15/17 07:39	02/21/17 11:16	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/15/17 07:39	02/21/17 11:16	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endrin	<0.040		0.040	0.014	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/15/17 07:39	02/21/17 11:16	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/15/17 07:39	02/21/17 11:16	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/15/17 07:39	02/21/17 11:16	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/15/17 07:39	02/21/17 11:16	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/15/17 07:39	02/21/17 11:16	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/15/17 07:39	02/21/17 11:16	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/21/17 11:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*96*		*30 - 143*	*02/15/17 07:39*	*02/21/17 11:16*	*1*
Tetrachloro-m-xylene	*40*		*30 - 120*	*02/15/17 07:39*	*02/21/17 11:16*	*1*

Lab Sample ID: LCS 500-372085/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372085

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.219		ug/L		68	40 - 130
alpha-BHC	0.320	0.293		ug/L		92	70 - 130
alpha-Chlordane	0.320	0.298		ug/L		93	70 - 130
beta-BHC	0.320	0.335		ug/L		105	70 - 130
4,4'-DDD	0.320	0.346		ug/L		108	70 - 130
4,4'-DDE	0.320	0.279		ug/L		87	56 - 130
4,4'-DDT	0.320	0.362		ug/L		113	50 - 137
delta-BHC	0.320	0.312		ug/L		98	70 - 130
Dieldrin	0.320	0.328		ug/L		102	70 - 130
Endosulfan I	0.320	0.167		ug/L		52	40 - 130
Endosulfan II	0.320	0.201		ug/L		63	49 - 130
Endosulfan sulfate	0.320	0.362		ug/L		113	70 - 130
Endrin	0.320	0.353		ug/L		110	69 - 130
Endrin aldehyde	0.320	0.320		ug/L		100	63 - 130
Endrin ketone	0.320	0.378		ug/L		118	54 - 141
gamma-BHC (Lindane)	0.320	0.315		ug/L		98	70 - 130
gamma-Chlordane	0.320	0.299		ug/L		93	63 - 130
Heptachlor	0.320	0.279		ug/L		87	40 - 130
Heptachlor epoxide	0.320	0.351		ug/L		110	70 - 130
Methoxychlor	0.320	0.413		ug/L		129	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-372085/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372085

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*105*		*30 - 143*
Tetrachloro-m-xylene	*51*		*30 - 120*

Lab Sample ID: LCSD 500-372085/3-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372085

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.197		ug/L		62	40 - 130	10	20
alpha-BHC	0.320	0.287		ug/L		90	70 - 130	2	20
alpha-Chlordane	0.320	0.288		ug/L		90	70 - 130	3	20
beta-BHC	0.320	0.295		ug/L		92	70 - 130	13	20
4,4'-DDD	0.320	0.332		ug/L		104	70 - 130	4	20
4,4'-DDE	0.320	0.281		ug/L		88	56 - 130	1	20
4,4'-DDT	0.320	0.351		ug/L		110	50 - 137	3	20
delta-BHC	0.320	0.314		ug/L		98	70 - 130	0	20
Dieldrin	0.320	0.327		ug/L		102	70 - 130	0	20
Endosulfan I	0.320	0.153		ug/L		48	40 - 130	9	20
Endosulfan II	0.320	0.203		ug/L		64	49 - 130	1	20
Endosulfan sulfate	0.320	0.356		ug/L		111	70 - 130	1	20
Endrin	0.320	0.345		ug/L		108	69 - 130	2	20
Endrin aldehyde	0.320	0.323		ug/L		101	63 - 130	1	20
Endrin ketone	0.320	0.373		ug/L		116	54 - 141	1	20
gamma-BHC (Lindane)	0.320	0.308		ug/L		96	70 - 130	2	20
gamma-Chlordane	0.320	0.300		ug/L		94	63 - 130	0	20
Heptachlor	0.320	0.260		ug/L		81	40 - 130	7	20
Heptachlor epoxide	0.320	0.351		ug/L		110	70 - 130	0	20
Methoxychlor	0.320	0.388		ug/L		121	47 - 153	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*111*		*30 - 143*
Tetrachloro-m-xylene	*43*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-372085/1-A
Matrix: Water
Analysis Batch: 372289

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/15/17 07:39	02/16/17 08:33	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-372085/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372289 — **Prep Batch: 372085**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*39*		*30 - 127*	*02/15/17 07:39*	*02/16/17 08:33*	*1*
DCB Decachlorobiphenyl	*83*		*30 - 150*	*02/15/17 07:39*	*02/16/17 08:33*	*1*

Lab Sample ID: LCS 500-372085/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372289 — **Prep Batch: 372085**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.32		ug/L		83	58 - 121
PCB-1260	4.00	3.09		ug/L		77	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*43*		*30 - 127*
DCB Decachlorobiphenyl	*100*		*30 - 150*

Lab Sample ID: LCSD 500-372085/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372289 — **Prep Batch: 372085**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.03		ug/L		76	58 - 121	9	20
PCB-1260	4.00	2.97		ug/L		74	62 - 137	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*43*		*30 - 127*
DCB Decachlorobiphenyl	*96*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-372096/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:40	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:40	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:40	1
Barium	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:40	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:40	1
Calcium	<0.20		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:40	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:40	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:40	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:40	1
Iron	<0.20		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:40	1
Magnesium	<0.10		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:40	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-372096/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:40	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:40	1
Potassium	<0.50		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:40	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:40	1
Sodium	<1.0		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:40	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:40	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:40	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:40	1

Lab Sample ID: LCS 500-372096/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.03		mg/L		101	80 - 120
Antimony	0.500	0.500		mg/L		100	80 - 120
Arsenic	0.100	0.0982		mg/L		98	80 - 120
Barium	2.00	2.02		mg/L		101	80 - 120
Beryllium	0.0500	0.0488		mg/L		98	80 - 120
Cadmium	0.0500	0.0492		mg/L		98	80 - 120
Calcium	10.0	9.90		mg/L		99	80 - 120
Chromium	0.200	0.200		mg/L		100	80 - 120
Cobalt	0.500	0.500		mg/L		100	80 - 120
Copper	0.250	0.251		mg/L		100	80 - 120
Iron	1.00	1.11		mg/L		111	80 - 120
Lead	0.100	0.0955		mg/L		96	80 - 120
Magnesium	10.0	9.46		mg/L		95	80 - 120
Manganese	0.500	0.491		mg/L		98	80 - 120
Nickel	0.500	0.499		mg/L		100	80 - 120
Potassium	10.0	9.91		mg/L		99	80 - 120
Selenium	0.100	0.0940		mg/L		94	80 - 120
Silver	0.0500	0.0480		mg/L		96	80 - 120
Sodium	10.0	10.0		mg/L		100	80 - 120
Thallium	0.100	0.0975		mg/L		98	80 - 120
Vanadium	0.500	0.507		mg/L		101	80 - 120
Zinc	0.500	0.485		mg/L		97	80 - 120

Lab Sample ID: 500-123839-4 MS — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	<0.20		2.00	2.13		mg/L		106	75 - 125
Antimony	<0.020		0.500	0.527		mg/L		105	75 - 125
Arsenic	<0.010		0.100	0.105		mg/L		105	75 - 125
Barium	0.65		2.00	2.72		mg/L		104	75 - 125
Beryllium	<0.0040		0.0500	0.0506		mg/L		101	75 - 125
Cadmium	<0.0020		0.0500	0.0521		mg/L		104	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123839-4 MS — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	120		10.0	134	4	mg/L		132	75 - 125
Chromium	<0.010		0.200	0.197		mg/L		99	75 - 125
Cobalt	<0.0050		0.500	0.517		mg/L		103	75 - 125
Copper	<0.010		0.250	0.264		mg/L		106	75 - 125
Iron	11		1.00	12.2	4	mg/L		138	75 - 125
Lead	<0.0050		0.100	0.0938		mg/L		94	75 - 125
Magnesium	88		10.0	101	4	mg/L		130	75 - 125
Manganese	0.18		0.500	0.676		mg/L		99	75 - 125
Nickel	<0.010		0.500	0.515		mg/L		103	75 - 125
Potassium	35		10.0	46.7		mg/L		116	75 - 125
Selenium	<0.010		0.100	0.0982		mg/L		98	75 - 125
Silver	<0.0050		0.0500	0.0505		mg/L		101	75 - 125
Sodium	240		10.0	255	4	mg/L		160	75 - 125
Thallium	<0.010		0.100	0.0945		mg/L		94	75 - 125
Vanadium	<0.0050		0.500	0.513		mg/L		103	75 - 125
Zinc	<0.020		0.500	0.510		mg/L		102	75 - 125

Lab Sample ID: 500-123839-4 MSD — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	<0.20		2.00	2.11		mg/L		106	75 - 125	1	20
Antimony	<0.020		0.500	0.527		mg/L		105	75 - 125	0	20
Arsenic	<0.010		0.100	0.105		mg/L		105	75 - 125	1	20
Barium	0.65		2.00	2.67		mg/L		101	75 - 125	2	20
Beryllium	<0.0040		0.0500	0.0505		mg/L		101	75 - 125	0	20
Cadmium	<0.0020		0.0500	0.0522		mg/L		104	75 - 125	0	20
Calcium	120		10.0	128	4	mg/L		70	75 - 125	5	20
Chromium	<0.010		0.200	0.194		mg/L		97	75 - 125	1	20
Cobalt	<0.0050		0.500	0.522		mg/L		104	75 - 125	1	20
Copper	<0.010		0.250	0.262		mg/L		105	75 - 125	1	20
Iron	11		1.00	11.7	4	mg/L		83	75 - 125	5	20
Lead	<0.0050		0.100	0.0960		mg/L		96	75 - 125	2	20
Magnesium	88		10.0	96.8	4	mg/L		84	75 - 125	5	20
Manganese	0.18		0.500	0.660		mg/L		95	75 - 125	2	20
Nickel	<0.010		0.500	0.521		mg/L		104	75 - 125	1	20
Potassium	35		10.0	45.0		mg/L		98	75 - 125	4	20
Selenium	<0.010		0.100	0.0999		mg/L		100	75 - 125	2	20
Silver	<0.0050		0.0500	0.0504		mg/L		101	75 - 125	0	20
Sodium	240		10.0	244	4	mg/L		50	75 - 125	4	20
Thallium	<0.010		0.100	0.0961		mg/L		96	75 - 125	2	20
Vanadium	<0.0050		0.500	0.509		mg/L		102	75 - 125	1	20
Zinc	<0.020		0.500	0.513		mg/L		103	75 - 125	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123839-4 DU — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Aluminum	<0.20			<0.20		mg/L				NC	20
Antimony	<0.020			<0.020		mg/L				NC	20
Arsenic	<0.010			<0.010		mg/L				NC	20
Barium	0.65			0.656		mg/L				1	20
Beryllium	<0.0040			<0.0040		mg/L				NC	20
Cadmium	<0.0020			0.00112	J	mg/L				NC	20
Calcium	120			121		mg/L				0.6	20
Chromium	<0.010			<0.010		mg/L				NC	20
Cobalt	<0.0050			<0.0050		mg/L				NC	20
Copper	<0.010			<0.010		mg/L				NC	20
Iron	11			10.9		mg/L				0.6	20
Lead	<0.0050			<0.0050		mg/L				NC	20
Magnesium	88			89.1		mg/L				0.8	20
Manganese	0.18			0.185		mg/L				0.7	20
Nickel	<0.010			<0.010		mg/L				NC	20
Potassium	35			35.5		mg/L				1	20
Selenium	<0.010			<0.010		mg/L				NC	20
Silver	<0.0050			<0.0050		mg/L				NC	20
Sodium	240			242		mg/L				1	20
Thallium	<0.010			<0.010		mg/L				NC	20
Vanadium	<0.0050			<0.0050		mg/L				NC	20
Zinc	<0.020			<0.020		mg/L				NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-372119/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372337 — **Prep Batch: 372119**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:27	1

Lab Sample ID: LCS 500-372119/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372337 — **Prep Batch: 372119**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00200	0.00216		mg/L		108	80 - 120		

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-372854/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372854

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:18	1

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCS 500-372854/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.91	6.75		mg/L		98	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-372084/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.18	J	5.0	1.5	mg/L			02/15/17 06:50	1

Lab Sample ID: LCS 500-372084/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.1		mg/L		96	80 - 120

Lab Sample ID: 500-123839-2 MS — **Client Sample ID: MW-09-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10	B	20.0	29.5		mg/L		98	75 - 125

Lab Sample ID: 500-123839-2 MSD — **Client Sample ID: MW-09-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10	B	20.0	30.0		mg/L		100	75 - 125	2	20

Lab Sample ID: 500-123839-3 MS — **Client Sample ID: MW-08-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.4	J B	20.0	21.6		mg/L		96	75 - 125

Lab Sample ID: 500-123839-3 MSD — **Client Sample ID: MW-08-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2.4	J B	20.0	21.6		mg/L		96	75 - 125	0	20

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: MB 500-372717/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.06	J	5.0	1.5	mg/L			02/20/17 09:06	1

Lab Sample ID: LCS 500-372717/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.2		mg/L		101	80 - 120

Lab Sample ID: 500-123839-4 MS — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.7	J B	20.0	19.0		mg/L		86	75 - 125

Lab Sample ID: 500-123839-4 MSD — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1.7	J B	20.0	21.5		mg/L		99	75 - 125	12	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-372593/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			02/16/17 18:31	1

Lab Sample ID: LCS 500-372593/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.5		mg/L		105	80 - 120
TOC Result 1	10.0	10.4		mg/L		104	80 - 120
TOC Result 2	10.0	10.6		mg/L		106	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-372140/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372140

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			02/15/17 11:10	1

Lab Sample ID: LCS 500-372140/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372140

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	185		mg/L		93	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-372038/9-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		02/14/17 21:30	02/15/17 00:05	1

Lab Sample ID: LCS 500-372038/10-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.36		mg/L		94	80 - 120

Lab Sample ID: 500-123839-1 MS — **Client Sample ID: MW-10-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.7		2.50	4.15		mg/L		98	75 - 125

Lab Sample ID: 500-123839-1 MSD — **Client Sample ID: MW-10-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.7		2.50	4.11		mg/L		97	75 - 125	1	20

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-372329/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372329

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:15	1

Method: SM 4500 NO2 B - Nitrogen, Nitrite (Continued)

Lab Sample ID: LCS 500-372329/4
Matrix: Water
Analysis Batch: 372329

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.103		mg/L		103	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-372664/4
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:08	1

Lab Sample ID: LCS 500-372664/5
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.971		mg/L		97	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 19:33	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 17:13	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 12:13	PJG	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 09:50	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 11:50	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 11:47	PJ1	TAL CHI
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:48	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:43	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:23		
					(End)	02/21/17 05:26		
Total/NA	Analysis	9038		20	372084		CLB	TAL CHI
					(Start)	02/15/17 06:52		
					(End)	02/15/17 06:53		
Total/NA	Analysis	9060A		1	372593	02/16/17 22:11	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:22		
					(End)	02/15/17 11:24		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	372067	02/15/17 00:16	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:18		
					(End)	02/15/17 14:19		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:33	HMW	TAL CHI

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 20:00	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 17:40	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 12:33	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2
Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 10:06	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 12:04	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 12:00	PJ1	TAL CHI
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:50	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:49	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:26		
					(End)	02/21/17 05:28		
Total/NA	Analysis	9038		1	372084		CLB	TAL CHI
					(Start)	02/15/17 06:53		
					(End)	02/15/17 06:54		
Total/NA	Analysis	9060A		1	372593	02/16/17 22:28	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:24		
					(End)	02/15/17 11:26		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	372067	02/15/17 01:01	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:19		
					(End)	02/15/17 14:19		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:36	HMW	TAL CHI

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3
Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 20:27	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 18:07	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 12:52	PJG	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 10:21	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 12:16	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 12:09	PJ1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:53	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:52	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:28		
					(End)	02/21/17 05:31		
Total/NA	Analysis	9038		1	372084		CLB	TAL CHI
					(Start)	02/15/17 07:02		
					(End)	02/15/17 07:03		
Total/NA	Analysis	9060A		1	372593	02/16/17 22:44	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:26		
					(End)	02/15/17 11:27		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372067	02/15/17 01:04	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:20		
					(End)	02/15/17 14:20		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:38	HMW	TAL CHI

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 20:54	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 18:34	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 13:11	PJG	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 10:36	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 12:24	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 12:20	PJ1	TAL CHI
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:56	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:55	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:31		
					(End)	02/21/17 05:34		
Total/NA	Analysis	9038		1	372717		CLB	TAL CHI
					(Start)	02/20/17 09:22		
					(End)	02/20/17 09:23		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	372593	02/16/17 23:01	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:27		
					(End)	02/15/17 11:29		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372067	02/15/17 01:07	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:20		
					(End)	02/15/17 14:21		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:40	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-123839

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 4.8, 0.5

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0002.0005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 500-123839 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved Metals (3)	Ammonia, NO_3, NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOC, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-10-GW-02142017	2/14	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved
2		MW-09-GW-02142017	2/14	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	metals
3		MW-08-GW-02142017	2/14	1130	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		Dup-2-02142017	2/14	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-14-2017	1600	[signature]	TA	2/14/17	1600
[signature]	TA	2/14/17	1648	[signature]	TACHI	02/14/17	1640

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123839-1

Login Number: 123839
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5, 4.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123839-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/28/2017 10:26:18 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-2

Job ID: 500-123839-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123839-2

Comments
No additional comments.

Receipt
The samples were received on 2/14/2017 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 4.8º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

February 27, 2017

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-123839-2**

Pace Workorder: 21740

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, February 16, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 02/27/2017
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages ____

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 21740 500-123839-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
217400001	MW-10-GW-02142017	Water	2/14/2017 08:00	2/16/2017 14:15
217400002	MW-09-GW-02142017	Water	2/14/2017 09:40	2/16/2017 14:15
217400003	MW-08-GW-02142017	Water	2/14/2017 11:30	2/16/2017 14:15
217400004	DUP-2-02142017	Water	2/14/2017 00:00	2/16/2017 14:15

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ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400001** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-10-GW-02142017** Date Collected: 2/14/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**32**	ug/l	0.50	0.027	1	2/24/2017 12:53	MM	n
Carbon Dioxide	**46**	mg/l	5.0	0.24	1	2/24/2017 12:53	MM	n
Oxygen	**3.8**	mg/l	0.50	0.13	1	2/24/2017 12:53	MM	n
Nitrogen	**24**	mg/l	2.0	0.24	1	2/24/2017 12:53	MM	n

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ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400002** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-09-GW-02142017** Date Collected: 2/14/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	2/24/2017 13:08	MM	n
Carbon Dioxide	**450**	mg/l	5.0	0.24	1	2/24/2017 13:08	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 13:08	MM	n
Nitrogen	**9.4**	mg/l	2.0	0.24	1	2/24/2017 13:08	MM	n

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ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400003** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-08-GW-02142017** Date Collected: 2/14/2017 11:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:22	MM	n
Carbon Dioxide	**220**	mg/l	5.0	0.24	1	2/24/2017 13:22	MM	n
Oxygen	**2.5**	mg/l	0.50	0.13	1	2/24/2017 13:22	MM	n
Nitrogen	**8.8**	mg/l	2.0	0.24	1	2/24/2017 13:22	MM	n

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ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400004** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **DUP-2-02142017** Date Collected: 2/14/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:35	MM	n
Carbon Dioxide	**230**	mg/l	5.0	0.24	1	2/24/2017 13:35	MM	n
Oxygen	**2.9**	mg/l	0.50	0.13	1	2/24/2017 13:35	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 13:35	MM	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 21740 500-123839-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 21740 500-123839-2

QC Batch: DISG/5933 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 217400001, 217400002, 217400003, 217400004

METHOD BLANK: 47179

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 47180

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 47181 47183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	780	760	104	101	80-120	2.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 47182 47184

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	112	115	80-120	2.6	20	n
Oxygen	mg/l	11	11	11	95	93	80-120	2.1	20	n
Nitrogen	mg/l	140	120	120	85	84	80-120	1.2	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 21740 500-123839-2

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 21740 500-123839-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
217400001	MW-10-GW-02142017			AM20GAX	DISG/5933
217400002	MW-09-GW-02142017			AM20GAX	DISG/5933
217400003	MW-08-GW-02142017			AM20GAX	DISG/5933
217400004	DUP-2-02142017			AM20GAX	DISG/5933

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123839
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.8, 0.5

Client: Arcadis
Client Project #: CI001805.0002.0006
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Theresa Hargraves

Preservative Key: 500-123839 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved Metals (3)	Ammonia, NO3/NO2 (6)	Sulfate (5)	TOC (2)	TSS, SO4, NO2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-10-GW-02142017	2/14	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved
2		MW-09-GW-02142017	2/14	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	metals
3		MW-08-GW-02142017	2/14	1130	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		Dup-2-02142017	2/14	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-14-2017	1600	[signature]	TA	2/14/17	1600
[signature]	TA	2/14/17	1648	[signature]	TA CHI	02/14/17	1640

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123839-2

Login Number: 123839
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5, 4.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123929-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/28/2017 4:34:29 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-123929-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123929-1

Comments
No additional comments.

Receipt
The samples were received on 2/15/2017 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.8º C and 4.1º C.

Receipt Exceptions

'MW-03-GW-02152017' was on COC. but not sent in with samples. Contacted client and they let us know that they were unable to finish the set so will send in tomorrow with other samples

GC/MS VOA
Method(s) 8260B: The following sample were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however was outside the required criteria when verified by the laboratory: MW-07-GW-02142017 (500-123929-1) and MW-06-GW-02152017 (500-123929-2). The sample was analyzed within 7 days per EPA recommendation therefore no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: CCVIS 500-372962/2 was outside the method criteria for the following analytes: Carbazole (high) and Hexachlorocyclopentadiene (low). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.(CCVIS 500-372962/2)

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCSD associated with batch 500-372692 had 1 analyte outside control limits: Carbazole. The LCS was within control limits for all analytes. These results have been reported and qualified.(LCS 500-372692/2-A) and (LCSD 500-372692/3-A)

Method(s) 8270D: The following samples contained one base surrogate outside acceptance limits: MW-06-GW-02152017 (500-123929-2). The laboratory's SOP allows one acid and one base surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

Method(s) 8270D: Internal standard (ISTD6) responses were outside of acceptance limits for the following samples: MW-07-GW-02142017 (500-123929-1) and MW-06-GW-02152017 (500-123929-2). The samples show evidence of matrix interference. The samples were further diluted for 2 analytes. In these dilutions, the ISTD's were within control limits. The samples that had detects for analytes associated with ISTD6 would be considered estimated.

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-369784/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following sample: MW-07-GW-02142017 (500-123929-1).

Method(s) 8081B: Surrogate DCB Decachlorobiphenyl and Tetrachloro-m-xylene recovery for the following sample was outside control limits: MW-07-GW-02142017 (500-123929-1). Re-extraction (past hold time) and re-analysis was performed with DCB still outside control

Job ID: 500-123929-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

limits. Both sets of data have been reported.

Method(s) 8081B: Surrogate Tetrachloro-m-xylene or DCB Decachlorobiphenyl recovery for the following samples was outside control limits: MW-06-GW-02152017 (500-123929-2) and MW-04-GW-02152017 (500-123929-4). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-07-GW-02142017 (500-123929-1), MW-06-GW-02152017 (500-123929-2), MW-05-GW-02152017 (500-123929-3) and MW-04-GW-02152017 (500-123929-4). The reagent lot number used was: 153166.

Method(s) 8082A: Surrogate Tetrachloro-m-xylene and DCB Decachlorobiphenyl recovery for the following sample was outside control limits: MW-07-GW-02142017 (500-123929-1). Re-extraction (past hold time) and re-analysis was performed with concurring results. The original analysis has been reported.

Method(s) 8082A: The %RPD between the primary and confirmation column exceeded 40% for PCB-1254 for the following sample: MW-07-GW-02142017 (500-123929-1). The lower value has been reported and qualified in accordance with the laboratory's SOP.

Method(s) 8082A: Surrogate DCB Decachlorobiphenyl recovery for the following sample was outside control limits: MW-06-GW-02152017 (500-123929-2). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8082A: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-07-GW-02142017 (500-123929-1), MW-06-GW-02152017 (500-123929-2), MW-05-GW-02152017 (500-123929-3) and MW-04-GW-02152017 (500-123929-4). The reagent lot number used was: 153166.

Method(s) 8082A: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-372295 recovered outside control limits for the following analytes: PCB-1260 on the primary column.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 500-373439 recovered above the upper control limit for surrogate DCB Decachlorobiphenyl on the ZB-Clp-Pest 2 column. No further action was taken. The following samples are impacted: MW-07-GW-02142017 (500-123929-1), MW-06-GW-02152017 (500-123929-2), MW-05-GW-02152017 (500-123929-3) and MW-04-GW-02152017 (500-123929-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: Dissolved metals results for the following sample is greater than the corresponding total metals results: MW-04-GW-02152017 (500-123929-4). The dissolved metals and total metals results have been confirmed by the analysis of the undigested sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) 9038: Please note that the following Sulfate samples have been diluted and color blank correction applied due to the matrix of the samples and have been reported with elevated reporting limits: MW-07-GW-02142017 (500-123929-1) and MW-06-GW-02152017 (500-123929-2).

Method(s) 9060A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for TOC batch 372805 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017 — Lab Sample ID: 500-123929-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	27		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.86	J	1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.1		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	0.55	J	1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	5.9		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	14		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	11		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.98	J	1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	8.1		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	45		5.0	2.2	ug/L	1		8260B	Total/NA
Vinyl chloride	8.4		0.50	0.20	ug/L	1		8260B	Total/NA
Ethylbenzene - DL	180		5.0	1.8	ug/L	10		8260B	Total/NA
Toluene - DL	380		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	910		10	2.2	ug/L	10		8260B	Total/NA
Acenaphthene	4.3		0.73	0.22	ug/L	1		8270D	Total/NA
Anthracene	2.6		0.73	0.24	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	1.5		0.15	0.041	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	1.3	*	0.15	0.059	ug/L	1		8270D	Total/NA
Benzo[k]fluoranthene	0.56	*	0.15	0.046	ug/L	1		8270D	Total/NA
4-Chloro-3-methylphenol	41		7.3	1.7	ug/L	1		8270D	Total/NA
Chrysene	1.6		0.15	0.049	ug/L	1		8270D	Total/NA
Fluorene	3.1		0.73	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	5.0		1.5	0.047	ug/L	1		8270D	Total/NA
2-Methylphenol	49		1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	9.5		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	33		0.73	0.22	ug/L	1		8270D	Total/NA
Phenanthrene	10		0.73	0.22	ug/L	1		8270D	Total/NA
Pyrene	10		0.73	0.31	ug/L	1		8270D	Total/NA
Benzaldehyde	40	^	29	11	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	2.2	J	3.6	0.26	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate - DL	170		73	12	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol - DL	340		73	13	ug/L	10		8270D	Total/NA
PCB-1242	2.3		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1242	3.1		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1254	1.6		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1254	2.7		0.37	0.18	ug/L	1		8082A	Total/NA
Aluminum	1.3		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.013	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.039		0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.51		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0052		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	9.6		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.36		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.039		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.057		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	3.9		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.50		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	25		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.015		0.010	0.0034	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017 (Continued) — Lab Sample ID: 500-123929-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.14		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	570		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0093	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	3500		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.055		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.67		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.77		0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.0085	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.032		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.46		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0027		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	9.1		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.33		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.038		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.026		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	3.4		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.18		0.0050	0.0025	mg/L	1		6010C	Dissolved
Magnesium	25		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.013		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.13		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	570		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0070	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	3600		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.048		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.32		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00086		0.00020	0.00011	mg/L	1		7470A	Total/NA
Mercury	0.00036		0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	8.0		1.0	0.18	mg/L	1		9034	Total/NA
Total Organic Carbon - Duplicates	540	B	40	11	mg/L	40		9060A	Total/NA
Nitrogen, Nitrate	0.059	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	13		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	740		40	20	mg/L	10		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.059	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: MW-06-GW-02152017 — Lab Sample ID: 500-123929-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	43		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.6		0.50	0.15	ug/L	1		8260B	Total/NA
Carbon disulfide	1.6	J	2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	0.62	J	1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	3.6		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.3		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	13		1.0	0.36	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	0.45	J	1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	55		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.76	J	1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	14		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	25		5.0	2.2	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017 (Continued) — Lab Sample ID: 500-123929-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	130		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	3.4		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	230		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.50	J	0.73	0.23	ug/L	1		8270D	Total/NA
Anthracene	0.30	J	0.73	0.24	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	41		7.3	1.3	ug/L	1		8270D	Total/NA
4-Chloro-3-methylphenol	12		7.3	1.7	ug/L	1		8270D	Total/NA
2-Chloronaphthalene	3.1		1.5	0.17	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	1.4	J	3.7	0.53	ug/L	1		8270D	Total/NA
Fluoranthene	0.43	J	0.73	0.33	ug/L	1		8270D	Total/NA
Fluorene	0.39	J	0.73	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.0		1.5	0.048	ug/L	1		8270D	Total/NA
2-Methylphenol	18		1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	5.0		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	23		0.73	0.23	ug/L	1		8270D	Total/NA
Phenanthrene	1.0		0.73	0.22	ug/L	1		8270D	Total/NA
Pyrene	0.59	J	0.73	0.31	ug/L	1		8270D	Total/NA
Benzaldehyde	20	J ^	29	11	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	1.5	J	3.7	0.27	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol - DL	93		37	6.6	ug/L	5		8270D	Total/NA
PCB-1242	2.1		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1242	2.6		0.37	0.18	ug/L	1		8082A	Total/NA
Aluminum	0.29		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.021		0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.26		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	15		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.11		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.025		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0096	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	0.98		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.11		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	31		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.0079	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.10		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	520		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0081	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	3300		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.032		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.11		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.14	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.020		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.26		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	15		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.10		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.025		0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	0.59		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0080		0.0050	0.0025	mg/L	1		6010C	Dissolved
Magnesium	31		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.0071	J	0.010	0.0034	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017 (Continued) — Lab Sample ID: 500-123929-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.10		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	520		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	3500		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.029		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.023		0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfide	7.2		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	21	B	10	2.9	mg/L	2		9038	Total/NA
Total Organic Carbon - Duplicates	310	B	20	5.3	mg/L	20		9060A	Total/NA
Total Suspended Solids	4.0	J	5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	530		40	20	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-05-GW-02152017 — Lab Sample ID: 500-123929-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.5		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	0.24	J	0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	2.9		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	2.2		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.4		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	36		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.55	J	1.0	0.32	ug/L	1		8260B	Total/NA
Xylenes, Total	0.90	J	1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.32	J	0.75	0.23	ug/L	1		8270D	Total/NA
Fluorene	0.20	J	0.75	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	0.40	J	1.5	0.049	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.98		0.75	0.28	ug/L	1		8270D	Total/NA
Barium	0.86		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	76		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	20		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	90		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.053		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0046	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	43		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	150		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.0093	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.83		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	73		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	19		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	88		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.051		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	42		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	150		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	2.9	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	18	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	56		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	50		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-04-GW-02152017 — Lab Sample ID: 500-123929-4

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017 (Continued) — Lab Sample ID: 500-123929-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	31		5.0	1.7	ug/L	1		8260B	Total/NA
Carbon disulfide	2.2		2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	2.0		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	0.65	J	2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	11		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.9		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.56	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	18		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	58		1.0	0.39	ug/L	1		8260B	Total/NA
1,2-Dichloropropane	1.7		1.0	0.43	ug/L	1		8260B	Total/NA
Ethylbenzene	13		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	0.92	J	1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	6.9		5.0	1.6	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	9.7		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	20		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	28		0.50	0.15	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.1		1.0	0.35	ug/L	1		8260B	Total/NA
Trichloroethene	2.4		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	3.8		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	17		1.0	0.22	ug/L	1		8260B	Total/NA
Benzene - DL	530		5.0	1.5	ug/L	10		8260B	Total/NA
Acetophenone	3.0	J	3.7	0.49	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	31		7.3	1.3	ug/L	1		8270D	Total/NA
2-Methylphenol	7.7		1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	11		1.5	0.33	ug/L	1		8270D	Total/NA
Phenol	13		3.7	0.49	ug/L	1		8270D	Total/NA
Aluminum	0.094	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0073	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.033		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	160		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	2.5		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	43		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	1.2		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0066	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	14		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	380		1.0	0.43	mg/L	1		6010C	Total/NA
Aluminum	0.064	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0094	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.036		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	180	V	0.20	0.059	mg/L	1		6010C	Dissolved
Iron	2.7		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	48	V	0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	1.3	V	0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0056	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	16	V	0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	420	V	1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	1.0		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	530	B	100	29	mg/L	20		9038	Total/NA
Total Organic Carbon - Duplicates	15	B F1	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	7.5		5.0	2.5	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017 (Continued) — Lab Sample ID: 500-123929-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonia	7.7		0.40	0.20	mg/L	2		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-123929-1	MW-07-GW-02142017	Water	02/14/17 15:25	02/15/17 16:47
500-123929-2	MW-06-GW-02152017	Water	02/15/17 08:00	02/15/17 16:47
500-123929-3	MW-05-GW-02152017	Water	02/15/17 09:40	02/15/17 16:47
500-123929-4	MW-04-GW-02152017	Water	02/15/17 11:35	02/15/17 16:47

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**27**		5.0	1.7	ug/L			02/21/17 01:55	1
Benzene	**14**		0.50	0.15	ug/L			02/21/17 01:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 01:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 01:55	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/21/17 01:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
Chlorobenzene	**0.86**	**J**	1.0	0.39	ug/L			02/21/17 01:55	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 01:55	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 01:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 01:55	1
cis-1,2-Dichloroethene	**4.1**		1.0	0.41	ug/L			02/21/17 01:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 01:55	1
Cyclohexane	**0.55**	**J**	1.0	0.49	ug/L			02/21/17 01:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 01:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichlorobenzene	**5.9**		1.0	0.33	ug/L			02/21/17 01:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			02/21/17 01:55	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 01:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 01:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Isopropylbenzene	**11**		1.0	0.39	ug/L			02/21/17 01:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
Methylcyclohexane	**0.98**	**J**	1.0	0.32	ug/L			02/21/17 01:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Methyl Ethyl Ketone	**8.1**		5.0	2.1	ug/L			02/21/17 01:55	1
methyl isobutyl ketone	**45**		5.0	2.2	ug/L			02/21/17 01:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 01:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 01:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 01:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 01:55	1
Vinyl chloride	**8.4**		0.50	0.20	ug/L			02/21/17 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/21/17 01:55*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 01:55*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 01:55*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/21/17 01:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**180**		5.0	1.8	ug/L			02/21/17 02:20	10
Toluene	**380**		5.0	1.5	ug/L			02/21/17 02:20	10
Xylenes, Total	**910**		10	2.2	ug/L			02/21/17 02:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 02:20*	*10*
Dibromofluoromethane	*98*		*70 - 120*		*02/21/17 02:20*	*10*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 02:20*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*02/21/17 02:20*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.3**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/20/17 07:25	02/21/17 23:26	1
Anthracene	**2.6**		0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]anthracene	**1.5**		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]pyrene	<0.15	*	0.15	0.072	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[b]fluoranthene	**1.3**	*	0.15	0.059	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[g,h,i]perylene	<0.73	*	0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[k]fluoranthene	**0.56**	*	0.15	0.046	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/20/17 07:25	02/21/17 23:26	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:26	1
Carbazole	<3.6	*	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloro-3-methylphenol	**41**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chlorophenol	<3.6		3.6	0.41	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/20/17 07:25	02/21/17 23:26	1
Chrysene	**1.6**		0.15	0.049	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dibenz(a,h)anthracene	<0.22	*	0.22	0.037	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/20/17 07:25	02/21/17 23:26	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrophenol	<15		15	6.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-octyl phthalate	<7.3		7.3	0.76	ug/L		02/20/17 07:25	02/21/17 23:26	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**3.1**		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobutadiene	<3.6		3.6	0.37	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorocyclopentadiene	<15		15	4.6	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachloroethane	<3.6		3.6	0.43	ug/L		02/20/17 07:25	02/21/17 23:26	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.054	ug/L		02/20/17 07:25	02/21/17 23:26	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylnaphthalene	**5.0**		1.5	0.047	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylphenol	**49**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
3 & 4 Methylphenol	**9.5**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
Naphthalene	**33**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/20/17 07:25	02/21/17 23:26	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenanthrene	**10**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenol	<3.6		3.6	0.49	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pyrene	**10**		0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzaldehyde	**40**	**^**	29	11	ug/L		02/20/17 07:25	02/21/17 23:26	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:26	1
Atrazine	<3.6		3.6	0.45	ug/L		02/20/17 07:25	02/21/17 23:26	1
1,1'-Biphenyl	**2.2**	**J**	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Nitrobenzene-d5 (Surr)	*43*		*33 - 139*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Phenol-d5 (Surr)	*73*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**170**		73	12	ug/L		02/20/17 07:25	02/22/17 18:29	10
2,4-Dimethylphenol	**340**		73	13	ug/L		02/20/17 07:25	02/22/17 18:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*42*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Phenol-d5 (Surr)	*88*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Terphenyl-d14 (Surr)	*79*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*61*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.024	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-BHC	<0.18		0.18	0.012	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		02/16/17 09:00	02/21/17 16:04	5
beta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDE	<0.18		0.18	0.017	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		02/16/17 09:00	02/21/17 16:04	5
delta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
Dieldrin	<0.18		0.18	0.059	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan I	<0.18		0.18	0.019	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan II	<0.18		0.18	0.013	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin	<0.18		0.18	0.065	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin ketone	<0.18		0.18	0.078	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor	<0.18		0.18	0.062	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor epoxide	<0.18		0.18	0.063	ug/L		02/16/17 09:00	02/21/17 16:04	5
Methoxychlor	<0.37		0.37	0.11	ug/L		02/16/17 09:00	02/21/17 16:04	5
Toxaphene	<1.8		1.8	0.92	ug/L		02/16/17 09:00	02/21/17 16:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*7*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 16:04*	*5*
Tetrachloro-m-xylene	*16*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 16:04*	*5*

Method: 8081B - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18	H	0.18	0.025	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-BHC	<0.18	H	0.18	0.012	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-Chlordane	<0.18	H	0.18	0.020	ug/L		02/22/17 17:59	02/23/17 13:12	5
beta-BHC	<0.18	H	0.18	0.047	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDD	<0.18	H	0.18	0.061	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDE	<0.18	H	0.18	0.018	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDT	<0.18	H	0.18	0.015	ug/L		02/22/17 17:59	02/23/17 13:12	5
delta-BHC	<0.18	H	0.18	0.048	ug/L		02/22/17 17:59	02/23/17 13:12	5
Dieldrin	<0.18	H	0.18	0.060	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan I	<0.18	H	0.18	0.019	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan II	<0.18	H	0.18	0.013	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan sulfate	<0.18	H	0.18	0.054	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin	<0.18	H	0.18	0.066	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin aldehyde	<0.18	H	0.18	0.038	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin ketone	<0.18	H	0.18	0.079	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-BHC (Lindane)	<0.18	H	0.18	0.026	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-Chlordane	<0.18	H	0.18	0.033	ug/L		02/22/17 17:59	02/23/17 13:12	5
Heptachlor	<0.18	H	0.18	0.062	ug/L		02/22/17 17:59	02/23/17 13:12	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.18	H	0.18	0.064	ug/L		02/22/17 17:59	02/23/17 13:12	5
Methoxychlor	<0.37	H	0.37	0.11	ug/L		02/22/17 17:59	02/23/17 13:12	5
Toxaphene	<1.8	H	1.8	0.92	ug/L		02/22/17 17:59	02/23/17 13:12	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 143*	*02/22/17 17:59*	*02/23/17 13:12*	*5*
Tetrachloro-m-xylene	*34*		*30 - 120*	*02/22/17 17:59*	*02/23/17 13:12*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**2.3**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**3.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**1.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**2.7**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37	*	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
Tetrachloro-m-xylene	*19*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.3**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:04	1
Antimony	**0.013**	**J**	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:04	1
Arsenic	**0.039**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Barium	**0.51**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cadmium	**0.0052**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:04	1
Calcium	**9.6**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:04	1
Chromium	**0.36**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cobalt	**0.039**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:04	1
Copper	**0.057**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Iron	**3.9**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:04	1
Lead	**0.50**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:04	1
Magnesium	**25**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:04	1
Manganese	**0.015**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Nickel	**0.14**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:04	1
Potassium	**570**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:04	1
Selenium	**0.0093**	**J**	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:04	1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25

Matrix: Water

Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:04	1
Sodium	**3500**		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:03	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Vanadium	**0.055**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:04	1
Zinc	**0.67**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.77**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:08	1
Antimony	**0.0085**	**J**	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:08	1
Arsenic	**0.032**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Barium	**0.46**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cadmium	**0.0027**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:08	1
Calcium	**9.1**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:08	1
Chromium	**0.33**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cobalt	**0.038**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:08	1
Copper	**0.026**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Iron	**3.4**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:08	1
Lead	**0.18**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:08	1
Magnesium	**25**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:08	1
Manganese	**0.013**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Nickel	**0.13**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:08	1
Potassium	**570**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:08	1
Selenium	**0.0070**	**J**	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:08	1
Sodium	**3600**		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:08	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Vanadium	**0.048**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:08	1
Zinc	**0.32**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00086**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:23	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00036**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			02/21/17 07:26	1
Sulfate	<50		50	15	mg/L			02/20/17 09:17	10
Total Organic Carbon - Duplicates	**540**	**B**	40	11	mg/L			02/20/17 00:59	40
Nitrogen, Nitrate	**0.059**	**J**	0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**13**		5.0	2.5	mg/L			02/16/17 10:19	1
Ammonia	**740**		40	20	mg/L		02/16/17 18:50	02/16/17 23:54	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	**0.059**	**J**	0.10	0.035	mg/L			02/17/17 21:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**43**		5.0	1.7	ug/L			02/21/17 02:45	1
Benzene	**6.6**		0.50	0.15	ug/L			02/21/17 02:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 02:45	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 02:45	1
Carbon disulfide	**1.6**	**J**	2.0	0.45	ug/L			02/21/17 02:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
Chlorobenzene	**0.62**	**J**	1.0	0.39	ug/L			02/21/17 02:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 02:45	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 02:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 02:45	1
cis-1,2-Dichloroethene	**3.6**		1.0	0.41	ug/L			02/21/17 02:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 02:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichlorobenzene	**2.3**		1.0	0.33	ug/L			02/21/17 02:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			02/21/17 02:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 02:45	1
1,1-Dichloroethane	**0.45**	**J**	1.0	0.41	ug/L			02/21/17 02:45	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
Ethylbenzene	**55**		0.50	0.18	ug/L			02/21/17 02:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			02/21/17 02:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
Methylcyclohexane	**0.76**	**J**	1.0	0.32	ug/L			02/21/17 02:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Methyl Ethyl Ketone	**14**		5.0	2.1	ug/L			02/21/17 02:45	1
methyl isobutyl ketone	**25**		5.0	2.2	ug/L			02/21/17 02:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Toluene	**130**		0.50	0.15	ug/L			02/21/17 02:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 02:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 02:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 02:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 02:45	1
Vinyl chloride	**3.4**		0.50	0.20	ug/L			02/21/17 02:45	1
Xylenes, Total	**230**		1.0	0.22	ug/L			02/21/17 02:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/21/17 02:45*	*1*
Dibromofluoromethane	*100*		*70 - 120*		*02/21/17 02:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*02/21/17 02:45*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 02:45*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.50**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Anthracene	**0.30**	**J**	0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]pyrene	<0.15	*	0.15	0.072	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[b]fluoranthene	<0.15	*	0.15	0.059	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[g,h,i]perylene	<0.73	*	0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[k]fluoranthene	<0.15	*	0.15	0.047	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-ethylhexyl) phthalate	**41**		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/21/17 23:55	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:55	1
Carbazole	<3.7	*	3.7	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloro-3-methylphenol	**12**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chloronaphthalene	**3.1**		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/21/17 23:55	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dibenz(a,h)anthracene	<0.22	*	0.22	0.037	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:55	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-butyl phthalate	**1.4**	**J**	3.7	0.53	ug/L		02/20/17 07:25	02/21/17 23:55	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluoranthene	**0.43**	**J**	0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluorene	**0.39**	**J**	0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/21/17 23:55	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.055	ug/L		02/20/17 07:25	02/21/17 23:55	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylnaphthalene	**2.0**		1.5	0.048	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylphenol	**18**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**5.0**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Naphthalene	**23**		0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/21/17 23:55	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:55	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenanthrene	**1.0**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenol	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pyrene	**0.59**	**J**	0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzaldehyde	**20**	**J ^**	29	11	ug/L		02/20/17 07:25	02/21/17 23:55	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:55	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/21/17 23:55	1
1,1'-Biphenyl	**1.5**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*55*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2-Fluorophenol (Surr)	*64*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Nitrobenzene-d5 (Surr)	*32*	*X*	*33 - 139*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Phenol-d5 (Surr)	*69*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	**93**		37	6.6	ug/L		02/20/17 07:25	02/22/17 18:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*43*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2-Fluorophenol (Surr)	*68*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Nitrobenzene-d5 (Surr)	*47*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Phenol-d5 (Surr)	*74*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Terphenyl-d14 (Surr)	*92*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:06	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:06	1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:06	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:06	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:06	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 15:06*	*1*
Tetrachloro-m-xylene	*58*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37	*	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*35*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
Tetrachloro-m-xylene	*42*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*18*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.29**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:13	1
Arsenic	**0.021**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Barium	**0.26**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2
Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0015	J	0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:13	1
Calcium	15		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:13	1
Chromium	0.11		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:13	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:13	1
Copper	0.0096	J	0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Iron	0.98		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:13	1
Lead	0.11		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:13	1
Magnesium	31		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:13	1
Manganese	0.0079	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:13	1
Potassium	520		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:13	1
Selenium	0.0081	J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:13	1
Sodium	3300		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:12	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Vanadium	0.032		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:13	1
Zinc	0.11		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.14	J	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:18	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:18	1
Arsenic	0.020		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Barium	0.26		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:18	1
Calcium	15		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:18	1
Chromium	0.10		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:18	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Iron	0.59		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:18	1
Lead	0.0080		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:18	1
Magnesium	31		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:18	1
Manganese	0.0071	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:18	1
Potassium	520		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:18	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:18	1
Sodium	3500		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:17	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Vanadium	0.029		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:18	1
Zinc	0.023		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:26	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.2**		1.0	0.18	mg/L			02/21/17 07:29	1
Sulfate	**21**	**B**	10	2.9	mg/L			02/20/17 09:18	2
Total Organic Carbon - Duplicates	**310**	**B**	20	5.3	mg/L			02/20/17 01:16	20
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**4.0**	**J**	5.0	2.5	mg/L			02/16/17 10:20	1
Ammonia	**530**		40	20	mg/L		02/16/17 18:50	02/16/17 23:57	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.5**		5.0	1.7	ug/L			02/21/17 03:10	1
Benzene	**0.24**	**J**	0.50	0.15	ug/L			02/21/17 03:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/21/17 03:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
Chlorobenzene	**2.9**		1.0	0.39	ug/L			02/21/17 03:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:10	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 03:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:10	1
Cyclohexane	**2.2**		1.0	0.49	ug/L			02/21/17 03:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/21/17 03:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/21/17 03:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/21/17 03:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			02/21/17 03:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
Methylcyclohexane	**0.55**	**J**	1.0	0.32	ug/L			02/21/17 03:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/21/17 03:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/21/17 03:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Toluene	<0.50		0.50	0.15	ug/L			02/21/17 03:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 03:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/21/17 03:10	1
Xylenes, Total	**0.90**	**J**	1.0	0.22	ug/L			02/21/17 03:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*02/21/17 03:10*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 03:10*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 03:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 00:24	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 00:24	1
Carbazole	<3.8	*	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 00:24	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 00:24	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluorene	**0.20**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorocyclopentadiene	<15		15	4.8	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 00:24	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 00:24	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Methylnaphthalene	**0.40**	**J**	1.5	0.049	ug/L		02/20/17 07:25	02/22/17 00:24	1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Naphthalene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 00:24	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodiphenylamine	**0.98**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenanthrene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzaldehyde	<30	^	30	11	ug/L		02/20/17 07:25	02/22/17 00:24	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 00:24	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 00:24	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Nitrobenzene-d5 (Surr)	*63*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Phenol-d5 (Surr)	*52*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/16/17 09:00	02/21/17 15:26	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:26	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:26	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:26	1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/16/17 09:00	02/21/17 15:26	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:26*	*1*
Tetrachloro-m-xylene	*41*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:26*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1260	<0.37	*	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*63*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:26*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:22	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:22	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Barium	**0.86**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:22	1
Calcium	**76**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:22	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:22	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Iron	**20**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:22	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:22	1
Magnesium	**90**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:22	1
Manganese	**0.053**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Nickel	**0.0046**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:22	1
Potassium	**43**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:22	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:22	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:22	1
Sodium	**150**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:22	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:22	1
Zinc	**0.0093**	**J**	0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:22	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Barium	**0.83**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:26	1
Calcium	**73**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:26	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Iron	**19**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:26	1
Magnesium	**88**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:26	1
Manganese	**0.051**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Nickel	<0.010		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:26	1
Potassium	**42**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:26	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:26	1
Sodium	**150**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:29	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:32	1
Sulfate	**2.9**	**J B**	5.0	1.5	mg/L			02/23/17 03:32	1
Total Organic Carbon - Duplicates	**18**	**B**	1.0	0.27	mg/L			02/20/17 01:33	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**56**		5.0	2.5	mg/L			02/16/17 10:22	1
Ammonia	**50**		4.0	2.0	mg/L		02/16/17 18:50	02/16/17 22:40	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**31**		5.0	1.7	ug/L			02/21/17 03:35	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:35	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:35	1
Carbon disulfide	**2.2**		2.0	0.45	ug/L			02/21/17 03:35	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			02/21/17 03:35	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:35	1
Chloroform	**0.65**	**J**	2.0	0.37	ug/L			02/21/17 03:35	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
cis-1,2-Dichloroethene	**11**		1.0	0.41	ug/L			02/21/17 03:35	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:35	1
Cyclohexane	**1.9**		1.0	0.49	ug/L			02/21/17 03:35	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:35	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichlorobenzene	**0.56**	**J**	1.0	0.33	ug/L			02/21/17 03:35	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:35	1
1,1-Dichloroethane	**18**		1.0	0.41	ug/L			02/21/17 03:35	1
1,2-Dichloroethane	**58**		1.0	0.39	ug/L			02/21/17 03:35	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichloropropane	**1.7**		1.0	0.43	ug/L			02/21/17 03:35	1
Ethylbenzene	**13**		0.50	0.18	ug/L			02/21/17 03:35	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:35	1
Isopropylbenzene	**0.92**	**J**	1.0	0.39	ug/L			02/21/17 03:35	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
Methylene Chloride	**6.9**		5.0	1.6	ug/L			02/21/17 03:35	1
Methyl Ethyl Ketone	**9.7**		5.0	2.1	ug/L			02/21/17 03:35	1
methyl isobutyl ketone	**20**		5.0	2.2	ug/L			02/21/17 03:35	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Toluene	**28**		0.50	0.15	ug/L			02/21/17 03:35	1
trans-1,2-Dichloroethene	**1.1**		1.0	0.35	ug/L			02/21/17 03:35	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:35	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:35	1
Trichloroethene	**2.4**		0.50	0.16	ug/L			02/21/17 03:35	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:35	1
Vinyl chloride	**3.8**		0.50	0.20	ug/L			02/21/17 03:35	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/21/17 03:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*02/21/17 03:35*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 03:35*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 03:35*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**530**		5.0	1.5	ug/L			02/21/17 04:00	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 04:00*	*10*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 04:00*	*10*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 127*		*02/21/17 04:00*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 04:00*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acetophenone	**3.0**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Anthracene	<0.73		0.73	0.24	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/22/17 00:53	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/22/17 00:53	1
Carbazole	<3.7	*	3.7	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/22/17 00:53	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dimethylphenol	**31**		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/22/17 00:53	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/22/17 00:53	1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/22/17 00:53	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/22/17 00:53	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylphenol	**7.7**		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
3 & 4 Methylphenol	**11**		1.5	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/22/17 00:53	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/22/17 00:53	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenol	**13**		3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzaldehyde	<29	^	29	11	ug/L		02/20/17 07:25	02/22/17 00:53	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/22/17 00:53	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*39*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:45	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/16/17 09:00	02/21/17 15:45	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:45	1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:45	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*53*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:45*	*1*
Tetrachloro-m-xylene	*28*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 15:45*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1260	<0.37	*	0.37	0.065	ug/L		02/16/17 09:00	02/24/17 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:41*	*1*
DCB Decachlorobiphenyl	*89*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:41*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.094**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:29	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:29	1
Arsenic	**0.0073**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Barium	**0.033**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:29	1
Calcium	**160**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:29	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:29	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Iron	**2.5**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:29	1
Magnesium	**43**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:29	1
Manganese	**1.2**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Nickel	**0.0066**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:29	1
Potassium	**14**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:29	1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:29	1
Sodium	**380**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:29	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:29	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.064**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:34	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:34	1
Arsenic	**0.0094**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Barium	**0.036**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:34	1
Calcium	**180**	**V**	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:34	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:34	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Iron	**2.7**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:34	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:34	1
Magnesium	**48**	**V**	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:34	1
Manganese	**1.3**	**V**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Nickel	**0.0056**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:34	1
Potassium	**16**	**V**	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:34	1
Selenium	<0.010	F1	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:34	1
Sodium	**420**	**V**	1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:34	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:34	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.0**		1.0	0.18	mg/L			02/21/17 07:34	1
Sulfate	**530**	**B**	100	29	mg/L			02/20/17 09:26	20
Total Organic Carbon - Duplicates	**15**	**B F1**	1.0	0.27	mg/L			02/20/17 01:49	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			02/16/17 10:23	1
Ammonia	**7.7**		0.40	0.20	mg/L		02/16/17 18:50	02/17/17 00:00	2
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:53	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time
*	RPD of the LCS and LCSD exceeds the control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
V	Serial Dilution exceeds the control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

GC/MS VOA

Analysis Batch: 372769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8260B	
500-123929-1 - DL	MW-07-GW-02142017	Total/NA	Water	8260B	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8260B	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8260B	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8260B	
500-123929-4 - DL	MW-04-GW-02152017	Total/NA	Water	8260B	
MB 500-372769/6	Method Blank	Total/NA	Water	8260B	
LCS 500-372769/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 372692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	3510C	
500-123929-1 - DL	MW-07-GW-02142017	Total/NA	Water	3510C	
500-123929-2 - DL	MW-06-GW-02152017	Total/NA	Water	3510C	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	3510C	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	3510C	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	3510C	
MB 500-372692/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8270D	372692
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8270D	372692
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8270D	372692
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8270D	372692
MB 500-372692/1-A	Method Blank	Total/NA	Water	8270D	372692
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	8270D	372692
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	372692

Analysis Batch: 373040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1 - DL	MW-07-GW-02142017	Total/NA	Water	8270D	372692
500-123929-2 - DL	MW-06-GW-02152017	Total/NA	Water	8270D	372692

GC Semi VOA

Prep Batch: 372295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	3510C	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	3510C	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	3510C	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	3510C	
MB 500-372295/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372295/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-372295/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372295/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 372295 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 500-372295/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8081B	372295
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8081B	372295
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8081B	372295
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8081B	372295
MB 500-372295/1-A	Method Blank	Total/NA	Water	8081B	372295
LCS 500-372295/2-A	Lab Control Sample	Total/NA	Water	8081B	372295
LCSD 500-372295/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	372295

Prep Batch: 373161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1 - RE	MW-07-GW-02142017	Total/NA	Water	3510C	
MB 500-373161/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-373161/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-373161/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 373230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1 - RE	MW-07-GW-02142017	Total/NA	Water	8081B	373161
MB 500-373161/1-A	Method Blank	Total/NA	Water	8081B	373161
LCS 500-373161/2-A	Lab Control Sample	Total/NA	Water	8081B	373161
LCSD 500-373161/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	373161

Analysis Batch: 373439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8082A	372295
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8082A	372295
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8082A	372295
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8082A	372295
MB 500-372295/1-A	Method Blank	Total/NA	Water	8082A	372295
LCS 500-372295/4-A	Lab Control Sample	Total/NA	Water	8082A	372295
LCSD 500-372295/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	372295

Metals

Prep Batch: 372283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	3010A	
500-123929-1	MW-07-GW-02142017	Total/NA	Water	3010A	
500-123929-2	MW-06-GW-02152017	Dissolved	Water	3010A	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	3010A	
500-123929-3	MW-05-GW-02152017	Dissolved	Water	3010A	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	3010A	
500-123929-4	MW-04-GW-02152017	Dissolved	Water	3010A	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	3010A	
MB 500-372283/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-372283/2-A	Lab Control Sample	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 372283 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-4 MS	MW-04-GW-02152017	Dissolved	Water	3010A	
500-123929-4 MSD	MW-04-GW-02152017	Dissolved	Water	3010A	
500-123929-4 DU	MW-04-GW-02152017	Dissolved	Water	3010A	

Prep Batch: 372328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	7470A	
500-123929-1	MW-07-GW-02142017	Total/NA	Water	7470A	
500-123929-2	MW-06-GW-02152017	Dissolved	Water	7470A	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	7470A	
500-123929-3	MW-05-GW-02152017	Dissolved	Water	7470A	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	7470A	
500-123929-4	MW-04-GW-02152017	Dissolved	Water	7470A	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	7470A	
MB 500-372328/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-372328/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 372530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	7470A	372328
500-123929-1	MW-07-GW-02142017	Total/NA	Water	7470A	372328
500-123929-2	MW-06-GW-02152017	Dissolved	Water	7470A	372328
500-123929-2	MW-06-GW-02152017	Total/NA	Water	7470A	372328
500-123929-3	MW-05-GW-02152017	Dissolved	Water	7470A	372328
500-123929-3	MW-05-GW-02152017	Total/NA	Water	7470A	372328
500-123929-4	MW-04-GW-02152017	Dissolved	Water	7470A	372328
500-123929-4	MW-04-GW-02152017	Total/NA	Water	7470A	372328
MB 500-372328/12-A	Method Blank	Total/NA	Water	7470A	372328
LCS 500-372328/13-A	Lab Control Sample	Total/NA	Water	7470A	372328

Analysis Batch: 372869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	6010C	372283
500-123929-1	MW-07-GW-02142017	Total/NA	Water	6010C	372283
500-123929-2	MW-06-GW-02152017	Dissolved	Water	6010C	372283
500-123929-2	MW-06-GW-02152017	Total/NA	Water	6010C	372283
500-123929-3	MW-05-GW-02152017	Dissolved	Water	6010C	372283
500-123929-3	MW-05-GW-02152017	Total/NA	Water	6010C	372283
500-123929-4	MW-04-GW-02152017	Dissolved	Water	6010C	372283
500-123929-4	MW-04-GW-02152017	Total/NA	Water	6010C	372283
MB 500-372283/1-A	Method Blank	Total/NA	Water	6010C	372283
LCS 500-372283/2-A	Lab Control Sample	Total/NA	Water	6010C	372283
500-123929-4 MS	MW-04-GW-02152017	Dissolved	Water	6010C	372283
500-123929-4 MSD	MW-04-GW-02152017	Dissolved	Water	6010C	372283
500-123929-4 DU	MW-04-GW-02152017	Dissolved	Water	6010C	372283

Analysis Batch: 372957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	6010C	372283
500-123929-1	MW-07-GW-02142017	Total/NA	Water	6010C	372283
500-123929-2	MW-06-GW-02152017	Dissolved	Water	6010C	372283

Metals (Continued)

Analysis Batch: 372957 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-2	MW-06-GW-02152017	Total/NA	Water	6010C	372283

General Chemistry

Analysis Batch: 372324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 2540D	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 2540D	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 2540D	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 2540D	
MB 500-372324/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-372324/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 372326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
MB 500-372326/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-372326/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Prep Batch: 372417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
MB 500-372417/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-372417/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 372445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372417
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372417
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372417
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372417
MB 500-372417/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	372417
LCS 500-372417/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	372417

Analysis Batch: 372664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
MB 500-372664/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-372664/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 372666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	Nitrate by calc	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	Nitrate by calc	

Analysis Batch: 372717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	9038	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	9038	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	9038	
MB 500-372717/3	Method Blank	Total/NA	Water	9038	
LCS 500-372717/4	Lab Control Sample	Total/NA	Water	9038	

Analysis Batch: 372805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	9060A	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	9060A	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	9060A	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	9060A	
MB 500-372805/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372805/5	Lab Control Sample	Total/NA	Water	9060A	
500-123929-4 MS	MW-04-GW-02152017	Total/NA	Water	9060A	
500-123929-4 MSD	MW-04-GW-02152017	Total/NA	Water	9060A	

Analysis Batch: 372856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	9034	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	9034	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	9034	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	9034	
MB 500-372856/1	Method Blank	Total/NA	Water	9034	
LCS 500-372856/2	Lab Control Sample	Total/NA	Water	9034	

Analysis Batch: 373190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-3	MW-05-GW-02152017	Total/NA	Water	9038	
MB 500-373190/3	Method Blank	Total/NA	Water	9038	
LCS 500-373190/4	Lab Control Sample	Total/NA	Water	9038	
500-123929-3 MS	MW-05-GW-02152017	Total/NA	Water	9038	
500-123929-3 MSD	MW-05-GW-02152017	Total/NA	Water	9038	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-123929-1	MW-07-GW-02142017	96	96	110	98
500-123929-1 - DL	MW-07-GW-02142017	100	98	112	95
500-123929-2	MW-06-GW-02152017	97	100	113	97
500-123929-3	MW-05-GW-02152017	103	97	112	96
500-123929-4	MW-04-GW-02152017	101	97	110	97
500-123929-4 - DL	MW-04-GW-02152017	100	96	115	96
LCS 500-372769/4	Lab Control Sample	95	103	115	97
MB 500-372769/6	Method Blank	102	98	115	95

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-123929-1	MW-07-GW-02142017	66	61	43	73	131	119
500-123929-1 - DL	MW-07-GW-02142017	42	81	59	88	79	61
500-123929-2	MW-06-GW-02152017	55	64	32 X	69	100	96
500-123929-2 - DL	MW-06-GW-02152017	43	68	47	74	92	69
500-123929-3	MW-05-GW-02152017	62	65	63	52	96	99
500-123929-4	MW-04-GW-02152017	39	65	55	54	86	68
LCS 500-372692/2-A	Lab Control Sample	77	70	75	56	87	88
LCSD 500-372692/3-A	Lab Control Sample Dup	83	78	84	61	105	101
MB 500-372692/1-A	Method Blank	79	69	78	57	100	72

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-123929-1	MW-07-GW-02142017	7 X	16 X
500-123929-1 - RE	MW-07-GW-02142017	10 X	34
500-123929-2	MW-06-GW-02152017	26 X	58
500-123929-3	MW-05-GW-02152017	70	41
500-123929-4	MW-04-GW-02152017	53	28 X

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
LCS 500-372295/2-A	Lab Control Sample	102	52
LCS 500-373161/2-A	Lab Control Sample	106	74
LCSD 500-372295/3-A	Lab Control Sample Dup	106	48
LCSD 500-373161/3-A	Lab Control Sample Dup	106	73
MB 500-372295/1-A	Method Blank	84	52
MB 500-373161/1-A	Method Blank	114	78

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-123929-1	MW-07-GW-02142017	15 X	19 X	10 X	14 X
500-123929-2	MW-06-GW-02152017	35	42	18 X	26 X
500-123929-3	MW-05-GW-02152017		63		90
500-123929-4	MW-04-GW-02152017		60		89
LCS 500-372295/4-A	Lab Control Sample	57	55	84	108
LCSD 500-372295/5-A	Lab Control Sample Dup	56	54	94	124
MB 500-372295/1-A	Method Blank	60	59	75	97

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372769/6
Matrix: Water
Analysis Batch: 372769

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/20/17 20:49	1
Benzene	<0.50		0.50	0.15	ug/L			02/20/17 20:49	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/20/17 20:49	1
Bromoform	<1.0		1.0	0.48	ug/L			02/20/17 20:49	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/20/17 20:49	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/20/17 20:49	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/20/17 20:49	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/20/17 20:49	1
Chloroform	<2.0		2.0	0.37	ug/L			02/20/17 20:49	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/20/17 20:49	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/20/17 20:49	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/20/17 20:49	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/20/17 20:49	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/20/17 20:49	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/20/17 20:49	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/20/17 20:49	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/20/17 20:49	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/20/17 20:49	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/20/17 20:49	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/20/17 20:49	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/20/17 20:49	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/20/17 20:49	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/20/17 20:49	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/20/17 20:49	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/20/17 20:49	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/20/17 20:49	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/20/17 20:49	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/20/17 20:49	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
Styrene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/20/17 20:49	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/20/17 20:49	1
Toluene	<0.50		0.50	0.15	ug/L			02/20/17 20:49	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/20/17 20:49	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/20/17 20:49	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/20/17 20:49	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/20/17 20:49	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/20/17 20:49	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/20/17 20:49	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/20/17 20:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/20/17 20:49	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/20/17 20:49	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/20/17 20:49	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		71 - 120		02/20/17 20:49	1
Dibromofluoromethane	98		70 - 120		02/20/17 20:49	1
1,2-Dichloroethane-d4 (Surr)	115		71 - 127		02/20/17 20:49	1
Toluene-d8 (Surr)	95		75 - 120		02/20/17 20:49	1

Lab Sample ID: LCS 500-372769/4
Matrix: Water
Analysis Batch: 372769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	46.8		ug/L		94	37 - 141
Benzene	50.0	48.1		ug/L		96	70 - 125
Bromodichloromethane	50.0	49.5		ug/L		99	70 - 125
Bromoform	50.0	48.4		ug/L		97	54 - 128
Bromomethane	50.0	58.4		ug/L		117	40 - 150
Carbon disulfide	50.0	44.3		ug/L		89	68 - 125
Carbon tetrachloride	50.0	49.9		ug/L		100	70 - 125
Chlorobenzene	50.0	49.5		ug/L		99	70 - 125
Chloroethane	50.0	53.4		ug/L		107	60 - 139
Chloroform	50.0	49.0		ug/L		98	70 - 125
Chloromethane	50.0	50.9		ug/L		102	60 - 140
cis-1,2-Dichloroethene	50.0	47.8		ug/L		96	70 - 125
cis-1,3-Dichloropropene	50.0	49.0		ug/L		98	70 - 125
Cyclohexane	50.0	51.1		ug/L		102	56 - 149
Dibromochloromethane	50.0	50.4		ug/L		101	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	48.7		ug/L		97	51 - 125
1,2-Dibromoethane	50.0	51.8		ug/L		104	70 - 125
1,2-Dichlorobenzene	50.0	50.2		ug/L		100	70 - 125
1,3-Dichlorobenzene	50.0	48.5		ug/L		97	70 - 125
1,4-Dichlorobenzene	50.0	48.2		ug/L		96	70 - 125
Dichlorodifluoromethane	50.0	47.7		ug/L		95	51 - 140
1,1-Dichloroethane	50.0	51.2		ug/L		102	70 - 125
1,2-Dichloroethane	50.0	56.8		ug/L		114	70 - 125
1,1-Dichloroethene	50.0	47.8		ug/L		96	70 - 125
1,2-Dichloropropane	50.0	51.5		ug/L		103	70 - 125
Ethylbenzene	50.0	47.5		ug/L		95	70 - 125
2-Hexanone	50.0	50.1		ug/L		100	49 - 139
Isopropylbenzene	50.0	47.1		ug/L		94	70 - 125
Methyl acetate	250	278		ug/L		111	60 - 148
Methylcyclohexane	50.0	49.1		ug/L		98	70 - 127
Methylene Chloride	50.0	48.9		ug/L		98	68 - 125
Methyl Ethyl Ketone	50.0	49.3		ug/L		99	52 - 142
methyl isobutyl ketone	50.0	51.2		ug/L		102	47 - 140
Methyl tert-butyl ether	50.0	52.7		ug/L		105	67 - 125
Styrene	50.0	49.6		ug/L		99	70 - 125
1,1,2,2-Tetrachloroethane	50.0	50.6		ug/L		101	68 - 125
Tetrachloroethene	50.0	49.7		ug/L		99	70 - 125
Toluene	50.0	49.3		ug/L		99	70 - 125
trans-1,2-Dichloroethene	50.0	46.0		ug/L		92	70 - 125
trans-1,3-Dichloropropene	50.0	49.2		ug/L		98	70 - 125
1,2,4-Trichlorobenzene	50.0	52.9		ug/L		106	64 - 126
1,1,1-Trichloroethane	50.0	49.4		ug/L		99	70 - 125
1,1,2-Trichloroethane	50.0	51.6		ug/L		103	70 - 125
Trichloroethene	50.0	50.5		ug/L		101	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372769/4
Matrix: Water
Analysis Batch: 372769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	53.5		ug/L		107	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.3		ug/L		101	57 - 141
Vinyl chloride	50.0	56.1		ug/L		112	70 - 126
Xylenes, Total	100	95.5		ug/L		96	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*103*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 127*
Toluene-d8 (Surr)	*97*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/20/17 07:25	02/21/17 20:59	1
Anthracene	<0.80		0.80	0.27	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/20/17 07:25	02/21/17 20:59	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/20/17 07:25	02/21/17 20:59	1
Carbazole	<4.0		4.0	0.28	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/20/17 07:25	02/21/17 20:59	1
Chrysene	<0.16		0.16	0.055	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/20/17 07:25	02/21/17 20:59	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluorene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/20/17 07:25	02/21/17 20:59	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/20/17 07:25	02/21/17 20:59	1
Isophorone	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/20/17 07:25	02/21/17 20:59	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitrophenol	<16		16	5.9	ug/L		02/20/17 07:25	02/21/17 20:59	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/20/17 07:25	02/21/17 20:59	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pentachlorophenol	<16		16	3.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenol	<4.0		4.0	0.54	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pyrene	<0.80		0.80	0.34	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzaldehyde	<32	^	32	12	ug/L		02/20/17 07:25	02/21/17 20:59	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Atrazine	<4.0		4.0	0.50	ug/L		02/20/17 07:25	02/21/17 20:59	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*30 - 123*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*30 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	36.0	27.7		ug/L		77	41 - 112
Acenaphthylene	36.0	28.2		ug/L		78	48 - 110
Acetophenone	36.0	25.9		ug/L		72	54 - 116
Anthracene	36.0	27.9		ug/L		78	65 - 118
Benzo[a]anthracene	36.0	29.7		ug/L		83	69 - 121
Benzo[a]pyrene	36.0	31.4		ug/L		87	69 - 130
Benzo[b]fluoranthene	36.0	33.6		ug/L		93	66 - 133
Benzo[g,h,i]perylene	36.0	31.0		ug/L		86	47 - 145
Benzo[k]fluoranthene	36.0	32.7		ug/L		91	64 - 134
Bis(2-chloroethoxy)methane	36.0	27.4		ug/L		76	55 - 115
Bis(2-chloroethyl)ether	36.0	27.1		ug/L		75	46 - 110
Bis(2-ethylhexyl) phthalate	36.0	33.3		ug/L		93	60 - 132
4-Bromophenyl phenyl ether	36.0	26.8		ug/L		74	60 - 124
Butyl benzyl phthalate	36.0	31.0		ug/L		86	63 - 127
Carbazole	36.0	46.5		ug/L		129	71 - 132
4-Chloroaniline	36.0	26.7		ug/L		74	15 - 125
4-Chloro-3-methylphenol	36.0	28.5		ug/L		79	63 - 120
2-Chloronaphthalene	36.0	26.9		ug/L		75	38 - 110
2-Chlorophenol	36.0	25.8		ug/L		72	49 - 110
4-Chlorophenyl phenyl ether	36.0	27.2		ug/L		76	55 - 115
Chrysene	36.0	29.2		ug/L		81	70 - 126
Dibenz(a,h)anthracene	36.0	30.7		ug/L		85	59 - 145
Dibenzofuran	36.0	27.7		ug/L		77	54 - 111
3,3'-Dichlorobenzidine	36.0	39.2		ug/L		109	57 - 145
2,4-Dichlorophenol	36.0	27.2		ug/L		76	53 - 123
Diethyl phthalate	36.0	30.1		ug/L		84	64 - 126
2,4-Dimethylphenol	36.0	22.5		ug/L		62	42 - 115
Dimethyl phthalate	36.0	31.3		ug/L		87	66 - 120
Di-n-butyl phthalate	36.0	30.6		ug/L		85	67 - 125
4,6-Dinitro-2-methylphenol	72.0	63.9		ug/L		89	34 - 152
2,4-Dinitrophenol	72.0	62.6		ug/L		87	20 - 140
2,4-Dinitrotoluene	36.0	31.7		ug/L		88	67 - 131
2,6-Dinitrotoluene	36.0	32.1		ug/L		89	66 - 125
Di-n-octyl phthalate	36.0	33.7		ug/L		94	63 - 133
Fluoranthene	36.0	28.8		ug/L		80	68 - 127
Fluorene	36.0	27.5		ug/L		76	54 - 113
Hexachlorobenzene	36.0	26.3		ug/L		73	63 - 127
Hexachlorobutadiene	36.0	17.4		ug/L		48	20 - 110
Hexachlorocyclopentadiene	36.0	14.9	J	ug/L		42	10 - 110
Hexachloroethane	36.0	18.7		ug/L		52	20 - 110
Indeno[1,2,3-cd]pyrene	36.0	30.1		ug/L		84	52 - 150
Isophorone	36.0	26.9		ug/L		75	55 - 120
2-Methylnaphthalene	36.0	23.3		ug/L		65	32 - 110
2-Methylphenol	36.0	25.3		ug/L		70	49 - 113
3 & 4 Methylphenol	36.0	25.2		ug/L		70	49 - 114
Naphthalene	36.0	23.3		ug/L		65	32 - 110
2-Nitroaniline	36.0	31.1		ug/L		86	61 - 126
3-Nitroaniline	36.0	34.1		ug/L		95	42 - 134

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitroaniline	36.0	43.4		ug/L		121	40 - 142
Nitrobenzene	36.0	26.3		ug/L		73	49 - 116
2-Nitrophenol	36.0	28.3		ug/L		79	51 - 120
4-Nitrophenol	72.0	39.2		ug/L		54	21 - 110
N-Nitrosodi-n-propylamine	36.0	25.8		ug/L		72	52 - 122
N-Nitrosodiphenylamine	36.0	29.9		ug/L		83	63 - 117
2,2'-oxybis[1-chloropropane]	36.0	23.1		ug/L		64	34 - 110
Pentachlorophenol	72.0	49.0		ug/L		68	29 - 138
Phenanthrene	36.0	28.2		ug/L		78	63 - 121
Phenol	36.0	21.6		ug/L		60	33 - 100
Pyrene	36.0	28.5		ug/L		79	65 - 122
2,4,5-Trichlorophenol	36.0	30.0		ug/L		83	63 - 121
2,4,6-Trichlorophenol	36.0	30.4		ug/L		84	61 - 120
Caprolactam	36.0	17.8		ug/L		49	25 - 100
Atrazine	36.0	29.7		ug/L		82	57 - 128
1,1'-Biphenyl	36.0	28.0		ug/L		78	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*77*		*30 - 123*
2-Fluorophenol (Surr)	*70*		*30 - 110*
Nitrobenzene-d5 (Surr)	*75*		*33 - 139*
Phenol-d5 (Surr)	*56*		*20 - 100*
Terphenyl-d14 (Surr)	*87*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	28.2		ug/L		88	41 - 112	2	20
Acenaphthylene	32.0	28.2		ug/L		88	48 - 110	0	20
Acetophenone	32.0	26.0		ug/L		81	54 - 116	1	20
Anthracene	32.0	28.8		ug/L		90	65 - 118	3	20
Benzo[a]anthracene	32.0	31.0		ug/L		97	69 - 121	4	20
Benzo[a]pyrene	32.0	32.3		ug/L		101	69 - 130	3	20
Benzo[b]fluoranthene	32.0	35.0		ug/L		109	66 - 133	4	20
Benzo[g,h,i]perylene	32.0	30.7		ug/L		96	47 - 145	1	20
Benzo[k]fluoranthene	32.0	32.9		ug/L		103	64 - 134	1	20
Bis(2-chloroethoxy)methane	32.0	27.9		ug/L		87	55 - 115	2	20
Bis(2-chloroethyl)ether	32.0	27.3		ug/L		85	46 - 110	1	20
Bis(2-ethylhexyl) phthalate	32.0	34.7		ug/L		108	60 - 132	4	20
4-Bromophenyl phenyl ether	32.0	29.0		ug/L		91	60 - 124	8	20
Butyl benzyl phthalate	32.0	34.2		ug/L		107	63 - 127	10	20
Carbazole	32.0	46.8	*	ug/L		146	71 - 132	1	20
4-Chloroaniline	32.0	27.2		ug/L		85	15 - 125	2	20
4-Chloro-3-methylphenol	32.0	29.1		ug/L		91	63 - 120	2	20
2-Chloronaphthalene	32.0	26.7		ug/L		83	38 - 110	1	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chlorophenol	32.0	25.8		ug/L		81	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	28.8		ug/L		90	55 - 115	5	20
Chrysene	32.0	30.8		ug/L		96	70 - 126	5	20
Dibenz(a,h)anthracene	32.0	31.4		ug/L		98	59 - 145	2	20
Dibenzofuran	32.0	28.7		ug/L		90	54 - 111	3	20
3,3'-Dichlorobenzidine	32.0	40.9		ug/L		128	57 - 145	4	20
2,4-Dichlorophenol	32.0	27.4		ug/L		86	53 - 123	1	20
Diethyl phthalate	32.0	30.1		ug/L		94	64 - 126	0	20
2,4-Dimethylphenol	32.0	21.6		ug/L		67	42 - 115	4	20
Dimethyl phthalate	32.0	30.5		ug/L		95	66 - 120	3	20
Di-n-butyl phthalate	32.0	30.8		ug/L		96	67 - 125	1	20
4,6-Dinitro-2-methylphenol	64.0	66.9		ug/L		105	34 - 152	5	20
2,4-Dinitrophenol	64.0	64.3		ug/L		101	20 - 140	3	20
2,4-Dinitrotoluene	32.0	32.5		ug/L		102	67 - 131	3	20
2,6-Dinitrotoluene	32.0	31.5		ug/L		99	66 - 125	2	20
Di-n-octyl phthalate	32.0	32.5		ug/L		102	63 - 133	3	20
Fluoranthene	32.0	29.4		ug/L		92	68 - 127	2	20
Fluorene	32.0	28.5		ug/L		89	54 - 113	3	20
Hexachlorobenzene	32.0	27.9		ug/L		87	63 - 127	6	20
Hexachlorobutadiene	32.0	19.6		ug/L		61	20 - 110	12	20
Hexachlorocyclopentadiene	32.0	15.0	J	ug/L		47	10 - 110	0	20
Hexachloroethane	32.0	20.4		ug/L		64	20 - 110	9	20
Indeno[1,2,3-cd]pyrene	32.0	31.2		ug/L		98	52 - 150	4	20
Isophorone	32.0	27.6		ug/L		86	55 - 120	3	20
2-Methylnaphthalene	32.0	25.0		ug/L		78	32 - 110	7	20
2-Methylphenol	32.0	25.1		ug/L		79	49 - 113	1	20
3 & 4 Methylphenol	32.0	25.1		ug/L		79	49 - 114	0	20
Naphthalene	32.0	24.4		ug/L		76	32 - 110	5	20
2-Nitroaniline	32.0	30.3		ug/L		95	61 - 126	3	20
3-Nitroaniline	32.0	36.4		ug/L		114	42 - 134	7	20
4-Nitroaniline	32.0	44.1		ug/L		138	40 - 142	2	20
Nitrobenzene	32.0	26.2		ug/L		82	49 - 116	0	20
2-Nitrophenol	32.0	29.6		ug/L		92	51 - 120	4	20
4-Nitrophenol	64.0	37.9		ug/L		59	21 - 110	3	20
N-Nitrosodi-n-propylamine	32.0	25.7		ug/L		80	52 - 122	0	20
N-Nitrosodiphenylamine	32.0	30.7		ug/L		96	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	22.9		ug/L		72	34 - 110	1	20
Pentachlorophenol	64.0	52.6		ug/L		82	29 - 138	7	20
Phenanthrene	32.0	28.8		ug/L		90	63 - 121	2	20
Phenol	32.0	21.4		ug/L		67	33 - 100	1	20
Pyrene	32.0	31.2		ug/L		98	65 - 122	9	20
2,4,5-Trichlorophenol	32.0	29.1		ug/L		91	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	29.5		ug/L		92	61 - 120	3	20
Caprolactam	32.0	17.9		ug/L		56	25 - 100	1	20
Atrazine	32.0	31.1		ug/L		97	57 - 128	5	20
1,1'-Biphenyl	32.0	27.6		ug/L		86	42 - 110	2	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*83*		*30 - 123*
2-Fluorophenol (Surr)	*78*		*30 - 110*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*
Phenol-d5 (Surr)	*61*		*20 - 100*
Terphenyl-d14 (Surr)	*105*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-372295/1-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/16/17 09:00	02/21/17 13:50	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/16/17 09:00	02/21/17 13:50	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/16/17 09:00	02/21/17 13:50	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/16/17 09:00	02/21/17 13:50	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/16/17 09:00	02/21/17 13:50	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/16/17 09:00	02/21/17 13:50	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/16/17 09:00	02/21/17 13:50	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/16/17 09:00	02/21/17 13:50	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endrin	<0.040		0.040	0.014	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/16/17 09:00	02/21/17 13:50	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/16/17 09:00	02/21/17 13:50	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/16/17 09:00	02/21/17 13:50	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/16/17 09:00	02/21/17 13:50	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/16/17 09:00	02/21/17 13:50	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/16/17 09:00	02/21/17 13:50	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/21/17 13:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*84*		*30 - 143*	*02/16/17 09:00*	*02/21/17 13:50*	*1*
Tetrachloro-m-xylene	*52*		*30 - 120*	*02/16/17 09:00*	*02/21/17 13:50*	*1*

Lab Sample ID: LCS 500-372295/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.225		ug/L		70	40 - 130
alpha-BHC	0.320	0.299		ug/L		93	70 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-372295/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-Chlordane	0.320	0.292		ug/L		91	70 - 130
beta-BHC	0.320	0.299		ug/L		93	70 - 130
4,4'-DDD	0.320	0.339		ug/L		106	70 - 130
4,4'-DDE	0.320	0.294		ug/L		92	56 - 130
4,4'-DDT	0.320	0.353		ug/L		110	50 - 137
delta-BHC	0.320	0.314		ug/L		98	70 - 130
Dieldrin	0.320	0.331		ug/L		103	70 - 130
Endosulfan I	0.320	0.154		ug/L		48	40 - 130
Endosulfan II	0.320	0.211		ug/L		66	49 - 130
Endosulfan sulfate	0.320	0.353		ug/L		110	70 - 130
Endrin	0.320	0.340		ug/L		106	69 - 130
Endrin aldehyde	0.320	0.255		ug/L		80	63 - 130
Endrin ketone	0.320	0.369		ug/L		115	54 - 141
gamma-BHC (Lindane)	0.320	0.316		ug/L		99	70 - 130
gamma-Chlordane	0.320	0.318		ug/L		99	63 - 130
Heptachlor	0.320	0.273		ug/L		85	40 - 130
Heptachlor epoxide	0.320	0.400		ug/L		125	70 - 130
Methoxychlor	0.320	0.390		ug/L		122	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*102*		*30 - 143*
Tetrachloro-m-xylene	*52*		*30 - 120*

Lab Sample ID: LCSD 500-372295/3-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372295

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.198		ug/L		62	40 - 130	13	20
alpha-BHC	0.320	0.293		ug/L		91	70 - 130	2	20
alpha-Chlordane	0.320	0.286		ug/L		89	70 - 130	2	20
beta-BHC	0.320	0.296		ug/L		93	70 - 130	1	20
4,4'-DDD	0.320	0.339		ug/L		106	70 - 130	0	20
4,4'-DDE	0.320	0.275		ug/L		86	56 - 130	6	20
4,4'-DDT	0.320	0.348		ug/L		109	50 - 137	1	20
delta-BHC	0.320	0.314		ug/L		98	70 - 130	0	20
Dieldrin	0.320	0.322		ug/L		101	70 - 130	3	20
Endosulfan I	0.320	0.153		ug/L		48	40 - 130	1	20
Endosulfan II	0.320	0.205		ug/L		64	49 - 130	3	20
Endosulfan sulfate	0.320	0.356		ug/L		111	70 - 130	1	20
Endrin	0.320	0.357		ug/L		111	69 - 130	5	20
Endrin aldehyde	0.320	0.251		ug/L		78	63 - 130	1	20
Endrin ketone	0.320	0.375		ug/L		117	54 - 141	2	20
gamma-BHC (Lindane)	0.320	0.313		ug/L		98	70 - 130	1	20
gamma-Chlordane	0.320	0.285		ug/L		89	63 - 130	11	20
Heptachlor	0.320	0.258		ug/L		80	40 - 130	6	20
Heptachlor epoxide	0.320	0.348		ug/L		109	70 - 130	14	20
Methoxychlor	0.320	0.387		ug/L		121	47 - 153	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	106		30 - 143
Tetrachloro-m-xylene	48		30 - 120

Lab Sample ID: MB 500-373161/1-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373161

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/22/17 17:59	02/23/17 11:55	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/22/17 17:59	02/23/17 11:55	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/22/17 17:59	02/23/17 11:55	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/22/17 17:59	02/23/17 11:55	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/22/17 17:59	02/23/17 11:55	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/22/17 17:59	02/23/17 11:55	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/22/17 17:59	02/23/17 11:55	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/22/17 17:59	02/23/17 11:55	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endrin	<0.040		0.040	0.014	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/22/17 17:59	02/23/17 11:55	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/22/17 17:59	02/23/17 11:55	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/22/17 17:59	02/23/17 11:55	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/22/17 17:59	02/23/17 11:55	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/22/17 17:59	02/23/17 11:55	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/22/17 17:59	02/23/17 11:55	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/22/17 17:59	02/23/17 11:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	114		30 - 143	02/22/17 17:59	02/23/17 11:55	1
Tetrachloro-m-xylene	78		30 - 120	02/22/17 17:59	02/23/17 11:55	1

Lab Sample ID: LCS 500-373161/2-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.279		ug/L		87	40 - 130
alpha-BHC	0.320	0.310		ug/L		97	70 - 130
alpha-Chlordane	0.320	0.316		ug/L		99	70 - 130
beta-BHC	0.320	0.312		ug/L		98	70 - 130
4,4'-DDD	0.320	0.355		ug/L		111	70 - 130
4,4'-DDE	0.320	0.303		ug/L		95	56 - 130
4,4'-DDT	0.320	0.344		ug/L		108	50 - 137
delta-BHC	0.320	0.315		ug/L		99	70 - 130
Dieldrin	0.320	0.338		ug/L		106	70 - 130
Endosulfan I	0.320	0.159		ug/L		50	40 - 130
Endosulfan II	0.320	0.212		ug/L		66	49 - 130
Endosulfan sulfate	0.320	0.369		ug/L		115	70 - 130
Endrin	0.320	0.362		ug/L		113	69 - 130
Endrin aldehyde	0.320	0.275		ug/L		86	63 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-373161/2-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin ketone	0.320	0.389		ug/L		121	54 - 141
gamma-BHC (Lindane)	0.320	0.327		ug/L		102	70 - 130
gamma-Chlordane	0.320	0.323		ug/L		101	63 - 130
Heptachlor	0.320	0.333		ug/L		104	40 - 130
Heptachlor epoxide	0.320	0.361		ug/L		113	70 - 130
Methoxychlor	0.320	0.389		ug/L		122	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*106*		*30 - 143*
Tetrachloro-m-xylene	*74*		*30 - 120*

Lab Sample ID: LCSD 500-373161/3-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 373161

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.267		ug/L		83	40 - 130	5	20
alpha-BHC	0.320	0.298		ug/L		93	70 - 130	4	20
alpha-Chlordane	0.320	0.305		ug/L		95	70 - 130	4	20
beta-BHC	0.320	0.306		ug/L		96	70 - 130	2	20
4,4'-DDD	0.320	0.339		ug/L		106	70 - 130	5	20
4,4'-DDE	0.320	0.296		ug/L		92	56 - 130	3	20
4,4'-DDT	0.320	0.329		ug/L		103	50 - 137	4	20
delta-BHC	0.320	0.310		ug/L		97	70 - 130	2	20
Dieldrin	0.320	0.331		ug/L		103	70 - 130	2	20
Endosulfan I	0.320	0.157		ug/L		49	40 - 130	2	20
Endosulfan II	0.320	0.205		ug/L		64	49 - 130	3	20
Endosulfan sulfate	0.320	0.368		ug/L		115	70 - 130	0	20
Endrin	0.320	0.343		ug/L		107	69 - 130	6	20
Endrin aldehyde	0.320	0.320		ug/L		100	63 - 130	15	20
Endrin ketone	0.320	0.378		ug/L		118	54 - 141	3	20
gamma-BHC (Lindane)	0.320	0.317		ug/L		99	70 - 130	3	20
gamma-Chlordane	0.320	0.314		ug/L		98	63 - 130	3	20
Heptachlor	0.320	0.324		ug/L		101	40 - 130	3	20
Heptachlor epoxide	0.320	0.347		ug/L		109	70 - 130	4	20
Methoxychlor	0.320	0.410		ug/L		128	47 - 153	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*106*		*30 - 143*
Tetrachloro-m-xylene	*73*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-372295/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373439 — **Prep Batch: 372295**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1016	<0.40		0.40	0.067	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/16/17 09:00	02/24/17 12:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 127*	*02/16/17 09:00*	*02/24/17 12:09*	*1*
Tetrachloro-m-xylene	*59*		*30 - 127*	*02/16/17 09:00*	*02/24/17 12:09*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*02/16/17 09:00*	*02/24/17 12:09*	*1*
DCB Decachlorobiphenyl	*97*		*30 - 150*	*02/16/17 09:00*	*02/24/17 12:09*	*1*

Lab Sample ID: LCS 500-372295/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373439 — **Prep Batch: 372295**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.24		ug/L		81	58 - 121
PCB-1016	4.00	3.33		ug/L		83	58 - 121
PCB-1260	4.00	4.03		ug/L		101	62 - 137
PCB-1260	4.00	4.40		ug/L		110	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*57*		*30 - 127*
Tetrachloro-m-xylene	*55*		*30 - 127*
DCB Decachlorobiphenyl	*84*		*30 - 150*
DCB Decachlorobiphenyl	*108*		*30 - 150*

Lab Sample ID: LCSD 500-372295/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373439 — **Prep Batch: 372295**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.32		ug/L		83	58 - 121	2	20
PCB-1016	4.00	3.38		ug/L		85	58 - 121	1	20
PCB-1260	4.00	3.53		ug/L		88	62 - 137	13	20
PCB-1260	4.00	3.58	*	ug/L		90	62 - 137	21	20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 500-372295/5-A
Matrix: Water
Analysis Batch: 373439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372295

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*56*		*30 - 127*
Tetrachloro-m-xylene	*54*		*30 - 127*
DCB Decachlorobiphenyl	*94*		*30 - 150*
DCB Decachlorobiphenyl	*124*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-372283/1-A
Matrix: Water
Analysis Batch: 372869

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 18:28	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 18:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 18:28	1
Barium	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 18:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 18:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 18:28	1
Calcium	<0.20		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 18:28	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 18:28	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 18:28	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 18:28	1
Iron	<0.20		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 18:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 18:28	1
Magnesium	<0.10		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 18:28	1
Manganese	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 18:28	1
Nickel	<0.010		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 18:28	1
Potassium	<0.50		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 18:28	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 18:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 18:28	1
Sodium	<1.0		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 18:28	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 18:28	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 18:28	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 18:28	1

Lab Sample ID: LCS 500-372283/2-A
Matrix: Water
Analysis Batch: 372869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.07		mg/L		104	80 - 120
Antimony	0.500	0.500		mg/L		100	80 - 120
Arsenic	0.100	0.0993		mg/L		99	80 - 120
Barium	2.00	2.09		mg/L		105	80 - 120
Beryllium	0.0500	0.0503		mg/L		101	80 - 120
Cadmium	0.0500	0.0495		mg/L		99	80 - 120
Calcium	10.0	10.3		mg/L		103	80 - 120
Chromium	0.200	0.205		mg/L		102	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-372283/2-A
Matrix: Water
Analysis Batch: 372869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.500	0.508		mg/L		102	80 - 120
Copper	0.250	0.254		mg/L		102	80 - 120
Iron	1.00	1.06		mg/L		106	80 - 120
Lead	0.100	0.0960		mg/L		96	80 - 120
Magnesium	10.0	9.83		mg/L		98	80 - 120
Manganese	0.500	0.509		mg/L		102	80 - 120
Nickel	0.500	0.505		mg/L		101	80 - 120
Potassium	10.0	10.6		mg/L		106	80 - 120
Selenium	0.100	0.0958		mg/L		96	80 - 120
Silver	0.0500	0.0499		mg/L		100	80 - 120
Sodium	10.0	10.7		mg/L		107	80 - 120
Thallium	0.100	0.0965		mg/L		97	80 - 120
Vanadium	0.500	0.516		mg/L		103	80 - 120
Zinc	0.500	0.499		mg/L		100	80 - 120

Lab Sample ID: 500-123929-4 MS
Matrix: Water
Analysis Batch: 372869

Client Sample ID: MW-04-GW-02152017
Prep Type: Dissolved
Prep Batch: 372283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.064	J	2.00	2.24		mg/L		109	75 - 125
Antimony	<0.020		0.500	0.531		mg/L		106	75 - 125
Arsenic	0.0094	J	0.100	0.118		mg/L		108	75 - 125
Barium	0.036		2.00	2.16		mg/L		106	75 - 125
Beryllium	<0.0040		0.0500	0.0523		mg/L		105	75 - 125
Cadmium	<0.0020		0.0500	0.0529		mg/L		106	75 - 125
Calcium	180	V	10.0	187	4	mg/L		41	75 - 125
Chromium	<0.010		0.200	0.200		mg/L		100	75 - 125
Cobalt	<0.0050		0.500	0.529		mg/L		106	75 - 125
Copper	<0.010		0.250	0.268		mg/L		107	75 - 125
Iron	2.7		1.00	3.64		mg/L		98	75 - 125
Lead	<0.0050		0.100	0.0984		mg/L		98	75 - 125
Magnesium	48	V	10.0	56.5	4	mg/L		87	75 - 125
Manganese	1.3	V	0.500	1.80		mg/L		91	75 - 125
Nickel	0.0056	J	0.500	0.525		mg/L		104	75 - 125
Potassium	16	V	10.0	26.1		mg/L		103	75 - 125
Selenium	<0.010	F1	0.100	0.0745		mg/L		75	75 - 125
Silver	<0.0050		0.0500	0.0548		mg/L		110	75 - 125
Sodium	420	V	10.0	414	4	mg/L		-36	75 - 125
Thallium	<0.010		0.100	0.0922		mg/L		92	75 - 125
Vanadium	<0.0050		0.500	0.534		mg/L		107	75 - 125
Zinc	<0.020		0.500	0.528		mg/L		106	75 - 125

Lab Sample ID: 500-123929-4 MSD
Matrix: Water
Analysis Batch: 372869

Client Sample ID: MW-04-GW-02152017
Prep Type: Dissolved
Prep Batch: 372283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	0.064	J	2.00	2.22		mg/L		108	75 - 125	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123929-4 MSD — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372869 — **Prep Batch: 372283**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.020		0.500	0.533		mg/L		107	75 - 125	0	20
Arsenic	0.0094	J	0.100	0.118		mg/L		108	75 - 125	0	20
Barium	0.036		2.00	2.16		mg/L		106	75 - 125	0	20
Beryllium	<0.0040		0.0500	0.0525		mg/L		105	75 - 125	0	20
Cadmium	<0.0020		0.0500	0.0530		mg/L		106	75 - 125	0	20
Calcium	180	V	10.0	186	4	mg/L		27	75 - 125	1	20
Chromium	<0.010		0.200	0.202		mg/L		101	75 - 125	1	20
Cobalt	<0.0050		0.500	0.533		mg/L		107	75 - 125	1	20
Copper	<0.010		0.250	0.269		mg/L		108	75 - 125	0	20
Iron	2.7		1.00	3.60		mg/L		94	75 - 125	1	20
Lead	<0.0050		0.100	0.100		mg/L		100	75 - 125	2	20
Magnesium	48	V	10.0	56.1	4	mg/L		83	75 - 125	1	20
Manganese	1.3	V	0.500	1.79		mg/L		89	75 - 125	1	20
Nickel	0.0056	J	0.500	0.529		mg/L		105	75 - 125	1	20
Potassium	16	V	10.0	26.0		mg/L		101	75 - 125	1	20
Selenium	<0.010	F1	0.100	0.0706	F1	mg/L		71	75 - 125	5	20
Silver	<0.0050		0.0500	0.0557		mg/L		111	75 - 125	2	20
Sodium	420	V	10.0	416	4	mg/L		-20	75 - 125	0	20
Thallium	<0.010		0.100	0.0922		mg/L		92	75 - 125	0	20
Vanadium	<0.0050		0.500	0.540		mg/L		108	75 - 125	1	20
Zinc	<0.020		0.500	0.532		mg/L		106	75 - 125	1	20

Lab Sample ID: 500-123929-4 DU — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372869 — **Prep Batch: 372283**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	0.064	J	<0.20		mg/L		NC	20
Antimony	<0.020		<0.020		mg/L		NC	20
Arsenic	0.0094	J	0.00900	J	mg/L		4	20
Barium	0.036		0.0374		mg/L		3	20
Beryllium	<0.0040		<0.0040		mg/L		NC	20
Cadmium	<0.0020		<0.0020		mg/L		NC	20
Calcium	180	V	186		mg/L		2	20
Chromium	<0.010		<0.010		mg/L		NC	20
Cobalt	<0.0050		<0.0050		mg/L		NC	20
Copper	<0.010		<0.010		mg/L		NC	20
Iron	2.7		2.70		mg/L		2	20
Lead	<0.0050		<0.0050		mg/L		NC	20
Magnesium	48	V	48.8		mg/L		2	20
Manganese	1.3	V	1.37		mg/L		2	20
Nickel	0.0056	J	0.00551	J	mg/L		2	20
Potassium	16	V	16.1		mg/L		2	20
Selenium	<0.010	F1	<0.010		mg/L		NC	20
Silver	<0.0050		<0.0050		mg/L		NC	20
Sodium	420	V	427		mg/L		2	20
Thallium	<0.010		<0.010		mg/L		NC	20
Vanadium	<0.0050		<0.0050		mg/L		NC	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123929-4 DU — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372869 — **Prep Batch: 372283**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Zinc	<0.020			<0.020		mg/L				NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-372328/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372530 — **Prep Batch: 372328**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 08:56	1

Lab Sample ID: LCS 500-372328/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372530 — **Prep Batch: 372328**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00200	0.00211		mg/L		105	80 - 120		

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-372856/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:01	1

Lab Sample ID: LCS 500-372856/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			6.91	6.81		mg/L		99	80 - 120		

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-372717/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.06	J	5.0	1.5	mg/L			02/20/17 09:06	1

Lab Sample ID: LCS 500-372717/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			20.0	20.2		mg/L		101	80 - 120		

Lab Sample ID: MB 500-373190/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.04	J	5.0	1.5	mg/L			02/23/17 03:27	1

Lab Sample ID: LCS 500-373190/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	18.7		mg/L		93	80 - 120

Lab Sample ID: 500-123929-3 MS — **Client Sample ID: MW-05-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.9	J B	20.0	23.4		mg/L		103	75 - 125

Lab Sample ID: 500-123929-3 MSD — **Client Sample ID: MW-05-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2.9	J B	20.0	25.1		mg/L		111	75 - 125	7	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-372805/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.287	J	1.0	0.27	mg/L			02/20/17 00:10	1

Lab Sample ID: LCS 500-372805/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	11.1		mg/L		111	80 - 120
TOC Result 1	10.0	11.0		mg/L		110	80 - 120
TOC Result 2	10.0	11.1		mg/L		111	80 - 120

Lab Sample ID: 500-123929-4 MS — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	15	B F1	10.0	21.5	F1	mg/L		62	75 - 125
TOC Result 1	15	B F1	10.0	21.5	F1	mg/L		68	75 - 125
TOC Result 2	16	F1	10.0	21.5	F1	mg/L		57	75 - 125

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 500-123929-4 MSD — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	15	B F1	10.0	21.2	F1	mg/L		60	75 - 125	1	20
TOC Result 1	15	B F1	10.0	21.2	F1	mg/L		65	75 - 125	1	20
TOC Result 2	16	F1	10.0	21.2	F1	mg/L		55	75 - 125	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-372324/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			02/16/17 09:50	1

Lab Sample ID: LCS 500-372324/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	185		mg/L		93	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-372417/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372445 — **Prep Batch: 372417**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		02/16/17 18:50	02/16/17 22:06	1

Lab Sample ID: LCS 500-372417/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372445 — **Prep Batch: 372417**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.44		mg/L		98	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-372326/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:25	1

Method: SM 4500 NO2 B - Nitrogen, Nitrite (Continued)

Lab Sample ID: LCS 500-372326/4
Matrix: Water
Analysis Batch: 372326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.107		mg/L		107	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-372664/4
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:08	1

Lab Sample ID: LCS 500-372664/5
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.971		mg/L		97	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 01:55	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	372769	02/21/17 02:20	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/21/17 23:26	GES	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	10	373040	02/22/17 18:29	AJD	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8081B		5	372911	02/21/17 16:04	PJG	TAL CHI
Total/NA	Prep	3510C	RE		373161	02/22/17 17:59	JP1	TAL CHI
Total/NA	Analysis	8081B	RE	5	373230	02/23/17 13:12	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 12:55	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:08	PJ1	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		10	372957	02/21/17 13:08	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:04	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		10	372957	02/21/17 13:03	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:24	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:23	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:26		
					(End)	02/21/17 07:29		
Total/NA	Analysis	9038		10	372717		CLB	TAL CHI
					(Start)	02/20/17 09:17		
					(End)	02/20/17 09:18		
Total/NA	Analysis	9060A		40	372805	02/20/17 00:59	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:19		
					(End)	02/16/17 10:20		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372445	02/16/17 23:54	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:28		
					(End)	02/16/17 10:28		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:48	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 02:45	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/21/17 23:55	GES	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373040	02/22/17 18:58	AJD	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 15:06	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 13:10	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:18	PJ1	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		10	372957	02/21/17 13:17	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:13	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		10	372957	02/21/17 13:12	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:27	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:26	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:29		
					(End)	02/21/17 07:32		
Total/NA	Analysis	9038		2	372717		CLB	TAL CHI
					(Start)	02/20/17 09:18		
					(End)	02/20/17 09:19		
Total/NA	Analysis	9060A		20	372805	02/20/17 01:16	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:20		
					(End)	02/16/17 10:22		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372445	02/16/17 23:57	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:28		
					(End)	02/16/17 10:28		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:49	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 03:10	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 00:24	GES	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 15:26	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 13:26	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:26	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:22	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:30	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:29	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:32		
					(End)	02/21/17 07:34		
Total/NA	Analysis	9038		1	373190		CLB	TAL CHI
					(Start)	02/23/17 03:32		
					(End)	02/23/17 03:33		
Total/NA	Analysis	9060A		1	372805	02/20/17 01:33	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:22		
					(End)	02/16/17 10:23		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372445	02/16/17 22:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:29		
					(End)	02/16/17 10:29		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:50	HMW	TAL CHI

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 03:35	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	372769	02/21/17 04:00	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 00:53	GES	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8081B		1	372911	02/21/17 15:45	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 13:41	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:34	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:29	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:33	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:31	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:34		
					(End)	02/21/17 07:37		
Total/NA	Analysis	9038		20	372717		CLB	TAL CHI
					(Start)	02/20/17 09:26		
					(End)	02/20/17 09:27		
Total/NA	Analysis	9060A		1	372805	02/20/17 01:49	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:23		
					(End)	02/16/17 10:25		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	372445	02/17/17 00:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:29		
					(End)	02/16/17 10:30		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:53	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500- 123929

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.1, 2.9

(optional)

Report To
Contact: Jack Kreitzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 - 579 - 3700
Fax:
E-Mail: Jack.Kreitzmeyer@arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI0C1B09.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
[illegible] to 4°
[illegible]°
[illegible]°
[illegible] to 4°

500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs Pesticides (8)	Total Metals (3)	Dissolved Metals (3)	Ammonia NO3/NO2 (6)	Sulfide (5)	TOC (2)	TSS, SO4 NO2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	Preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhofer	Arcadis	2-15-2017	1552	[illegible]	TA	2/15/17	1552
[illegible]	TA	2/15/17	1630	Luis Sandoz	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
"MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

2/28/2017
TAL-4124-500-(1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123929-1

Login Number: 123929
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123929-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/28/2017 10:30:13 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-2

Job ID: 500-123929-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123929-2

Comments
No additional comments.

Receipt
The samples were received on 2/15/2017 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.8º C and 4.1º C.

Receipt Exceptions

'MW-03-GW-02152017' was on COC. but not sent in with samples. Contacted client and they let us know that they were unable to finish the set so will send in tomorrow with other samples

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

February 27, 2017

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-123929-2**

Pace Workorder: 21749

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 17, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 02/27/2017
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages ____

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 21749 500-123929-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
217490001	MW-07-GW-02142017	Water	2/14/2017 15:25	2/17/2017 10:40
217490002	MW-06-GW-02152017	Water	2/15/2017 08:00	2/17/2017 10:40
217490003	MW-05-GW-02152017	Water	2/15/2017 09:40	2/17/2017 10:40
217490004	MW-04-GW-02152017	Water	2/15/2017 11:35	2/17/2017 10:40

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ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-07-GW-02142017** Date Collected: 2/14/2017 15:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:13	MM	n
Carbon Dioxide	**62**	mg/l	5.0	0.24	1	2/24/2017 15:13	MM	n
Oxygen	**1.3**	mg/l	0.50	0.13	1	2/24/2017 15:13	MM	n
Nitrogen	**9.2**	mg/l	2.0	0.24	1	2/24/2017 15:13	MM	n

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ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-06-GW-02152017** Date Collected: 2/15/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:26	MM	n
Carbon Dioxide	**17**	mg/l	5.0	0.24	1	2/24/2017 15:26	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 15:26	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	2/24/2017 15:26	MM	n

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ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-05-GW-02152017** Date Collected: 2/15/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**19000**	ug/l	0.50	0.027	1	2/24/2017 15:39	MM	n
Carbon Dioxide	**320**	mg/l	5.0	0.24	1	2/24/2017 15:39	MM	n
Oxygen	**1.5**	mg/l	0.50	0.13	1	2/24/2017 15:39	MM	n
Nitrogen	**6.9**	mg/l	2.0	0.24	1	2/24/2017 15:39	MM	n

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ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-04-GW-02152017** Date Collected: 2/15/2017 11:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**17000**	ug/l	0.50	0.027	1	2/24/2017 15:52	MM	n
Carbon Dioxide	**200**	mg/l	5.0	0.24	1	2/24/2017 15:52	MM	n
Oxygen	**3.2**	mg/l	0.50	0.13	1	2/24/2017 15:52	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 15:52	MM	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 21749 500-123929-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 21749 500-123929-2

QC Batch: DISG/5933 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 217490001, 217490002, 217490003, 217490004

METHOD BLANK: 47179

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 47180

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 47181 47183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	780	760	104	101	80-120	2.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 47182 47184

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	112	115	80-120	2.6	20	n
Oxygen	mg/l	11	11	11	95	93	80-120	2.1	20	n
Nitrogen	mg/l	140	120	120	85	84	80-120	1.2	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 21749 500-123929-2

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 21749 500-123929-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
217490001	MW-07-GW-02142017			AM20GAX	DISG/5933
217490002	MW-06-GW-02152017			AM20GAX	DISG/5933
217490003	MW-05-GW-02152017			AM20GAX	DISG/5933
217490004	MW-04-GW-02152017			AM20GAX	DISG/5933

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kreitzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-579-3700
Fax:
E-Mail: Jack.Kreitzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123929
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.1, 2.9

Client: Arcadis
Client Project #: CI0C1B09.0002.00085
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
to 4°
°
°
to 4°

500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	8 SVOCs, PCB Pesticide	3 Total Metals	3 Dissolved Metals	6 Ammonia NO3/NO2	5 Sulfide	2 TOC	8 TSS, SO4 NO2	1 VOC	9 Dissolved Gases	Comments
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	Preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhofer	Arcadis	2-15-2017	1552	[signature]	TA	2/15/17	1552
[signature]	TA	2/15/17	1630	Luis Sandoz	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
"MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123929-2

Login Number: 123929
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123998-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
3/3/2017 9:16:25 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-123998-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123998-1

Comments
No additional comments.

Receipt
The samples were received on 2/16/2017 3:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were -0.9º C, 1.7º C and 2.8º C.

GC/MS VOA
Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-01-GW-02162017 (500-123998-3) and DUP-1-02162017 (500-123998-6). The sample was analyzed within 7 days per EPA recommendation, therefore no further corrective action was needed.

Method(s) 8260B: The following sample was diluted due to the abundance of target and/or non-target analytes: MW-03-GW-02152017 (500-123998-1) and MW-13-GW-02162017 (500-123998-4). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: One surrogate recovery for the following sample was outside control limits: DUP-1-02162017 (500-123998-6). Evidence of matrix interference is present (basic pH); therefore, re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-367726/13)

Method(s) 8270D: CCVIS 500-372962/2 was outside the method criteria for the following analytes: Carbazole (high) and Hexachlorocyclopentadiene (low). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.(CCVIS 500-372962/2)

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS associated with batch 500-373020 had 1 analyte outside control limits: 4-Bromophenyl phenyl ether. These results have been reported and qualified. (LCS 500-373020/2-A)

Method(s) 8270D: The following sample contained one acid surrogate outside acceptance limits: MW-13-GW-02162017 (500-123998-4). The laboratory's SOP allows one acid and one base/neutral surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCSD associated with batch 500-373345 had 1 analyte outside control limits: Carbazole. The LCS was in control. These results have been reported and qualified. (LCSD 500-373345/3-A)

Method(s) 8270D: The following sample required a dilution due to the nature of the sample matrix: MW-03-GW-02152017 (500-123998-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: Internal standard (ISTD6) response for the following sample was outside of acceptance limits: MW-13-GW-02162017 (500-123998-4). The sample was not re-analyzed due to no detects for analytes associated with ISTD6.

Job ID: 500-123998-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCSD associated with batch 500-373692 had 1 analyte outside control limits: Carbazole. The LCS was in control. These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-03-GW-02152017 (500-123998-1), MW-02-GW-02152017 (500-123998-2), MW-01-GW-02162017 (500-123998-3), MW-13-GW-02162017 (500-123998-4), MW-11-GW-02162017 (500-123998-5) and DUP-1-02162017 (500-123998-6). The reagent lot number used was: 153166.

Method(s) 8082A: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-01-GW-02162017 (500-123998-3), MW-13-GW-02162017 (500-123998-4) and DUP-1-02162017 (500-123998-6). The reagent lot number used was: 153166.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The low-level CCV at line 8 in 6010C batch 500-373200 was above the method acceptance limits of 70-130% recovery for Iron. The samples MW-03-GW-02152017 (500-123998-1) and MW-02-GW-02152017 (500-123998-2) were bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017 — Lab Sample ID: 500-123998-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	57		2.5	0.73	ug/L	5		8260B	Total/NA
Chlorobenzene	2.7	J	5.0	1.9	ug/L	5		8260B	Total/NA
Ethylbenzene	13		2.5	0.92	ug/L	5		8260B	Total/NA
Toluene	29		2.5	0.76	ug/L	5		8260B	Total/NA
Xylenes, Total	63		5.0	1.1	ug/L	5		8260B	Total/NA
Acenaphthene	20		0.75	0.23	ug/L	1		8270D	Total/NA
Acenaphthylene	1.9		0.75	0.20	ug/L	1		8270D	Total/NA
Anthracene	7.6		0.75	0.25	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.39		0.15	0.043	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.23		0.15	0.074	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.19		0.15	0.061	ug/L	1		8270D	Total/NA
Chrysene	0.36		0.15	0.051	ug/L	1		8270D	Total/NA
Dibenzofuran	27		1.5	0.20	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	17		7.5	1.4	ug/L	1		8270D	Total/NA
Fluoranthene	5.8		0.75	0.34	ug/L	1		8270D	Total/NA
Fluorene	43		0.75	0.18	ug/L	1		8270D	Total/NA
2-Methylphenol	2.2		1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	1.6		1.5	0.34	ug/L	1		8270D	Total/NA
Phenanthrene	36		0.75	0.23	ug/L	1		8270D	Total/NA
Pyrene	4.1		0.75	0.32	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	15		3.8	0.27	ug/L	1		8270D	Total/NA
Carbazole - DL	71	*	38	2.7	ug/L	10		8270D	Total/NA
2-Methylnaphthalene - DL	150		15	0.49	ug/L	10		8270D	Total/NA
Naphthalene - DL2	870		38	12	ug/L	50		8270D	Total/NA
Barium	1.1		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	94		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	4.0	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	94		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.10		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0062	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	69		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0055	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	300		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.95		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	86		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	3.3	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	84		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.091		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0049	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	62		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	270		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	5.0	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	22		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	11		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	41		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-02-GW-02152017 — Lab Sample ID: 500-123998-2

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017 (Continued) — Lab Sample ID: 500-123998-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.3		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Chloroethane	4.5		1.0	0.51	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	6.2		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	4.1		1.0	0.40	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	11		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	1.4		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.9		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.84		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	3.9		1.0	0.22	ug/L	1		8260B	Total/NA
Chlorobenzene - DL	480		10	3.9	ug/L	10		8260B	Total/NA
Acenaphthene	1.0		0.75	0.23	ug/L	1		8270D	Total/NA
Bis(2-chloroethyl)ether	1.4	J	1.5	0.22	ug/L	1		8270D	Total/NA
2-Chlorophenol	4.9		3.8	0.42	ug/L	1		8270D	Total/NA
Fluorene	0.67	J	0.75	0.18	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	7.1		0.75	0.28	ug/L	1		8270D	Total/NA
Phenanthrene	0.32	J	0.75	0.23	ug/L	1		8270D	Total/NA
2-Methylnaphthalene - DL	100		7.5	0.24	ug/L	5		8270D	Total/NA
Naphthalene - DL	73		3.8	1.2	ug/L	5		8270D	Total/NA
Barium	0.34		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	98		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	34	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	49		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.21		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0045	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	34		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	160		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.050		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.36		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	36	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	54		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.23		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0043	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	37		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0069	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	180		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	0.38	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	3.0	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	19		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	63		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	46		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-01-GW-02162017 — Lab Sample ID: 500-123998-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	55		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	30		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	5.8		1.0	0.39	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-01-GW-02162017 (Continued) — Lab Sample ID: 500-123998-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	1.6		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.8		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	24		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	14		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.8		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	46		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	99		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	11		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.48	J	0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	23		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	8.1		0.77	0.24	ug/L	1		8270D	Total/NA
Acetophenone	2.0	J	3.8	0.51	ug/L	1		8270D	Total/NA
Anthracene	0.26	J	0.77	0.26	ug/L	1		8270D	Total/NA
Carbazole	6.4	*	3.8	0.27	ug/L	1		8270D	Total/NA
4-Chloroaniline	13		7.7	1.5	ug/L	1		8270D	Total/NA
Dibenzofuran	1.4	J	1.5	0.20	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	6.7	J	7.7	1.4	ug/L	1		8270D	Total/NA
Fluorene	2.6		0.77	0.19	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	5.5		1.5	0.050	ug/L	1		8270D	Total/NA
2-Methylphenol	1.5		1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	6.6		1.5	0.34	ug/L	1		8270D	Total/NA
Phenanthrene	1.3		0.77	0.23	ug/L	1		8270D	Total/NA
Naphthalene - DL	130		3.8	1.2	ug/L	5		8270D	Total/NA
Phenol - DL	72		19	2.6	ug/L	5		8270D	Total/NA
Aluminum	0.34		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0068	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0038	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.46		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	510		0.20	0.059	mg/L	1		6010C	Total/NA
Lead	0.0027	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	1.7		0.10	0.041	mg/L	1		6010C	Total/NA
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	51		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.012	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.21		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0046	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	510		0.20	0.059	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	50		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	210		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	0.98	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	24	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	31		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	29		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	49		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-13-GW-02162017 — Lab Sample ID: 500-123998-4

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017 (Continued) — Lab Sample ID: 500-123998-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	410		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	37		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	18		10	3.3	ug/L	10		8260B	Total/NA
Ethylbenzene	1300		5.0	1.8	ug/L	10		8260B	Total/NA
Isopropylbenzene	100		10	3.9	ug/L	10		8260B	Total/NA
Vinyl chloride	11		5.0	2.0	ug/L	10		8260B	Total/NA
Toluene - DL	2600		50	15	ug/L	100		8260B	Total/NA
Xylenes, Total - DL	8400		100	22	ug/L	100		8260B	Total/NA
Acenaphthene	0.86		0.74	0.23	ug/L	1		8270D	Total/NA
Acenaphthylene	2.3		0.74	0.20	ug/L	1		8270D	Total/NA
Acetophenone	32		3.7	0.49	ug/L	1		8270D	Total/NA
Anthracene	0.29	J	0.74	0.25	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	2.9	J	7.4	1.3	ug/L	1		8270D	Total/NA
Butyl benzyl phthalate	1.3	J	1.5	0.35	ug/L	1		8270D	Total/NA
Diethyl phthalate	11		1.5	0.27	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	42		7.4	1.3	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	3.9		3.7	0.54	ug/L	1		8270D	Total/NA
Fluorene	1.2		0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	11		1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	40		1.5	0.33	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	11		0.74	0.27	ug/L	1		8270D	Total/NA
Phenanthrene	0.86		0.74	0.22	ug/L	1		8270D	Total/NA
Phenol	39		3.7	0.50	ug/L	1		8270D	Total/NA
2,4,6-Trichlorophenol	1.3	J	3.7	0.53	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	2.0	J	3.7	0.27	ug/L	1		8270D	Total/NA
Naphthalene - DL	190		7.4	2.3	ug/L	10		8270D	Total/NA
Arsenic	0.0074	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	100		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Iron	4.8		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	47		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.24		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.014		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	67		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	230		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0028	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Arsenic	0.0070	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	100		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0027	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0020	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	4.3		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	48		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.24		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.014		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	69		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0063	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017 (Continued) — Lab Sample ID: 500-123998-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.0025	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	3.4		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	100	B	25	7.4	mg/L	5		9038	Total/NA
Total Organic Carbon - Duplicates	61	B	2.0	0.53	mg/L	2		9060A	Total/NA
Total Suspended Solids	20		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	57		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-11-GW-02162017 — Lab Sample ID: 500-123998-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	81		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	11		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	110		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.2		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.8		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	3.1		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	61		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	170		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	0.82		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	17		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.23	J	0.73	0.23	ug/L	1		8270D	Total/NA
Diethyl phthalate	0.64	J	1.5	0.27	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	0.69	J	3.7	0.54	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	3.7		1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	3.2		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	2.4		0.73	0.23	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	1.7		0.73	0.27	ug/L	1		8270D	Total/NA
Phenol	0.73	J	3.7	0.49	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	0.99	J	3.7	0.27	ug/L	1		8270D	Total/NA
Barium	0.79		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0073	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Iron	29		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	120		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.020		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	110		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	380		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0050		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.011	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.79		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0010	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0076	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017 (Continued) — Lab Sample ID: 500-123998-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.019		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	120		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0068	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	390		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0042	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	7.2	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	36		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	100		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	59		5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: DUP-1-02162017 — Lab Sample ID: 500-123998-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	59		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	30		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	5.7		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.5		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.7		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	25		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	13		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.9		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	45		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	99		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	11		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.45	J	0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	24		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	8.1		0.74	0.23	ug/L	1		8270D	Total/NA
Acetophenone	1.4	J	3.7	0.49	ug/L	1		8270D	Total/NA
Carbazole	4.3	*	3.7	0.26	ug/L	1		8270D	Total/NA
Dibenzofuran	1.3	J	1.5	0.19	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	5.5	J	7.4	1.3	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	0.75	J	3.7	0.54	ug/L	1		8270D	Total/NA
Fluorene	2.4		0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	4.3		1.5	0.048	ug/L	1		8270D	Total/NA
2-Methylphenol	1.4	J	1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	6.3		1.5	0.33	ug/L	1		8270D	Total/NA
Phenanthrene	1.2		0.74	0.22	ug/L	1		8270D	Total/NA
Naphthalene - DL	120		3.7	1.1	ug/L	5		8270D	Total/NA
Phenol - DL	96		18	2.5	ug/L	5		8270D	Total/NA
Aluminum	0.33		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0066	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	500		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	0.12	J	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0025	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	1.7		0.10	0.041	mg/L	1		6010C	Total/NA
Nickel	0.015		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	50		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017 (Continued) — Lab Sample ID: 500-123998-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.0020	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.010	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.22		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0048	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.47		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	530		0.20	0.059	mg/L	1		6010C	Dissolved
Magnesium	0.043	J	0.10	0.041	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	52		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	220		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0021	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	3.5		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	22	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	30		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	49		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-123998-1	MW-03-GW-02152017	Water	02/15/17 13:20	02/16/17 15:35
500-123998-2	MW-02-GW-02152017	Water	02/15/17 16:05	02/16/17 15:35
500-123998-3	MW-01-GW-02162017	Water	02/16/17 07:55	02/16/17 15:35
500-123998-4	MW-13-GW-02162017	Water	02/16/17 10:35	02/16/17 15:35
500-123998-5	MW-11-GW-02162017	Water	02/16/17 13:00	02/16/17 15:35
500-123998-6	DUP-1-02162017	Water	02/16/17 00:00	02/16/17 15:35

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<25		25	8.7	ug/L			02/23/17 18:27	5
Benzene	**57**		2.5	0.73	ug/L			02/23/17 18:27	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Bromoform	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Bromomethane	<10		10	4.0	ug/L			02/23/17 18:27	5
Carbon disulfide	<10		10	2.2	ug/L			02/23/17 18:27	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Chlorobenzene	**2.7**	**J**	5.0	1.9	ug/L			02/23/17 18:27	5
Chloroethane	<5.0		5.0	2.5	ug/L			02/23/17 18:27	5
Chloroform	<10		10	1.9	ug/L			02/23/17 18:27	5
Chloromethane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
cis-1,2-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Cyclohexane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			02/23/17 18:27	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,2-Dichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			02/23/17 18:27	5
1,1-Dichloroethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Ethylbenzene	**13**		2.5	0.92	ug/L			02/23/17 18:27	5
2-Hexanone	<25		25	7.8	ug/L			02/23/17 18:27	5
Isopropylbenzene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Methyl acetate	<25		25	10	ug/L			02/23/17 18:27	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
Methylene Chloride	<25		25	8.2	ug/L			02/23/17 18:27	5
Methyl Ethyl Ketone	<25		25	11	ug/L			02/23/17 18:27	5
methyl isobutyl ketone	<25		25	11	ug/L			02/23/17 18:27	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Styrene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Toluene	**29**		2.5	0.76	ug/L			02/23/17 18:27	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Trichloroethene	<2.5		2.5	0.82	ug/L			02/23/17 18:27	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			02/23/17 18:27	5
Vinyl chloride	<2.5		2.5	1.0	ug/L			02/23/17 18:27	5
Xylenes, Total	**63**		5.0	1.1	ug/L			02/23/17 18:27	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:27*	*5*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 18:27*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 18:27*	*5*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/23/17 18:27*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**20**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acenaphthylene	**1.9**		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Anthracene	**7.6**		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]anthracene	**0.39**		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]pyrene	**0.23**		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[b]fluoranthene	**0.19**		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 01:52	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 01:52	1
Chrysene	**0.36**		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenzofuran	**27**		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dimethylphenol	**17**		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 01:52	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluoranthene	**5.8**		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluorene	**43**		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorocyclopentadiene	<15		15	4.8	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 01:52	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 01:52	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Methylphenol	**2.2**		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
3 & 4 Methylphenol	**1.6**		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 01:52	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitroaniline	<7.5		7.5	1.2	ug/L		02/20/17 07:25	02/22/17 01:52	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodiphenylamine	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenanthrene	**36**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pyrene	**4.1**		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 01:52	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 01:52	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 01:52	1
1,1'-Biphenyl	**15**		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2-Fluorophenol (Surr)	*66*		*30 - 110*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Nitrobenzene-d5 (Surr)	*70*		*33 - 139*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Phenol-d5 (Surr)	*50*		*20 - 100*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	**71**	*	38	2.7	ug/L		02/20/17 07:25	02/23/17 02:43	10
2-Methylnaphthalene	**150**		15	0.49	ug/L		02/20/17 07:25	02/23/17 02:43	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**870**		38	12	ug/L		02/20/17 07:25	02/24/17 15:27	50

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:16	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:16	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:16	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:16	1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:16	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*76*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:16*	*1*
Tetrachloro-m-xylene	*105*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:16*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:02*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:02*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:40	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:35	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Barium	**1.1**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:40	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:35	1
Calcium	**94**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:40	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:35	1
Iron	**4.0**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:35	1
Magnesium	**94**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:40	1
Manganese	**0.10**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Nickel	**0.0062**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:35	1
Potassium	**69**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:40	1
Selenium	**0.0055**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:35	1
Sodium	**300**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:44	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:39	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Barium	**0.95**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:44	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:44	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:39	1
Calcium	**86**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:44	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:39	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:39	1
Iron	**3.3**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:44	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:39	1
Magnesium	**84**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:44	1
Manganese	**0.091**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Nickel	**0.0049**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:39	1
Potassium	**62**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:44	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:39	1
Sodium	**270**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:44	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:39	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:37	1
Sulfate	**5.0**	**B**	5.0	1.5	mg/L			03/02/17 07:08	1
Total Organic Carbon - Duplicates	**22**		1.0	0.27	mg/L			02/17/17 00:38	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**11**		5.0	2.5	mg/L			02/17/17 13:08	1
Ammonia	**41**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:11	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.3**		5.0	1.7	ug/L			02/23/17 17:07	1
Benzene	**14**		0.50	0.15	ug/L			02/23/17 17:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 17:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 17:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 17:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
Chloroethane	**4.5**		1.0	0.51	ug/L			02/23/17 17:07	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 17:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 17:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichlorobenzene	**6.2**		1.0	0.33	ug/L			02/23/17 17:07	1
1,3-Dichlorobenzene	**4.1**		1.0	0.40	ug/L			02/23/17 17:07	1
1,4-Dichlorobenzene	**11**		1.0	0.36	ug/L			02/23/17 17:07	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 17:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
Ethylbenzene	**1.4**		0.50	0.18	ug/L			02/23/17 17:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Isopropylbenzene	**4.9**		1.0	0.39	ug/L			02/23/17 17:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 17:07	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 17:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 17:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Toluene	**0.84**		0.50	0.15	ug/L			02/23/17 17:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 17:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 17:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 17:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 17:07	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 17:07	1
Xylenes, Total	**3.9**		1.0	0.22	ug/L			02/23/17 17:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/23/17 17:07*	*1*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 17:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*71 - 127*		*02/23/17 17:07*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/23/17 17:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**480**		10	3.9	ug/L			02/23/17 17:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/23/17 17:34*	*10*
Dibromofluoromethane	*95*		*70 - 120*		*02/23/17 17:34*	*10*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*02/23/17 17:34*	*10*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/23/17 17:34*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.0**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethyl)ether	**1.4**	**J**	1.5	0.22	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 02:21	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 02:21	1
Carbazole	<3.8	*	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chlorophenol	**4.9**		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 02:21	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 02:21	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 02:21	1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
Fluorene	**0.67**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorocyclopentadiene	<15		15	4.8	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 02:21	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 02:21	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 02:21	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodiphenylamine	**7.1**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenanthrene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 02:21	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 02:21	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 02:21	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Nitrobenzene-d5 (Surr)	*62*		*33 - 139*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**100**		7.5	0.24	ug/L		02/20/17 07:25	02/23/17 03:10	5
Naphthalene	**73**		3.8	1.2	ug/L		02/20/17 07:25	02/23/17 03:10	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:35	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.038		0.038	0.0037	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:35	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:35	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:35	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:35*	*1*
Tetrachloro-m-xylene	*117*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:35*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*79*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:18*	*1*
DCB Decachlorobiphenyl	*72*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:18*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:49	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:44	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Barium	**0.34**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:44	1
Calcium	**98**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:49	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:44	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:44	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:44	1
Iron	**34**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:49	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:44	1
Magnesium	**49**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.21**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Nickel	**0.0045**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:44	1
Potassium	**34**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:49	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:44	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:44	1
Sodium	**160**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:49	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:44	1
Zinc	**0.050**		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:44	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:52	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Barium	**0.36**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:52	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:48	1
Calcium	**110**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:52	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:48	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:48	1
Iron	**36**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:48	1
Magnesium	**54**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:52	1
Manganese	**0.23**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Nickel	**0.0043**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:48	1
Potassium	**37**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:52	1
Selenium	**0.0069**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:48	1
Sodium	**180**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:48	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.38**	**J**	1.0	0.18	mg/L			02/21/17 07:39	1
Sulfate	**3.0**	**J B**	5.0	1.5	mg/L			03/02/17 07:09	1
Total Organic Carbon - Duplicates	**19**		1.0	0.27	mg/L			02/17/17 00:54	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**63**		5.0	2.5	mg/L			02/17/17 13:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**46**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:14	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**55**		5.0	1.7	ug/L			02/23/17 04:42	1
Benzene	**30**		0.50	0.15	ug/L			02/23/17 04:42	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 04:42	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 04:42	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 04:42	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
Chlorobenzene	**5.8**		1.0	0.39	ug/L			02/23/17 04:42	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 04:42	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 04:42	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 04:42	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 04:42	1
Cyclohexane	**1.6**		1.0	0.49	ug/L			02/23/17 04:42	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 04:42	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichlorobenzene	**1.8**		1.0	0.33	ug/L			02/23/17 04:42	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
1,4-Dichlorobenzene	**3.6**		1.0	0.36	ug/L			02/23/17 04:42	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 04:42	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
Ethylbenzene	**24**		0.50	0.18	ug/L			02/23/17 04:42	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Isopropylbenzene	**14**		1.0	0.39	ug/L			02/23/17 04:42	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
Methylcyclohexane	**1.8**		1.0	0.32	ug/L			02/23/17 04:42	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Methyl Ethyl Ketone	**46**		5.0	2.1	ug/L			02/23/17 04:42	1
methyl isobutyl ketone	**99**		5.0	2.2	ug/L			02/23/17 04:42	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Toluene	**11**		0.50	0.15	ug/L			02/23/17 04:42	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 04:42	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 04:42	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 04:42	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 04:42	1
Vinyl chloride	**0.48**	**J**	0.50	0.20	ug/L			02/23/17 04:42	1
Xylenes, Total	**23**		1.0	0.22	ug/L			02/23/17 04:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/23/17 04:42*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*02/23/17 04:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 04:42*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 04:42*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.77	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acenaphthylene	<0.77		0.77	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acetophenone	**2.0**	**J**	3.8	0.51	ug/L		02/23/17 22:30	02/24/17 14:30	1
Anthracene	**0.26**	**J**	0.77	0.26	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]pyrene	<0.15		0.15	0.076	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.062	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[g,h,i]perylene	<0.77		0.77	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-ethylhexyl) phthalate	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/23/17 22:30	02/24/17 14:30	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		02/23/17 22:30	02/24/17 14:30	1
Carbazole	**6.4**	*****	3.8	0.27	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloroaniline	**13**		7.7	1.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloro-3-methylphenol	<7.7		7.7	1.8	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.49	ug/L		02/23/17 22:30	02/24/17 14:30	1
Chrysene	<0.15		0.15	0.052	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenzofuran	**1.4**	**J**	1.5	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dimethylphenol	**6.7**	**J**	7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		02/23/17 22:30	02/24/17 14:30	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrophenol	<15		15	6.6	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrotoluene	<0.77		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,6-Dinitrotoluene	<0.77		0.77	0.056	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-octyl phthalate	<7.7		7.7	0.80	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluoranthene	<0.77		0.77	0.35	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluorene	**2.6**		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobenzene	<0.38		0.38	0.061	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorocyclopentadiene	<15		15	4.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		02/23/17 22:30	02/24/17 14:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		02/23/17 22:30	02/24/17 14:30	1
Isophorone	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Methylnaphthalene	**5.5**		1.5	0.050	ug/L		02/23/17 22:30	02/24/17 14:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.5**		1.5	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
3 & 4 Methylphenol	**6.6**		1.5	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitroaniline	<3.8		3.8	0.99	ug/L		02/23/17 22:30	02/24/17 14:30	1
3-Nitroaniline	<7.7		7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitroaniline	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
Nitrobenzene	<0.77		0.77	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitrophenol	<7.7		7.7	1.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitrophenol	<15		15	5.7	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodiphenylamine	<0.77		0.77	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pentachlorophenol	<15		15	3.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Phenanthrene	**1.3**		0.77	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pyrene	<0.77		0.77	0.33	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,5-Trichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzaldehyde	<31	^	31	12	ug/L		02/23/17 22:30	02/24/17 14:30	1
Caprolactam	<7.7		7.7	1.1	ug/L		02/23/17 22:30	02/24/17 14:30	1
Atrazine	<3.8		3.8	0.48	ug/L		02/23/17 22:30	02/24/17 14:30	1
1,1'-Biphenyl	<3.8		3.8	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*30 - 123*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Nitrobenzene-d5 (Surr)	*67*		*33 - 139*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Phenol-d5 (Surr)	*41*		*20 - 100*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**130**		3.8	1.2	ug/L		02/23/17 22:30	02/24/17 14:58	5
Phenol	**72**		19	2.6	ug/L		02/23/17 22:30	02/24/17 14:58	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/17/17 21:00	02/20/17 23:54	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/17/17 21:00	02/20/17 23:54	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/17/17 21:00	02/20/17 23:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/17/17 21:00	02/20/17 23:54	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:54*	*1*
Tetrachloro-m-xylene	*73*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/17/17 21:00	02/20/17 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:33*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:33*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.34**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 20:57	1
Antimony	**0.0068**	**J**	0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:57	1
Arsenic	**0.0038**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Barium	**0.46**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:57	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 20:57	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:57	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 20:57	1
Lead	**0.0027**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:57	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 20:57	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:57	1
Potassium	**51**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 20:57	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:57	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 20:57	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:57	1
Zinc	**0.012**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.21**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:01	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:01	1
Arsenic	**0.0046**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:01	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:01	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:01	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:01	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:01	1
Magnesium	<0.10		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:01	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:01	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:01	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:01	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:01	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:01	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.98**	**J**	1.0	0.18	mg/L			02/21/17 07:42	1
Sulfate	**24**	**B**	5.0	1.5	mg/L			03/02/17 07:12	1
Total Organic Carbon - Duplicates	**31**		1.0	0.27	mg/L			02/17/17 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**29**		5.0	2.5	mg/L			02/17/17 13:14	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:17	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			02/23/17 05:09	10
Benzene	**410**		5.0	1.5	ug/L			02/23/17 05:09	10
Bromodichloromethane	<10		10	3.7	ug/L			02/23/17 05:09	10
Bromoform	<10		10	4.8	ug/L			02/23/17 05:09	10
Bromomethane	<20		20	8.0	ug/L			02/23/17 05:09	10
Carbon disulfide	<20		20	4.5	ug/L			02/23/17 05:09	10
Carbon tetrachloride	<10		10	3.8	ug/L			02/23/17 05:09	10
Chlorobenzene	<10		10	3.9	ug/L			02/23/17 05:09	10
Chloroethane	<10		10	5.1	ug/L			02/23/17 05:09	10
Chloroform	<20		20	3.7	ug/L			02/23/17 05:09	10
Chloromethane	<10		10	3.2	ug/L			02/23/17 05:09	10
cis-1,2-Dichloroethene	**37**		10	4.1	ug/L			02/23/17 05:09	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			02/23/17 05:09	10
Cyclohexane	<10		10	4.9	ug/L			02/23/17 05:09	10
Dibromochloromethane	<10		10	4.9	ug/L			02/23/17 05:09	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			02/23/17 05:09	10
1,2-Dibromoethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichlorobenzene	**18**		10	3.3	ug/L			02/23/17 05:09	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			02/23/17 05:09	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			02/23/17 05:09	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			02/23/17 05:09	10
1,1-Dichloroethane	<10		10	4.1	ug/L			02/23/17 05:09	10
1,2-Dichloroethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1-Dichloroethene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichloropropane	<10		10	4.3	ug/L			02/23/17 05:09	10
Ethylbenzene	**1300**		5.0	1.8	ug/L			02/23/17 05:09	10
2-Hexanone	<50		50	16	ug/L			02/23/17 05:09	10
Isopropylbenzene	**100**		10	3.9	ug/L			02/23/17 05:09	10
Methyl acetate	<50		50	20	ug/L			02/23/17 05:09	10
Methylcyclohexane	<10		10	3.2	ug/L			02/23/17 05:09	10
Methylene Chloride	<50		50	16	ug/L			02/23/17 05:09	10
Methyl Ethyl Ketone	<50		50	21	ug/L			02/23/17 05:09	10
methyl isobutyl ketone	<50		50	22	ug/L			02/23/17 05:09	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			02/23/17 05:09	10
Styrene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			02/23/17 05:09	10
Tetrachloroethene	<10		10	3.7	ug/L			02/23/17 05:09	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			02/23/17 05:09	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			02/23/17 05:09	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			02/23/17 05:09	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			02/23/17 05:09	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			02/23/17 05:09	10
Trichloroethene	<5.0		5.0	1.6	ug/L			02/23/17 05:09	10
Trichlorofluoromethane	<10		10	4.3	ug/L			02/23/17 05:09	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			02/23/17 05:09	10
Vinyl chloride	**11**		5.0	2.0	ug/L			02/23/17 05:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/23/17 05:09*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	93		70 - 120		02/23/17 05:09	10
1,2-Dichloroethane-d4 (Surr)	100		71 - 127		02/23/17 05:09	10
Toluene-d8 (Surr)	101		75 - 120		02/23/17 05:09	10

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**2600**		50	15	ug/L			02/23/17 05:36	100
Xylenes, Total	**8400**		100	22	ug/L			02/23/17 05:36	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		71 - 120		02/23/17 05:36	100
Dibromofluoromethane	91		70 - 120		02/23/17 05:36	100
1,2-Dichloroethane-d4 (Surr)	99		71 - 127		02/23/17 05:36	100
Toluene-d8 (Surr)	100		75 - 120		02/23/17 05:36	100

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.86**		0.74	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acenaphthylene	**2.3**		0.74	0.20	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acetophenone	**32**		3.7	0.49	ug/L		02/22/17 12:03	02/23/17 00:54	1
Anthracene	**0.29**	**J**	0.74	0.25	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]pyrene	<0.15	*	0.15	0.073	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[b]fluoranthene	<0.15	*	0.15	0.060	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[g,h,i]perylene	<0.74	*	0.74	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[k]fluoranthene	<0.15	*	0.15	0.047	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-ethylhexyl) phthalate	**2.9**	**J**	7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Bromophenyl phenyl ether	<3.7	*	3.7	0.40	ug/L		02/22/17 12:03	02/23/17 00:54	1
Butyl benzyl phthalate	**1.3**	**J**	1.5	0.35	ug/L		02/22/17 12:03	02/23/17 00:54	1
Carbazole	<3.7		3.7	0.26	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/22/17 12:03	02/23/17 00:54	1
Chrysene	<0.15		0.15	0.050	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenz(a,h)anthracene	<0.22	*	0.22	0.037	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/22/17 12:03	02/23/17 00:54	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Diethyl phthalate	**11**		1.5	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dimethylphenol	**42**		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Di-n-butyl phthalate	**3.9**		3.7	0.54	ug/L		02/22/17 12:03	02/23/17 00:54	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/22/17 12:03	02/23/17 00:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluorene	**1.2**		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/22/17 12:03	02/23/17 00:54	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.055	ug/L		02/22/17 12:03	02/23/17 00:54	1
Isophorone	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylnaphthalene	**11**		1.5	0.048	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
3 & 4 Methylphenol	**40**		1.5	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/22/17 12:03	02/23/17 00:54	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/22/17 12:03	02/23/17 00:54	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitrophenol	<15		15	5.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodiphenylamine	**11**		0.74	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pentachlorophenol	<15		15	2.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenanthrene	**0.86**		0.74	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenol	**39**		3.7	0.50	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pyrene	<0.74		0.74	0.31	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,6-Trichlorophenol	**1.3**	**J**	3.7	0.53	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzaldehyde	<30	^	30	11	ug/L		02/22/17 12:03	02/23/17 00:54	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/22/17 12:03	02/23/17 00:54	1
Atrazine	<3.7		3.7	0.46	ug/L		02/22/17 12:03	02/23/17 00:54	1
1,1'-Biphenyl	**2.0**	**J**	3.7	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*30 - 123*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2-Fluorophenol (Surr)	*21*	*X*	*30 - 110*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Terphenyl-d14 (Surr)	*82*		*42 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*30 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**190**		7.4	2.3	ug/L		02/22/17 12:03	02/23/17 01:21	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/21/17 00:13	1
beta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/21/17 00:13	1
delta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/21/17 00:13	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Methoxychlor	<0.076		0.076	0.022	ug/L		02/17/17 21:00	02/21/17 00:13	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:13*	*1*
Tetrachloro-m-xylene	*40*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:48*	*1*
DCB Decachlorobiphenyl	*58*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:07	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:07	1
Arsenic	**0.0074**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Barium	**0.25**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:07	1
Calcium	**100**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:07	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:07	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Iron	**4.8**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:07	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	47		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:07	1
Manganese	0.24		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Nickel	0.014		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:07	1
Potassium	67		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:07	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:07	1
Sodium	230		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:07	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Vanadium	0.0028	J	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:07	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:13	1
Arsenic	0.0070	J	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Barium	0.25		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:13	1
Calcium	100		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:13	1
Chromium	0.0027	J	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cobalt	0.0020	J	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:13	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Iron	4.3		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:13	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:13	1
Magnesium	48		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:13	1
Manganese	0.24		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Nickel	0.014		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:13	1
Potassium	69		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:13	1
Selenium	0.0063	J	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:13	1
Sodium	240		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:13	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Vanadium	0.0025	J	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:13	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.4		1.0	0.18	mg/L			02/21/17 07:44	1
Sulfate	100	B	25	7.4	mg/L			03/02/17 07:13	5
Total Organic Carbon - Duplicates	61	B	2.0	0.53	mg/L			02/21/17 00:31	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**20**		5.0	2.5	mg/L			02/17/17 13:15	1
Ammonia	**57**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:25	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/23/17 18:00	1
Benzene	**81**		0.50	0.15	ug/L			02/23/17 18:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 18:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 18:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 18:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
Chlorobenzene	**11**		1.0	0.39	ug/L			02/23/17 18:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 18:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 18:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 18:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 18:00	1
Cyclohexane	**110**		1.0	0.49	ug/L			02/23/17 18:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 18:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichlorobenzene	**1.2**		1.0	0.33	ug/L			02/23/17 18:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
1,4-Dichlorobenzene	**3.8**		1.0	0.36	ug/L			02/23/17 18:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 18:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
Ethylbenzene	**3.1**		0.50	0.18	ug/L			02/23/17 18:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Isopropylbenzene	**61**		1.0	0.39	ug/L			02/23/17 18:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
Methylcyclohexane	**170**		1.0	0.32	ug/L			02/23/17 18:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 18:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 18:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Toluene	**0.82**		0.50	0.15	ug/L			02/23/17 18:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 18:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 18:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 18:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 18:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 18:00	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/23/17 18:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:00*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/23/17 18:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*71 - 127*		*02/23/17 18:00*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/23/17 18:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.23**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Anthracene	<0.73		0.73	0.25	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 01:49	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 01:49	1
Carbazole	<3.7	*	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 01:49	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/23/17 01:49	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Diethyl phthalate	**0.64**	**J**	1.5	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-butyl phthalate	**0.69**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 01:49	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 01:49	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 01:49	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Methylnaphthalene	**3.7**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 01:49	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
3 & 4 Methylphenol	**3.2**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Naphthalene	**2.4**		0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 01:49	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/23/17 01:49	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodiphenylamine	**1.7**		0.73	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenol	**0.73**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzaldehyde	<29	^	29	11	ug/L		02/20/17 07:25	02/23/17 01:49	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/23/17 01:49	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 01:49	1
1,1'-Biphenyl	**0.99**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*41*		*30 - 123*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Terphenyl-d14 (Surr)	*63*		*42 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2,4,6-Tribromophenol (Surr)	*60*		*30 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/17/17 21:00	02/21/17 00:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/17/17 21:00	02/21/17 00:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/17/17 21:00	02/21/17 00:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/17/17 21:00	02/21/17 00:33	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/17/17 21:00	02/21/17 00:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/21/17 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*60*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:33*	*1*
Tetrachloro-m-xylene	*67*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1260	<0.37		0.37	0.065	ug/L		02/17/17 21:00	02/20/17 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:04*	*1*
DCB Decachlorobiphenyl	*46*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:19	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:19	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:19	1
Chromium	**0.0073**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:19	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Iron	**29**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:19	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:19	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Nickel	**0.020**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:19	1
Potassium	**110**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:19	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:19	1
Sodium	**380**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:19	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Vanadium	**0.0050**		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:19	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:26	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:26	1
Chromium	**0.0076**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Iron	**28**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:26	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:26	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Nickel	**0.019**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:26	1
Potassium	**120**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:26	1
Selenium	**0.0068**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:26	1
Sodium	**390**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Vanadium	**0.0042**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:47	1
Sulfate	**7.2**	**B**	5.0	1.5	mg/L			03/02/17 07:14	1
Total Organic Carbon - Duplicates	**36**		1.0	0.27	mg/L			02/17/17 01:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**100**		5.0	2.5	mg/L			02/17/17 13:16	1
Ammonia	**59**		5.0	2.5	mg/L		02/17/17 19:00	02/17/17 22:28	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**59**		5.0	1.7	ug/L			02/23/17 06:03	1
Benzene	**30**		0.50	0.15	ug/L			02/23/17 06:03	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 06:03	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 06:03	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 06:03	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 06:03	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 06:03	1
Chlorobenzene	**5.7**		1.0	0.39	ug/L			02/23/17 06:03	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 06:03	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 06:03	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 06:03	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 06:03	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 06:03	1
Cyclohexane	**1.5**		1.0	0.49	ug/L			02/23/17 06:03	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 06:03	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 06:03	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichlorobenzene	**1.7**		1.0	0.33	ug/L			02/23/17 06:03	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 06:03	1
1,4-Dichlorobenzene	**3.6**		1.0	0.36	ug/L			02/23/17 06:03	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 06:03	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 06:03	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 06:03	1
Ethylbenzene	**25**		0.50	0.18	ug/L			02/23/17 06:03	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 06:03	1
Isopropylbenzene	**13**		1.0	0.39	ug/L			02/23/17 06:03	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 06:03	1
Methylcyclohexane	**1.9**		1.0	0.32	ug/L			02/23/17 06:03	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 06:03	1
Methyl Ethyl Ketone	**45**		5.0	2.1	ug/L			02/23/17 06:03	1
methyl isobutyl ketone	**99**		5.0	2.2	ug/L			02/23/17 06:03	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 06:03	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 06:03	1
Toluene	**11**		0.50	0.15	ug/L			02/23/17 06:03	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 06:03	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 06:03	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 06:03	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 06:03	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 06:03	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 06:03	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 06:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 06:03	1
Vinyl chloride	**0.45**	**J**	0.50	0.20	ug/L			02/23/17 06:03	1
Xylenes, Total	**24**		1.0	0.22	ug/L			02/23/17 06:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/23/17 06:03*	*1*
Dibromofluoromethane	*9*	*X*	*70 - 120*		*02/23/17 06:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 06:03*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/23/17 06:03*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.74	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acetophenone	**1.4**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 02:16	1
Anthracene	<0.74		0.74	0.25	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 02:16	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 02:16	1
Carbazole	**4.3**	*****	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 02:16	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenzofuran	**1.3**	**J**	1.5	0.19	ug/L		02/20/17 07:25	02/23/17 02:16	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dimethylphenol	**5.5**	**J**	7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-butyl phthalate	**0.75**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 02:16	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluorene	**2.4**		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 02:16	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 02:16	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Methylnaphthalene	**4.3**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 02:16	1

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	**J**	1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
3 & 4 Methylphenol	**6.3**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 02:16	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/20/17 07:25	02/23/17 02:16	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Phenanthrene	**1.2**		0.74	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pyrene	<0.74		0.74	0.31	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzaldehyde	<30	^	30	11	ug/L		02/20/17 07:25	02/23/17 02:16	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/20/17 07:25	02/23/17 02:16	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 02:16	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*37*		*30 - 123*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2-Fluorophenol (Surr)	*41*		*30 - 110*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Nitrobenzene-d5 (Surr)	*33*		*33 - 139*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Phenol-d5 (Surr)	*40*		*20 - 100*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Terphenyl-d14 (Surr)	*71*		*42 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*30 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**120**		3.7	1.1	ug/L		02/20/17 07:25	02/24/17 15:56	5
Phenol	**96**		18	2.5	ug/L		02/20/17 07:25	02/24/17 15:56	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0050	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-BHC	<0.038		0.038	0.0024	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-Chlordane	<0.038		0.038	0.0041	ug/L		02/17/17 21:00	02/21/17 00:52	1
beta-BHC	<0.038		0.038	0.0096	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDT	<0.038		0.038	0.0030	ug/L		02/17/17 21:00	02/21/17 00:52	1
delta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:52	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan II	<0.038		0.038	0.0026	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin aldehyde	<0.038		0.038	0.0077	ug/L		02/17/17 21:00	02/21/17 00:52	1

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-Chlordane	<0.038		0.038	0.0068	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Methoxychlor	<0.075		0.075	0.022	ug/L		02/17/17 21:00	02/21/17 00:52	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:52*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.063	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1260	<0.38		0.38	0.066	ug/L		02/17/17 21:00	02/20/17 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:19*	*1*
DCB Decachlorobiphenyl	*70*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.33**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:31	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:31	1
Arsenic	**0.0066**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:31	1
Calcium	**500**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:31	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:31	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Iron	**0.12**	**J**	0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:31	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:31	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:31	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Nickel	**0.015**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:31	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:31	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:31	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:31	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Vanadium	**0.0020**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:31	1
Zinc	**0.010**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.22**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:35	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:35	1
Arsenic	**0.0048**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Barium	**0.47**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:35	1
Calcium	**530**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:35	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:35	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:35	1
Magnesium	**0.043**	**J**	0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:35	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:35	1
Potassium	**52**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:35	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:35	1
Sodium	**220**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:35	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Vanadium	**0.0021**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 11:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.5**		1.0	0.18	mg/L			02/21/17 07:50	1
Sulfate	**22**	**B**	5.0	1.5	mg/L			03/02/17 07:15	1
Total Organic Carbon - Duplicates	**30**		1.0	0.27	mg/L			02/17/17 02:00	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/17/17 13:18	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 23:33	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:46	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:19	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
X	Surrogate is outside control limits
*	ISTD response or retention time outside acceptable limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

GC/MS VOA

Analysis Batch: 373092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8260B	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8260B	
500-123998-4 - DL	MW-13-GW-02162017	Total/NA	Water	8260B	
500-123998-6	DUP-1-02162017	Total/NA	Water	8260B	
MB 500-373092/6	Method Blank	Total/NA	Water	8260B	
LCS 500-373092/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 373192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8260B	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8260B	
500-123998-2 - DL	MW-02-GW-02152017	Total/NA	Water	8260B	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8260B	
MB 500-373192/6	Method Blank	Total/NA	Water	8260B	
LCS 500-373192/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 372692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1 - DL	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-1 - DL2	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-1	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-2 - DL	MW-02-GW-02152017	Total/NA	Water	3510C	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	3510C	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	3510C	
500-123998-6	DUP-1-02162017	Total/NA	Water	3510C	
500-123998-6 - DL	DUP-1-02162017	Total/NA	Water	3510C	
MB 500-372692/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8270D	372692
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8270D	372692
MB 500-372692/1-A	Method Blank	Total/NA	Water	8270D	372692
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	8270D	372692
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	372692

Prep Batch: 373020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-4	MW-13-GW-02162017	Total/NA	Water	3510C	
500-123998-4 - DL	MW-13-GW-02162017	Total/NA	Water	3510C	
MB 500-373020/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-373020/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 373146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1 - DL	MW-03-GW-02152017	Total/NA	Water	8270D	372692

GC/MS Semi VOA (Continued)

Analysis Batch: 373146 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-2 - DL	MW-02-GW-02152017	Total/NA	Water	8270D	372692
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8270D	373020
500-123998-4 - DL	MW-13-GW-02162017	Total/NA	Water	8270D	373020
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8270D	372692
500-123998-6	DUP-1-02162017	Total/NA	Water	8270D	372692
MB 500-373020/1-A	Method Blank	Total/NA	Water	8270D	373020
LCS 500-373020/2-A	Lab Control Sample	Total/NA	Water	8270D	373020

Prep Batch: 373345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-3 - DL	MW-01-GW-02162017	Total/NA	Water	3510C	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	3510C	
MB 500-373345/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-373345/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-373345/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 373397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1 - DL2	MW-03-GW-02152017	Total/NA	Water	8270D	372692
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8270D	373345
500-123998-3 - DL	MW-01-GW-02162017	Total/NA	Water	8270D	373345
500-123998-6 - DL	DUP-1-02162017	Total/NA	Water	8270D	372692
MB 500-373345/1-A	Method Blank	Total/NA	Water	8270D	373345
LCS 500-373345/2-A	Lab Control Sample	Total/NA	Water	8270D	373345
LCSD 500-373345/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	373345

GC Semi VOA

Prep Batch: 372591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	3510C	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	3510C	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	3510C	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	3510C	
500-123998-6	DUP-1-02162017	Total/NA	Water	3510C	
MB 500-372591/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372591/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-372591/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372591/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-372591/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8082A	372591
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8082A	372591
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8082A	372591
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8082A	372591
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8082A	372591
500-123998-6	DUP-1-02162017	Total/NA	Water	8082A	372591

GC Semi VOA (Continued)

Analysis Batch: 372765 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-372591/1-A	Method Blank	Total/NA	Water	8082A	372591
LCS 500-372591/4-A	Lab Control Sample	Total/NA	Water	8082A	372591
LCSD 500-372591/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	372591

Analysis Batch: 372801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8081B	372591
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8081B	372591
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8081B	372591
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8081B	372591
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8081B	372591
500-123998-6	DUP-1-02162017	Total/NA	Water	8081B	372591
MB 500-372591/1-A	Method Blank	Total/NA	Water	8081B	372591
LCS 500-372591/2-A	Lab Control Sample	Total/NA	Water	8081B	372591
LCSD 500-372591/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	372591

Metals

Prep Batch: 372467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	3010A	
500-123998-1	MW-03-GW-02152017	Total/NA	Water	3010A	
500-123998-2	MW-02-GW-02152017	Dissolved	Water	3010A	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	3010A	
500-123998-3	MW-01-GW-02162017	Dissolved	Water	3010A	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	3010A	
500-123998-4	MW-13-GW-02162017	Dissolved	Water	3010A	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	3010A	
500-123998-5	MW-11-GW-02162017	Dissolved	Water	3010A	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	3010A	
500-123998-6	DUP-1-02162017	Dissolved	Water	3010A	
500-123998-6	DUP-1-02162017	Total/NA	Water	3010A	
MB 500-372467/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-372467/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 372526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	7470A	
500-123998-1	MW-03-GW-02152017	Total/NA	Water	7470A	
500-123998-2	MW-02-GW-02152017	Dissolved	Water	7470A	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	7470A	
500-123998-3	MW-01-GW-02162017	Dissolved	Water	7470A	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	7470A	
500-123998-4	MW-13-GW-02162017	Dissolved	Water	7470A	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	7470A	
500-123998-5	MW-11-GW-02162017	Dissolved	Water	7470A	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	7470A	
500-123998-6	DUP-1-02162017	Dissolved	Water	7470A	
500-123998-6	DUP-1-02162017	Total/NA	Water	7470A	
MB 500-372526/12-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 372526 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-372526/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-123998-1 MS	MW-03-GW-02152017	Total/NA	Water	7470A	
500-123998-1 MSD	MW-03-GW-02152017	Total/NA	Water	7470A	
500-123998-1 DU	MW-03-GW-02152017	Total/NA	Water	7470A	

Analysis Batch: 372785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	7470A	372526
500-123998-1	MW-03-GW-02152017	Total/NA	Water	7470A	372526
500-123998-2	MW-02-GW-02152017	Dissolved	Water	7470A	372526
500-123998-2	MW-02-GW-02152017	Total/NA	Water	7470A	372526
500-123998-3	MW-01-GW-02162017	Dissolved	Water	7470A	372526
500-123998-3	MW-01-GW-02162017	Total/NA	Water	7470A	372526
500-123998-4	MW-13-GW-02162017	Dissolved	Water	7470A	372526
500-123998-4	MW-13-GW-02162017	Total/NA	Water	7470A	372526
500-123998-5	MW-11-GW-02162017	Dissolved	Water	7470A	372526
500-123998-5	MW-11-GW-02162017	Total/NA	Water	7470A	372526
500-123998-6	DUP-1-02162017	Dissolved	Water	7470A	372526
500-123998-6	DUP-1-02162017	Total/NA	Water	7470A	372526
MB 500-372526/12-A	Method Blank	Total/NA	Water	7470A	372526
LCS 500-372526/13-A	Lab Control Sample	Total/NA	Water	7470A	372526
500-123998-1 MS	MW-03-GW-02152017	Total/NA	Water	7470A	372526
500-123998-1 MSD	MW-03-GW-02152017	Total/NA	Water	7470A	372526
500-123998-1 DU	MW-03-GW-02152017	Total/NA	Water	7470A	372526

Analysis Batch: 373052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	6010C	372467
500-123998-1	MW-03-GW-02152017	Total/NA	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Dissolved	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Total/NA	Water	6010C	372467
500-123998-3	MW-01-GW-02162017	Dissolved	Water	6010C	372467
500-123998-3	MW-01-GW-02162017	Total/NA	Water	6010C	372467
500-123998-4	MW-13-GW-02162017	Dissolved	Water	6010C	372467
500-123998-4	MW-13-GW-02162017	Total/NA	Water	6010C	372467
500-123998-5	MW-11-GW-02162017	Dissolved	Water	6010C	372467
500-123998-5	MW-11-GW-02162017	Total/NA	Water	6010C	372467
500-123998-6	DUP-1-02162017	Dissolved	Water	6010C	372467
500-123998-6	DUP-1-02162017	Total/NA	Water	6010C	372467
MB 500-372467/1-A	Method Blank	Total/NA	Water	6010C	372467
LCS 500-372467/2-A	Lab Control Sample	Total/NA	Water	6010C	372467

Analysis Batch: 373200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	6010C	372467
500-123998-1	MW-03-GW-02152017	Total/NA	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Dissolved	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Total/NA	Water	6010C	372467
MB 500-372467/1-A	Method Blank	Total/NA	Water	6010C	372467
LCS 500-372467/2-A	Lab Control Sample	Total/NA	Water	6010C	372467

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

General Chemistry

Analysis Batch: 372536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NO2 B	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NO2 B	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NO2 B	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NO2 B	
MB 500-372536/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-372536/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 372543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 2540D	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 2540D	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 2540D	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 2540D	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 2540D	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 2540D	
MB 500-372543/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-372543/2	Lab Control Sample	Total/NA	Water	SM 2540D	
500-123998-1 MS	MW-03-GW-02152017	Total/NA	Water	SM 2540D	
500-123998-1 DU	MW-03-GW-02152017	Total/NA	Water	SM 2540D	

Prep Batch: 372578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NH3 B	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NH3 B	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NH3 B	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NH3 B	
MB 500-372578/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-372578/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 372593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	9060A	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	9060A	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	9060A	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	9060A	
500-123998-6	DUP-1-02162017	Total/NA	Water	9060A	
MB 500-372593/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372593/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 372597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NH3 G	372578

General Chemistry (Continued)

Analysis Batch: 372597 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-372578/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	372578
LCS 500-372578/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	372578

Analysis Batch: 372665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NO3 F	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NO3 F	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NO3 F	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NO3 F	
MB 500-372665/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-372665/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 372666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	Nitrate by calc	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	Nitrate by calc	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	Nitrate by calc	
500-123998-6	DUP-1-02162017	Total/NA	Water	Nitrate by calc	

Analysis Batch: 372856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	9034	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	9034	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	9034	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	9034	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	9034	
500-123998-6	DUP-1-02162017	Total/NA	Water	9034	
MB 500-372856/1	Method Blank	Total/NA	Water	9034	
LCS 500-372856/2	Lab Control Sample	Total/NA	Water	9034	

Analysis Batch: 372960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-4	MW-13-GW-02162017	Total/NA	Water	9060A	
MB 500-372960/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372960/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 374123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	9038	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	9038	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	9038	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	9038	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	9038	
500-123998-6	DUP-1-02162017	Total/NA	Water	9038	
MB 500-374123/3	Method Blank	Total/NA	Water	9038	
LCS 500-374123/4	Lab Control Sample	Total/NA	Water	9038	
500-123998-2 MS	MW-02-GW-02152017	Total/NA	Water	9038	

General Chemistry (Continued)

Analysis Batch: 374123 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-2 MSD	MW-02-GW-02152017	Total/NA	Water	9038	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-123998-1	MW-03-GW-02152017	95	93	100	99
500-123998-2	MW-02-GW-02152017	96	93	101	98
500-123998-2 - DL	MW-02-GW-02152017	96	95	103	99
500-123998-3	MW-01-GW-02162017	100	92	99	101
500-123998-4	MW-13-GW-02162017	99	93	100	101
500-123998-4 - DL	MW-13-GW-02162017	97	91	99	100
500-123998-5	MW-11-GW-02162017	95	94	101	98
500-123998-6	DUP-1-02162017	97	9 X	100	100
LCS 500-373092/4	Lab Control Sample	95	97	100	99
LCS 500-373192/4	Lab Control Sample	93	93	96	101
MB 500-373092/6	Method Blank	97	95	100	98
MB 500-373192/6	Method Blank	96	92	99	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-123998-1	MW-03-GW-02152017	59	66	70	50	96	96
500-123998-1 - DL	MW-03-GW-02152017	76	76	81	61	108	116
500-123998-1 - DL2	MW-03-GW-02152017	0 D	0 D	0 D	0 D	0 D	0 D
500-123998-2	MW-02-GW-02152017	62	63	62	54	99	99
500-123998-2 - DL	MW-02-GW-02152017	79	72	85	65	109	119
500-123998-3	MW-01-GW-02162017	71	58	67	41	96	105
500-123998-3 - DL	MW-01-GW-02162017	90	64	79	45	114	110
500-123998-4	MW-13-GW-02162017	68	21 X	69	46	82	95
500-123998-4 - DL	MW-13-GW-02162017	89	72	85	53	96	116
500-123998-5	MW-11-GW-02162017	41	51	59	46	63	60
500-123998-6	DUP-1-02162017	37	41	33	40	71	78
500-123998-6 - DL	DUP-1-02162017	43	52	35	45	87	84
LCS 500-372692/2-A	Lab Control Sample	77	70	75	56	87	88
LCS 500-373020/2-A	Lab Control Sample	61	59	69	54	85	83
LCS 500-373345/2-A	Lab Control Sample	91	77	94	54	112	112
LCSD 500-372692/3-A	Lab Control Sample Dup	83	78	84	61	105	101
LCSD 500-373345/3-A	Lab Control Sample Dup	84	79	90	57	108	101
MB 500-372692/1-A	Method Blank	79	69	78	57	100	72
MB 500-373020/1-A	Method Blank	65	66	78	59	94	75
MB 500-373345/1-A	Method Blank	81	63	85	45	102	86

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-123998-1	MW-03-GW-02152017	76	105
500-123998-2	MW-02-GW-02152017	73	117
500-123998-3	MW-01-GW-02162017	79	73
500-123998-4	MW-13-GW-02162017	47	40
500-123998-5	MW-11-GW-02162017	60	67
500-123998-6	DUP-1-02162017	79	66
LCS 500-372591/2-A	Lab Control Sample	96	60
LCSD 500-372591/3-A	Lab Control Sample Dup	105	67
MB 500-372591/1-A	Method Blank	112	78

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(30-127)	(30-150)
500-123998-1	MW-03-GW-02152017	53	62
500-123998-2	MW-02-GW-02152017	79	72
500-123998-3	MW-01-GW-02162017	70	65
500-123998-4	MW-13-GW-02162017	105	58
500-123998-5	MW-11-GW-02162017	87	46
500-123998-6	DUP-1-02162017	66	70
LCS 500-372591/4-A	Lab Control Sample	80	95
LCSD 500-372591/5-A	Lab Control Sample Dup	86	95
MB 500-372591/1-A	Method Blank	94	102

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-373092/6
Matrix: Water
Analysis Batch: 373092

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/22/17 22:53	1
Benzene	<0.50		0.50	0.15	ug/L			02/22/17 22:53	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/22/17 22:53	1
Bromoform	<1.0		1.0	0.48	ug/L			02/22/17 22:53	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/22/17 22:53	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/22/17 22:53	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/22/17 22:53	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/22/17 22:53	1
Chloroform	<2.0		2.0	0.37	ug/L			02/22/17 22:53	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/22/17 22:53	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/22/17 22:53	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/22/17 22:53	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/22/17 22:53	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/22/17 22:53	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/22/17 22:53	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/22/17 22:53	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/22/17 22:53	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/22/17 22:53	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/22/17 22:53	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/22/17 22:53	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/22/17 22:53	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/22/17 22:53	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/22/17 22:53	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/22/17 22:53	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/22/17 22:53	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/22/17 22:53	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/22/17 22:53	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/22/17 22:53	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
Styrene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/22/17 22:53	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/22/17 22:53	1
Toluene	<0.50		0.50	0.15	ug/L			02/22/17 22:53	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/22/17 22:53	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/22/17 22:53	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/22/17 22:53	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/22/17 22:53	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/22/17 22:53	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/22/17 22:53	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/22/17 22:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/22/17 22:53	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/22/17 22:53	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/22/17 22:53	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		71 - 120		02/22/17 22:53	1
Dibromofluoromethane	95		70 - 120		02/22/17 22:53	1
1,2-Dichloroethane-d4 (Surr)	100		71 - 127		02/22/17 22:53	1
Toluene-d8 (Surr)	98		75 - 120		02/22/17 22:53	1

Lab Sample ID: LCS 500-373092/4
Matrix: Water
Analysis Batch: 373092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.1		ug/L		78	37 - 141
Benzene	50.0	41.1		ug/L		82	70 - 125
Bromodichloromethane	50.0	41.9		ug/L		84	70 - 125
Bromoform	50.0	40.0		ug/L		80	54 - 128
Bromomethane	50.0	36.5		ug/L		73	40 - 150
Carbon disulfide	50.0	37.8		ug/L		76	68 - 125
Carbon tetrachloride	50.0	39.4		ug/L		79	70 - 125
Chlorobenzene	50.0	42.6		ug/L		85	70 - 125
Chloroethane	50.0	35.2		ug/L		70	60 - 139
Chloroform	50.0	41.4		ug/L		83	70 - 125
Chloromethane	50.0	38.6		ug/L		77	60 - 140
cis-1,2-Dichloroethene	50.0	41.3		ug/L		83	70 - 125
cis-1,3-Dichloropropene	50.0	42.5		ug/L		85	70 - 125
Cyclohexane	50.0	40.7		ug/L		81	56 - 149
Dibromochloromethane	50.0	42.6		ug/L		85	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	40.2		ug/L		80	51 - 125
1,2-Dibromoethane	50.0	44.8		ug/L		90	70 - 125
1,2-Dichlorobenzene	50.0	44.1		ug/L		88	70 - 125
1,3-Dichlorobenzene	50.0	43.3		ug/L		87	70 - 125
1,4-Dichlorobenzene	50.0	42.7		ug/L		85	70 - 125
Dichlorodifluoromethane	50.0	33.4		ug/L		67	51 - 140
1,1-Dichloroethane	50.0	40.4		ug/L		81	70 - 125
1,2-Dichloroethane	50.0	42.9		ug/L		86	70 - 125
1,1-Dichloroethene	50.0	39.3		ug/L		79	70 - 125
1,2-Dichloropropane	50.0	41.4		ug/L		83	70 - 125
Ethylbenzene	50.0	43.5		ug/L		87	70 - 125
2-Hexanone	50.0	42.8		ug/L		86	49 - 139
Isopropylbenzene	50.0	42.6		ug/L		85	70 - 125
Methyl acetate	250	215		ug/L		86	60 - 148
Methylcyclohexane	50.0	40.1		ug/L		80	70 - 127
Methylene Chloride	50.0	41.4		ug/L		83	68 - 125
Methyl Ethyl Ketone	50.0	37.9		ug/L		76	52 - 142
methyl isobutyl ketone	50.0	43.2		ug/L		86	47 - 140
Methyl tert-butyl ether	50.0	42.3		ug/L		85	67 - 125
Styrene	50.0	42.7		ug/L		85	70 - 125
1,1,2,2-Tetrachloroethane	50.0	43.7		ug/L		87	68 - 125
Tetrachloroethene	50.0	42.8		ug/L		86	70 - 125
Toluene	50.0	42.9		ug/L		86	70 - 125
trans-1,2-Dichloroethene	50.0	40.3		ug/L		81	70 - 125
trans-1,3-Dichloropropene	50.0	41.2		ug/L		82	70 - 125
1,2,4-Trichlorobenzene	50.0	41.5		ug/L		83	64 - 126
1,1,1-Trichloroethane	50.0	40.7		ug/L		81	70 - 125
1,1,2-Trichloroethane	50.0	44.1		ug/L		88	70 - 125
Trichloroethene	50.0	40.6		ug/L		81	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373092/4
Matrix: Water
Analysis Batch: 373092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	43.3		ug/L		87	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	40.6		ug/L		81	57 - 141
Vinyl chloride	50.0	41.0		ug/L		82	70 - 126
Xylenes, Total	100	84.6		ug/L		85	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*
Toluene-d8 (Surr)	*99*		*75 - 120*

Lab Sample ID: MB 500-373192/6
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/23/17 10:24	1
Benzene	<0.50		0.50	0.15	ug/L			02/23/17 10:24	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 10:24	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 10:24	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 10:24	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 10:24	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 10:24	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 10:24	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 10:24	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 10:24	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 10:24	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 10:24	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/23/17 10:24	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 10:24	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 10:24	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/23/17 10:24	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 10:24	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/23/17 10:24	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 10:24	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 10:24	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 10:24	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/23/17 10:24	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 10:24	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 10:24	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/23/17 10:24	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 10:24	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373192/6
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 10:24	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 10:24	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 10:24	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 10:24	1
Toluene	<0.50		0.50	0.15	ug/L			02/23/17 10:24	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 10:24	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 10:24	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 10:24	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 10:24	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 10:24	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 10:24	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 10:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 10:24	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 10:24	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/23/17 10:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/23/17 10:24*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*02/23/17 10:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 10:24*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 10:24*	*1*

Lab Sample ID: LCS 500-373192/4
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	34.4		ug/L		69	37 - 141
Benzene	50.0	44.7		ug/L		89	70 - 125
Bromodichloromethane	50.0	43.5		ug/L		87	70 - 125
Bromoform	50.0	41.0		ug/L		82	54 - 128
Bromomethane	50.0	43.7		ug/L		87	40 - 150
Carbon disulfide	50.0	42.8		ug/L		86	68 - 125
Carbon tetrachloride	50.0	44.7		ug/L		89	70 - 125
Chlorobenzene	50.0	46.0		ug/L		92	70 - 125
Chloroethane	50.0	47.6		ug/L		95	60 - 139
Chloroform	50.0	44.7		ug/L		89	70 - 125
Chloromethane	50.0	52.1		ug/L		104	60 - 140
cis-1,2-Dichloroethene	50.0	44.4		ug/L		89	70 - 125
cis-1,3-Dichloropropene	50.0	45.1		ug/L		90	70 - 125
Cyclohexane	50.0	47.6		ug/L		95	56 - 149
Dibromochloromethane	50.0	45.1		ug/L		90	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	39.1		ug/L		78	51 - 125
1,2-Dibromoethane	50.0	46.1		ug/L		92	70 - 125
1,2-Dichlorobenzene	50.0	45.7		ug/L		91	70 - 125
1,3-Dichlorobenzene	50.0	46.0		ug/L		92	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373192/4
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	45.4		ug/L		91	70 - 125
Dichlorodifluoromethane	50.0	49.0		ug/L		98	51 - 140
1,1-Dichloroethane	50.0	44.4		ug/L		89	70 - 125
1,2-Dichloroethane	50.0	44.7		ug/L		89	70 - 125
1,1-Dichloroethene	50.0	46.2		ug/L		92	70 - 125
1,2-Dichloropropane	50.0	44.7		ug/L		89	70 - 125
Ethylbenzene	50.0	49.3		ug/L		99	70 - 125
2-Hexanone	50.0	43.9		ug/L		88	49 - 139
Isopropylbenzene	50.0	47.2		ug/L		94	70 - 125
Methyl acetate	250	216		ug/L		86	60 - 148
Methylcyclohexane	50.0	47.3		ug/L		95	70 - 127
Methylene Chloride	50.0	44.0		ug/L		88	68 - 125
Methyl Ethyl Ketone	50.0	37.7		ug/L		75	52 - 142
methyl isobutyl ketone	50.0	45.4		ug/L		91	47 - 140
Methyl tert-butyl ether	50.0	43.9		ug/L		88	67 - 125
Styrene	50.0	46.5		ug/L		93	70 - 125
1,1,2,2-Tetrachloroethane	50.0	44.6		ug/L		89	68 - 125
Tetrachloroethene	50.0	49.8		ug/L		100	70 - 125
Toluene	50.0	47.8		ug/L		96	70 - 125
trans-1,2-Dichloroethene	50.0	44.9		ug/L		90	70 - 125
trans-1,3-Dichloropropene	50.0	43.5		ug/L		87	70 - 125
1,2,4-Trichlorobenzene	50.0	39.8		ug/L		80	64 - 126
1,1,1-Trichloroethane	50.0	44.4		ug/L		89	70 - 125
1,1,2-Trichloroethane	50.0	47.0		ug/L		94	70 - 125
Trichloroethene	50.0	45.8		ug/L		92	70 - 125
Trichlorofluoromethane	50.0	53.8		ug/L		108	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	47.9		ug/L		96	57 - 141
Vinyl chloride	50.0	52.9		ug/L		106	70 - 126
Xylenes, Total	100	94.0		ug/L		94	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*93*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*
Toluene-d8 (Surr)	*101*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/20/17 07:25	02/21/17 20:59	1
Anthracene	<0.80		0.80	0.27	ug/L		02/20/17 07:25	02/21/17 20:59	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/20/17 07:25	02/21/17 20:59	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/20/17 07:25	02/21/17 20:59	1
Carbazole	<4.0		4.0	0.28	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/20/17 07:25	02/21/17 20:59	1
Chrysene	<0.16		0.16	0.055	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/20/17 07:25	02/21/17 20:59	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluorene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/20/17 07:25	02/21/17 20:59	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/20/17 07:25	02/21/17 20:59	1
Isophorone	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/20/17 07:25	02/21/17 20:59	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitrophenol	<16		16	5.9	ug/L		02/20/17 07:25	02/21/17 20:59	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/20/17 07:25	02/21/17 20:59	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pentachlorophenol	<16		16	3.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenol	<4.0		4.0	0.54	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pyrene	<0.80		0.80	0.34	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzaldehyde	<32	^	32	12	ug/L		02/20/17 07:25	02/21/17 20:59	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Atrazine	<4.0		4.0	0.50	ug/L		02/20/17 07:25	02/21/17 20:59	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*30 - 123*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*30 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	36.0	27.7		ug/L		77	41 - 112
Acenaphthylene	36.0	28.2		ug/L		78	48 - 110
Acetophenone	36.0	25.9		ug/L		72	54 - 116
Anthracene	36.0	27.9		ug/L		78	65 - 118
Benzo[a]anthracene	36.0	29.7		ug/L		83	69 - 121
Benzo[a]pyrene	36.0	31.4		ug/L		87	69 - 130
Benzo[b]fluoranthene	36.0	33.6		ug/L		93	66 - 133
Benzo[g,h,i]perylene	36.0	31.0		ug/L		86	47 - 145
Benzo[k]fluoranthene	36.0	32.7		ug/L		91	64 - 134
Bis(2-chloroethoxy)methane	36.0	27.4		ug/L		76	55 - 115
Bis(2-chloroethyl)ether	36.0	27.1		ug/L		75	46 - 110
Bis(2-ethylhexyl) phthalate	36.0	33.3		ug/L		93	60 - 132
4-Bromophenyl phenyl ether	36.0	26.8		ug/L		74	60 - 124
Butyl benzyl phthalate	36.0	31.0		ug/L		86	63 - 127
Carbazole	36.0	46.5		ug/L		129	71 - 132
4-Chloroaniline	36.0	26.7		ug/L		74	15 - 125
4-Chloro-3-methylphenol	36.0	28.5		ug/L		79	63 - 120
2-Chloronaphthalene	36.0	26.9		ug/L		75	38 - 110
2-Chlorophenol	36.0	25.8		ug/L		72	49 - 110
4-Chlorophenyl phenyl ether	36.0	27.2		ug/L		76	55 - 115
Chrysene	36.0	29.2		ug/L		81	70 - 126

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibenz(a,h)anthracene	36.0	30.7		ug/L		85	59 - 145
Dibenzofuran	36.0	27.7		ug/L		77	54 - 111
3,3'-Dichlorobenzidine	36.0	39.2		ug/L		109	57 - 145
2,4-Dichlorophenol	36.0	27.2		ug/L		76	53 - 123
Diethyl phthalate	36.0	30.1		ug/L		84	64 - 126
2,4-Dimethylphenol	36.0	22.5		ug/L		62	42 - 115
Dimethyl phthalate	36.0	31.3		ug/L		87	66 - 120
Di-n-butyl phthalate	36.0	30.6		ug/L		85	67 - 125
4,6-Dinitro-2-methylphenol	72.0	63.9		ug/L		89	34 - 152
2,4-Dinitrophenol	72.0	62.6		ug/L		87	20 - 140
2,4-Dinitrotoluene	36.0	31.7		ug/L		88	67 - 131
2,6-Dinitrotoluene	36.0	32.1		ug/L		89	66 - 125
Di-n-octyl phthalate	36.0	33.7		ug/L		94	63 - 133
Fluoranthene	36.0	28.8		ug/L		80	68 - 127
Fluorene	36.0	27.5		ug/L		76	54 - 113
Hexachlorobenzene	36.0	26.3		ug/L		73	63 - 127
Hexachlorobutadiene	36.0	17.4		ug/L		48	20 - 110
Hexachlorocyclopentadiene	36.0	14.9	J	ug/L		42	10 - 110
Hexachloroethane	36.0	18.7		ug/L		52	20 - 110
Indeno[1,2,3-cd]pyrene	36.0	30.1		ug/L		84	52 - 150
Isophorone	36.0	26.9		ug/L		75	55 - 120
2-Methylnaphthalene	36.0	23.3		ug/L		65	32 - 110
2-Methylphenol	36.0	25.3		ug/L		70	49 - 113
3 & 4 Methylphenol	36.0	25.2		ug/L		70	49 - 114
Naphthalene	36.0	23.3		ug/L		65	32 - 110
2-Nitroaniline	36.0	31.1		ug/L		86	61 - 126
3-Nitroaniline	36.0	34.1		ug/L		95	42 - 134
4-Nitroaniline	36.0	43.4		ug/L		121	40 - 142
Nitrobenzene	36.0	26.3		ug/L		73	49 - 116
2-Nitrophenol	36.0	28.3		ug/L		79	51 - 120
4-Nitrophenol	72.0	39.2		ug/L		54	21 - 110
N-Nitrosodi-n-propylamine	36.0	25.8		ug/L		72	52 - 122
N-Nitrosodiphenylamine	36.0	29.9		ug/L		83	63 - 117
2,2'-oxybis[1-chloropropane]	36.0	23.1		ug/L		64	34 - 110
Pentachlorophenol	72.0	49.0		ug/L		68	29 - 138
Phenanthrene	36.0	28.2		ug/L		78	63 - 121
Phenol	36.0	21.6		ug/L		60	33 - 100
Pyrene	36.0	28.5		ug/L		79	65 - 122
2,4,5-Trichlorophenol	36.0	30.0		ug/L		83	63 - 121
2,4,6-Trichlorophenol	36.0	30.4		ug/L		84	61 - 120
Caprolactam	36.0	17.8		ug/L		49	25 - 100
Atrazine	36.0	29.7		ug/L		82	57 - 128
1,1'-Biphenyl	36.0	28.0		ug/L		78	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*77*		*30 - 123*
2-Fluorophenol (Surr)	*70*		*30 - 110*
Nitrobenzene-d5 (Surr)	*75*		*33 - 139*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Phenol-d5 (Surr)	*56*		*20 - 100*
Terphenyl-d14 (Surr)	*87*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	28.2		ug/L		88	41 - 112	2	20
Acenaphthylene	32.0	28.2		ug/L		88	48 - 110	0	20
Acetophenone	32.0	26.0		ug/L		81	54 - 116	1	20
Anthracene	32.0	28.8		ug/L		90	65 - 118	3	20
Benzo[a]anthracene	32.0	31.0		ug/L		97	69 - 121	4	20
Benzo[a]pyrene	32.0	32.3		ug/L		101	69 - 130	3	20
Benzo[b]fluoranthene	32.0	35.0		ug/L		109	66 - 133	4	20
Benzo[g,h,i]perylene	32.0	30.7		ug/L		96	47 - 145	1	20
Benzo[k]fluoranthene	32.0	32.9		ug/L		103	64 - 134	1	20
Bis(2-chloroethoxy)methane	32.0	27.9		ug/L		87	55 - 115	2	20
Bis(2-chloroethyl)ether	32.0	27.3		ug/L		85	46 - 110	1	20
Bis(2-ethylhexyl) phthalate	32.0	34.7		ug/L		108	60 - 132	4	20
4-Bromophenyl phenyl ether	32.0	29.0		ug/L		91	60 - 124	8	20
Butyl benzyl phthalate	32.0	34.2		ug/L		107	63 - 127	10	20
Carbazole	32.0	46.8	*	ug/L		146	71 - 132	1	20
4-Chloroaniline	32.0	27.2		ug/L		85	15 - 125	2	20
4-Chloro-3-methylphenol	32.0	29.1		ug/L		91	63 - 120	2	20
2-Chloronaphthalene	32.0	26.7		ug/L		83	38 - 110	1	20
2-Chlorophenol	32.0	25.8		ug/L		81	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	28.8		ug/L		90	55 - 115	5	20
Chrysene	32.0	30.8		ug/L		96	70 - 126	5	20
Dibenz(a,h)anthracene	32.0	31.4		ug/L		98	59 - 145	2	20
Dibenzofuran	32.0	28.7		ug/L		90	54 - 111	3	20
3,3'-Dichlorobenzidine	32.0	40.9		ug/L		128	57 - 145	4	20
2,4-Dichlorophenol	32.0	27.4		ug/L		86	53 - 123	1	20
Diethyl phthalate	32.0	30.1		ug/L		94	64 - 126	0	20
2,4-Dimethylphenol	32.0	21.6		ug/L		67	42 - 115	4	20
Dimethyl phthalate	32.0	30.5		ug/L		95	66 - 120	3	20
Di-n-butyl phthalate	32.0	30.8		ug/L		96	67 - 125	1	20
4,6-Dinitro-2-methylphenol	64.0	66.9		ug/L		105	34 - 152	5	20
2,4-Dinitrophenol	64.0	64.3		ug/L		101	20 - 140	3	20
2,4-Dinitrotoluene	32.0	32.5		ug/L		102	67 - 131	3	20
2,6-Dinitrotoluene	32.0	31.5		ug/L		99	66 - 125	2	20
Di-n-octyl phthalate	32.0	32.5		ug/L		102	63 - 133	3	20
Fluoranthene	32.0	29.4		ug/L		92	68 - 127	2	20
Fluorene	32.0	28.5		ug/L		89	54 - 113	3	20
Hexachlorobenzene	32.0	27.9		ug/L		87	63 - 127	6	20
Hexachlorobutadiene	32.0	19.6		ug/L		61	20 - 110	12	20
Hexachlorocyclopentadiene	32.0	15.0	J	ug/L		47	10 - 110	0	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachloroethane	32.0	20.4		ug/L		64	20 - 110	9	20
Indeno[1,2,3-cd]pyrene	32.0	31.2		ug/L		98	52 - 150	4	20
Isophorone	32.0	27.6		ug/L		86	55 - 120	3	20
2-Methylnaphthalene	32.0	25.0		ug/L		78	32 - 110	7	20
2-Methylphenol	32.0	25.1		ug/L		79	49 - 113	1	20
3 & 4 Methylphenol	32.0	25.1		ug/L		79	49 - 114	0	20
Naphthalene	32.0	24.4		ug/L		76	32 - 110	5	20
2-Nitroaniline	32.0	30.3		ug/L		95	61 - 126	3	20
3-Nitroaniline	32.0	36.4		ug/L		114	42 - 134	7	20
4-Nitroaniline	32.0	44.1		ug/L		138	40 - 142	2	20
Nitrobenzene	32.0	26.2		ug/L		82	49 - 116	0	20
2-Nitrophenol	32.0	29.6		ug/L		92	51 - 120	4	20
4-Nitrophenol	64.0	37.9		ug/L		59	21 - 110	3	20
N-Nitrosodi-n-propylamine	32.0	25.7		ug/L		80	52 - 122	0	20
N-Nitrosodiphenylamine	32.0	30.7		ug/L		96	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	22.9		ug/L		72	34 - 110	1	20
Pentachlorophenol	64.0	52.6		ug/L		82	29 - 138	7	20
Phenanthrene	32.0	28.8		ug/L		90	63 - 121	2	20
Phenol	32.0	21.4		ug/L		67	33 - 100	1	20
Pyrene	32.0	31.2		ug/L		98	65 - 122	9	20
2,4,5-Trichlorophenol	32.0	29.1		ug/L		91	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	29.5		ug/L		92	61 - 120	3	20
Caprolactam	32.0	17.9		ug/L		56	25 - 100	1	20
Atrazine	32.0	31.1		ug/L		97	57 - 128	5	20
1,1'-Biphenyl	32.0	27.6		ug/L		86	42 - 110	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*83*		*30 - 123*
2-Fluorophenol (Surr)	*78*		*30 - 110*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*
Phenol-d5 (Surr)	*61*		*20 - 100*
Terphenyl-d14 (Surr)	*105*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*

Lab Sample ID: MB 500-373020/1-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/22/17 07:09	02/22/17 19:27	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/22/17 07:09	02/22/17 19:27	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/22/17 07:09	02/22/17 19:27	1
Anthracene	<0.80		0.80	0.27	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/22/17 07:09	02/22/17 19:27	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373020/1-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/22/17 07:09	02/22/17 19:27	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/22/17 07:09	02/22/17 19:27	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/22/17 07:09	02/22/17 19:27	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/22/17 07:09	02/22/17 19:27	1
Carbazole	<4.0		4.0	0.28	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/22/17 07:09	02/22/17 19:27	1
Chrysene	<0.16		0.16	0.055	ug/L		02/22/17 07:09	02/22/17 19:27	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/22/17 07:09	02/22/17 19:27	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/22/17 07:09	02/22/17 19:27	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/22/17 07:09	02/22/17 19:27	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/22/17 07:09	02/22/17 19:27	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/22/17 07:09	02/22/17 19:27	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/22/17 07:09	02/22/17 19:27	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/22/17 07:09	02/22/17 19:27	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/22/17 07:09	02/22/17 19:27	1
Fluorene	<0.80		0.80	0.20	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/22/17 07:09	02/22/17 19:27	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/22/17 07:09	02/22/17 19:27	1
Isophorone	<1.6		1.6	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/22/17 07:09	02/22/17 19:27	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/22/17 07:09	02/22/17 19:27	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/22/17 07:09	02/22/17 19:27	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/22/17 07:09	02/22/17 19:27	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Nitrophenol	<16		16	5.9	ug/L		02/22/17 07:09	02/22/17 19:27	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/22/17 07:09	02/22/17 19:27	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
Pentachlorophenol	<16		16	3.2	ug/L		02/22/17 07:09	02/22/17 19:27	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/22/17 07:09	02/22/17 19:27	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373020/1-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<4.0		4.0	0.54	ug/L		02/22/17 07:09	02/22/17 19:27	1
Pyrene	<0.80		0.80	0.34	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzaldehyde	<32	^	32	12	ug/L		02/22/17 07:09	02/22/17 19:27	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/22/17 07:09	02/22/17 19:27	1
Atrazine	<4.0		4.0	0.50	ug/L		02/22/17 07:09	02/22/17 19:27	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/22/17 07:09	02/22/17 19:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*65*		*30 - 123*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
2-Fluorophenol (Surr)	*66*		*30 - 110*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
Phenol-d5 (Surr)	*59*		*20 - 100*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
Terphenyl-d14 (Surr)	*94*		*42 - 150*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*30 - 150*	*02/22/17 07:09*	*02/22/17 19:27*	*1*

Lab Sample ID: LCS 500-373020/2-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	16.1		ug/L		50	41 - 112
Acenaphthylene	32.0	17.7		ug/L		55	48 - 110
Acetophenone	32.0	20.6		ug/L		65	54 - 116
Anthracene	32.0	23.5		ug/L		73	65 - 118
Benzo[a]anthracene	32.0	25.0		ug/L		78	69 - 121
Benzo[a]pyrene	32.0	27.5		ug/L		86	69 - 130
Benzo[b]fluoranthene	32.0	24.8		ug/L		77	66 - 133
Benzo[g,h,i]perylene	32.0	29.4		ug/L		92	47 - 145
Benzo[k]fluoranthene	32.0	27.9		ug/L		87	64 - 134
Bis(2-chloroethoxy)methane	32.0	20.0		ug/L		62	55 - 115
Bis(2-chloroethyl)ether	32.0	18.0		ug/L		56	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	27.0		ug/L		84	60 - 132
4-Bromophenyl phenyl ether	32.0	18.8	*	ug/L		59	60 - 124
Butyl benzyl phthalate	32.0	27.4		ug/L		86	63 - 127
Carbazole	32.0	25.7		ug/L		80	71 - 132
4-Chloroaniline	32.0	22.5		ug/L		70	15 - 125
4-Chloro-3-methylphenol	32.0	21.9		ug/L		68	63 - 120
2-Chloronaphthalene	32.0	14.3		ug/L		45	38 - 110
2-Chlorophenol	32.0	20.1		ug/L		63	49 - 110
4-Chlorophenyl phenyl ether	32.0	17.5		ug/L		55	55 - 115
Chrysene	32.0	24.1		ug/L		75	70 - 126
Dibenz(a,h)anthracene	32.0	30.7		ug/L		96	59 - 145
Dibenzofuran	32.0	17.9		ug/L		56	54 - 111
3,3'-Dichlorobenzidine	32.0	28.6		ug/L		89	57 - 145
2,4-Dichlorophenol	32.0	19.4		ug/L		61	53 - 123
Diethyl phthalate	32.0	28.2		ug/L		88	64 - 126

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373020/2-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dimethylphenol	32.0	19.4		ug/L		61	42 - 115
Dimethyl phthalate	32.0	24.8		ug/L		78	66 - 120
Di-n-butyl phthalate	32.0	25.4		ug/L		79	67 - 125
4,6-Dinitro-2-methylphenol	64.0	45.9		ug/L		72	34 - 152
2,4-Dinitrophenol	64.0	49.3		ug/L		77	20 - 140
2,4-Dinitrotoluene	32.0	27.1		ug/L		85	67 - 131
2,6-Dinitrotoluene	32.0	25.2		ug/L		79	66 - 125
Di-n-octyl phthalate	32.0	26.5		ug/L		83	63 - 133
Fluoranthene	32.0	24.1		ug/L		75	68 - 127
Fluorene	32.0	19.1		ug/L		60	54 - 113
Hexachlorobenzene	32.0	21.2		ug/L		66	63 - 127
Hexachlorobutadiene	32.0	8.75		ug/L		27	20 - 110
Hexachlorocyclopentadiene	32.0	10.3	J	ug/L		32	10 - 110
Hexachloroethane	32.0	9.22		ug/L		29	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	29.7		ug/L		93	52 - 150
Isophorone	32.0	19.7		ug/L		62	55 - 120
2-Methylnaphthalene	32.0	11.2		ug/L		35	32 - 110
2-Methylphenol	32.0	22.2		ug/L		69	49 - 113
3 & 4 Methylphenol	32.0	20.4		ug/L		64	49 - 114
Naphthalene	32.0	11.8		ug/L		37	32 - 110
2-Nitroaniline	32.0	27.5		ug/L		86	61 - 126
3-Nitroaniline	32.0	23.7		ug/L		74	42 - 134
4-Nitroaniline	32.0	30.1		ug/L		94	40 - 142
Nitrobenzene	32.0	19.2		ug/L		60	49 - 116
2-Nitrophenol	32.0	18.9		ug/L		59	51 - 120
4-Nitrophenol	64.0	40.2		ug/L		63	21 - 110
N-Nitrosodi-n-propylamine	32.0	22.7		ug/L		71	52 - 122
N-Nitrosodiphenylamine	32.0	23.5		ug/L		74	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	17.6		ug/L		55	34 - 110
Pentachlorophenol	64.0	19.5		ug/L		30	29 - 138
Phenanthrene	32.0	22.4		ug/L		70	63 - 121
Phenol	32.0	14.2		ug/L		44	33 - 100
Pyrene	32.0	26.5		ug/L		83	65 - 122
2,4,5-Trichlorophenol	32.0	25.7		ug/L		80	63 - 121
2,4,6-Trichlorophenol	32.0	24.6		ug/L		77	61 - 120
Caprolactam	32.0	14.7		ug/L		46	25 - 100
Atrazine	32.0	24.1		ug/L		75	57 - 128
1,1'-Biphenyl	32.0	14.8		ug/L		46	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*61*		*30 - 123*
2-Fluorophenol (Surr)	*59*		*30 - 110*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*
Phenol-d5 (Surr)	*54*		*20 - 100*
Terphenyl-d14 (Surr)	*85*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*83*		*30 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373345/1-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373345

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/23/17 22:30	02/24/17 14:01	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/23/17 22:30	02/24/17 14:01	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/23/17 22:30	02/24/17 14:01	1
Anthracene	<0.80		0.80	0.27	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/23/17 22:30	02/24/17 14:01	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/23/17 22:30	02/24/17 14:01	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/23/17 22:30	02/24/17 14:01	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/23/17 22:30	02/24/17 14:01	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/23/17 22:30	02/24/17 14:01	1
Carbazole	<4.0		4.0	0.28	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/23/17 22:30	02/24/17 14:01	1
Chrysene	<0.16		0.16	0.055	ug/L		02/23/17 22:30	02/24/17 14:01	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/23/17 22:30	02/24/17 14:01	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/23/17 22:30	02/24/17 14:01	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/23/17 22:30	02/24/17 14:01	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/23/17 22:30	02/24/17 14:01	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/23/17 22:30	02/24/17 14:01	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/23/17 22:30	02/24/17 14:01	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/23/17 22:30	02/24/17 14:01	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/23/17 22:30	02/24/17 14:01	1
Fluorene	<0.80		0.80	0.20	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/23/17 22:30	02/24/17 14:01	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/23/17 22:30	02/24/17 14:01	1
Isophorone	<1.6		1.6	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/23/17 22:30	02/24/17 14:01	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/23/17 22:30	02/24/17 14:01	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/23/17 22:30	02/24/17 14:01	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373345/1-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373345

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/23/17 22:30	02/24/17 14:01	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Nitrophenol	<16		16	5.9	ug/L		02/23/17 22:30	02/24/17 14:01	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/23/17 22:30	02/24/17 14:01	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
Pentachlorophenol	<16		16	3.2	ug/L		02/23/17 22:30	02/24/17 14:01	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/23/17 22:30	02/24/17 14:01	1
Phenol	<4.0		4.0	0.54	ug/L		02/23/17 22:30	02/24/17 14:01	1
Pyrene	<0.80		0.80	0.34	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzaldehyde	<32	^	32	12	ug/L		02/23/17 22:30	02/24/17 14:01	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/23/17 22:30	02/24/17 14:01	1
Atrazine	<4.0		4.0	0.50	ug/L		02/23/17 22:30	02/24/17 14:01	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/23/17 22:30	02/24/17 14:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*81*		*30 - 123*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
Nitrobenzene-d5 (Surr)	*85*		*33 - 139*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
Phenol-d5 (Surr)	*45*		*20 - 100*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*30 - 150*	*02/23/17 22:30*	*02/24/17 14:01*	*1*

Lab Sample ID: LCS 500-373345/2-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	29.8		ug/L		93	41 - 112
Acenaphthylene	32.0	28.6		ug/L		89	48 - 110
Acetophenone	32.0	27.8		ug/L		87	54 - 116
Anthracene	32.0	28.4		ug/L		89	65 - 118
Benzo[a]anthracene	32.0	30.1		ug/L		94	69 - 121
Benzo[a]pyrene	32.0	32.7		ug/L		102	69 - 130
Benzo[b]fluoranthene	32.0	34.5		ug/L		108	66 - 133
Benzo[g,h,i]perylene	32.0	32.8		ug/L		103	47 - 145
Benzo[k]fluoranthene	32.0	32.7		ug/L		102	64 - 134
Bis(2-chloroethoxy)methane	32.0	30.4		ug/L		95	55 - 115
Bis(2-chloroethyl)ether	32.0	29.3		ug/L		91	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	32.8		ug/L		102	60 - 132
4-Bromophenyl phenyl ether	32.0	28.0		ug/L		88	60 - 124
Butyl benzyl phthalate	32.0	33.7		ug/L		105	63 - 127
Carbazole	32.0	42.4		ug/L		132	71 - 132
4-Chloroaniline	32.0	28.0		ug/L		87	15 - 125
4-Chloro-3-methylphenol	32.0	30.6		ug/L		96	63 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373345/2-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloronaphthalene	32.0	26.2		ug/L		82	38 - 110
2-Chlorophenol	32.0	27.1		ug/L		85	49 - 110
4-Chlorophenyl phenyl ether	32.0	28.7		ug/L		90	55 - 115
Chrysene	32.0	30.5		ug/L		95	70 - 126
Dibenz(a,h)anthracene	32.0	31.3		ug/L		98	59 - 145
Dibenzofuran	32.0	29.1		ug/L		91	54 - 111
3,3'-Dichlorobenzidine	32.0	38.2		ug/L		119	57 - 145
2,4-Dichlorophenol	32.0	30.2		ug/L		94	53 - 123
Diethyl phthalate	32.0	29.5		ug/L		92	64 - 126
2,4-Dimethylphenol	32.0	28.5		ug/L		89	42 - 115
Dimethyl phthalate	32.0	31.8		ug/L		99	66 - 120
Di-n-butyl phthalate	32.0	30.1		ug/L		94	67 - 125
4,6-Dinitro-2-methylphenol	64.0	64.9		ug/L		101	34 - 152
2,4-Dinitrophenol	64.0	69.6		ug/L		109	20 - 140
2,4-Dinitrotoluene	32.0	34.2		ug/L		107	67 - 131
2,6-Dinitrotoluene	32.0	32.5		ug/L		102	66 - 125
Di-n-octyl phthalate	32.0	33.2		ug/L		104	63 - 133
Fluoranthene	32.0	29.1		ug/L		91	68 - 127
Fluorene	32.0	29.4		ug/L		92	54 - 113
Hexachlorobenzene	32.0	26.9		ug/L		84	63 - 127
Hexachlorobutadiene	32.0	19.3		ug/L		60	20 - 110
Hexachlorocyclopentadiene	32.0	15.1	J	ug/L		47	10 - 110
Hexachloroethane	32.0	20.8		ug/L		65	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	31.8		ug/L		99	52 - 150
Isophorone	32.0	30.5		ug/L		95	55 - 120
2-Methylnaphthalene	32.0	25.1		ug/L		78	32 - 110
2-Methylphenol	32.0	26.7		ug/L		83	49 - 113
3 & 4 Methylphenol	32.0	24.0		ug/L		75	49 - 114
Naphthalene	32.0	24.9		ug/L		78	32 - 110
2-Nitroaniline	32.0	32.6		ug/L		102	61 - 126
3-Nitroaniline	32.0	33.3		ug/L		104	42 - 134
4-Nitroaniline	32.0	35.2		ug/L		110	40 - 142
Nitrobenzene	32.0	28.7		ug/L		90	49 - 116
2-Nitrophenol	32.0	32.6		ug/L		102	51 - 120
4-Nitrophenol	64.0	28.4		ug/L		44	21 - 110
N-Nitrosodi-n-propylamine	32.0	27.4		ug/L		86	52 - 122
N-Nitrosodiphenylamine	32.0	29.4		ug/L		92	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	27.3		ug/L		85	34 - 110
Pentachlorophenol	64.0	48.3		ug/L		76	29 - 138
Phenanthrene	32.0	28.5		ug/L		89	63 - 121
Phenol	32.0	15.8		ug/L		49	33 - 100
Pyrene	32.0	30.9		ug/L		97	65 - 122
2,4,5-Trichlorophenol	32.0	30.3		ug/L		95	63 - 121
2,4,6-Trichlorophenol	32.0	29.8		ug/L		93	61 - 120
Caprolactam	32.0	16.3		ug/L		51	25 - 100
Atrazine	32.0	30.7		ug/L		96	57 - 128
1,1'-Biphenyl	32.0	27.3		ug/L		85	42 - 110

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373345/2-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373345

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*91*		*30 - 123*
2-Fluorophenol (Surr)	*77*		*30 - 110*
Nitrobenzene-d5 (Surr)	*94*		*33 - 139*
Phenol-d5 (Surr)	*54*		*20 - 100*
Terphenyl-d14 (Surr)	*112*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*112*		*30 - 150*

Lab Sample ID: LCSD 500-373345/3-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	30.8		ug/L		96	41 - 112	3	20
Acenaphthylene	32.0	29.5		ug/L		92	48 - 110	3	20
Acetophenone	32.0	29.1		ug/L		91	54 - 116	5	20
Anthracene	32.0	29.7		ug/L		93	65 - 118	5	20
Benzo[a]anthracene	32.0	30.9		ug/L		97	69 - 121	3	20
Benzo[a]pyrene	32.0	33.8		ug/L		106	69 - 130	3	20
Benzo[b]fluoranthene	32.0	36.8		ug/L		115	66 - 133	7	20
Benzo[g,h,i]perylene	32.0	34.4		ug/L		107	47 - 145	5	20
Benzo[k]fluoranthene	32.0	35.1		ug/L		110	64 - 134	7	20
Bis(2-chloroethoxy)methane	32.0	31.0		ug/L		97	55 - 115	2	20
Bis(2-chloroethyl)ether	32.0	30.7		ug/L		96	46 - 110	5	20
Bis(2-ethylhexyl) phthalate	32.0	35.0		ug/L		109	60 - 132	6	20
4-Bromophenyl phenyl ether	32.0	28.5		ug/L		89	60 - 124	2	20
Butyl benzyl phthalate	32.0	36.1		ug/L		113	63 - 127	7	20
Carbazole	32.0	44.0	*	ug/L		138	71 - 132	4	20
4-Chloroaniline	32.0	29.0		ug/L		91	15 - 125	4	20
4-Chloro-3-methylphenol	32.0	31.6		ug/L		99	63 - 120	3	20
2-Chloronaphthalene	32.0	27.0		ug/L		85	38 - 110	3	20
2-Chlorophenol	32.0	28.2		ug/L		88	49 - 110	4	20
4-Chlorophenyl phenyl ether	32.0	29.3		ug/L		92	55 - 115	2	20
Chrysene	32.0	31.6		ug/L		99	70 - 126	4	20
Dibenz(a,h)anthracene	32.0	32.6		ug/L		102	59 - 145	4	20
Dibenzofuran	32.0	29.9		ug/L		94	54 - 111	3	20
3,3'-Dichlorobenzidine	32.0	37.2		ug/L		116	57 - 145	3	20
2,4-Dichlorophenol	32.0	30.6		ug/L		96	53 - 123	1	20
Diethyl phthalate	32.0	30.7		ug/L		96	64 - 126	4	20
2,4-Dimethylphenol	32.0	29.1		ug/L		91	42 - 115	2	20
Dimethyl phthalate	32.0	31.9		ug/L		100	66 - 120	0	20
Di-n-butyl phthalate	32.0	31.6		ug/L		99	67 - 125	5	20
4,6-Dinitro-2-methylphenol	64.0	67.5		ug/L		105	34 - 152	4	20
2,4-Dinitrophenol	64.0	70.6		ug/L		110	20 - 140	1	20
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131	2	20
2,6-Dinitrotoluene	32.0	33.3		ug/L		104	66 - 125	2	20
Di-n-octyl phthalate	32.0	34.2		ug/L		107	63 - 133	3	20
Fluoranthene	32.0	29.7		ug/L		93	68 - 127	2	20
Fluorene	32.0	30.3		ug/L		95	54 - 113	3	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-373345/3-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorobenzene	32.0	27.1		ug/L		85	63 - 127	1	20
Hexachlorobutadiene	32.0	18.9		ug/L		59	20 - 110	2	20
Hexachlorocyclopentadiene	32.0	15.5	J	ug/L		48	10 - 110	2	20
Hexachloroethane	32.0	19.8		ug/L		62	20 - 110	5	20
Indeno[1,2,3-cd]pyrene	32.0	32.8		ug/L		102	52 - 150	3	20
Isophorone	32.0	31.0		ug/L		97	55 - 120	1	20
2-Methylnaphthalene	32.0	25.5		ug/L		80	32 - 110	2	20
2-Methylphenol	32.0	28.4		ug/L		89	49 - 113	6	20
3 & 4 Methylphenol	32.0	25.5		ug/L		80	49 - 114	6	20
Naphthalene	32.0	24.8		ug/L		78	32 - 110	0	20
2-Nitroaniline	32.0	33.7		ug/L		105	61 - 126	3	20
3-Nitroaniline	32.0	34.6		ug/L		108	42 - 134	4	20
4-Nitroaniline	32.0	37.2		ug/L		116	40 - 142	5	20
Nitrobenzene	32.0	29.7		ug/L		93	49 - 116	3	20
2-Nitrophenol	32.0	33.0		ug/L		103	51 - 120	1	20
4-Nitrophenol	64.0	32.6		ug/L		51	21 - 110	14	20
N-Nitrosodi-n-propylamine	32.0	28.6		ug/L		89	52 - 122	4	20
N-Nitrosodiphenylamine	32.0	30.4		ug/L		95	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	29.3		ug/L		92	34 - 110	7	20
Pentachlorophenol	64.0	49.1		ug/L		77	29 - 138	2	20
Phenanthrene	32.0	29.3		ug/L		92	63 - 121	3	20
Phenol	32.0	17.9		ug/L		56	33 - 100	13	20
Pyrene	32.0	32.4		ug/L		101	65 - 122	5	20
2,4,5-Trichlorophenol	32.0	29.9		ug/L		93	63 - 121	1	20
2,4,6-Trichlorophenol	32.0	29.1		ug/L		91	61 - 120	3	20
Caprolactam	32.0	18.4		ug/L		57	25 - 100	12	20
Atrazine	32.0	32.1		ug/L		100	57 - 128	4	20
1,1'-Biphenyl	32.0	28.2		ug/L		88	42 - 110	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*84*		*30 - 123*
2-Fluorophenol (Surr)	*79*		*30 - 110*
Nitrobenzene-d5 (Surr)	*90*		*33 - 139*
Phenol-d5 (Surr)	*57*		*20 - 100*
Terphenyl-d14 (Surr)	*108*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-372591/1-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/17/17 21:00	02/20/17 19:45	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/17/17 21:00	02/20/17 19:45	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/17/17 21:00	02/20/17 19:45	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/17/17 21:00	02/20/17 19:45	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-372591/1-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/17/17 21:00	02/20/17 19:45	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/17/17 21:00	02/20/17 19:45	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/17/17 21:00	02/20/17 19:45	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/17/17 21:00	02/20/17 19:45	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endrin	<0.040		0.040	0.014	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/17/17 21:00	02/20/17 19:45	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/17/17 21:00	02/20/17 19:45	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/17/17 21:00	02/20/17 19:45	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/17/17 21:00	02/20/17 19:45	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/17/17 21:00	02/20/17 19:45	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/17/17 21:00	02/20/17 19:45	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 19:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*112*		*30 - 143*	*02/17/17 21:00*	*02/20/17 19:45*	*1*
Tetrachloro-m-xylene	*78*		*30 - 120*	*02/17/17 21:00*	*02/20/17 19:45*	*1*

Lab Sample ID: LCS 500-372591/2-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372591

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.233		ug/L		73	40 - 130
alpha-BHC	0.320	0.241		ug/L		75	70 - 130
alpha-Chlordane	0.320	0.264		ug/L		82	70 - 130
beta-BHC	0.320	0.256		ug/L		80	70 - 130
4,4'-DDD	0.320	0.289		ug/L		90	70 - 130
4,4'-DDE	0.320	0.253		ug/L		79	56 - 130
4,4'-DDT	0.320	0.293		ug/L		92	50 - 137
delta-BHC	0.320	0.261		ug/L		81	70 - 130
Dieldrin	0.320	0.278		ug/L		87	70 - 130
Endosulfan I	0.320	0.127		ug/L		40	40 - 130
Endosulfan II	0.320	0.175		ug/L		55	49 - 130
Endosulfan sulfate	0.320	0.315		ug/L		98	70 - 130
Endrin	0.320	0.298		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.274		ug/L		86	63 - 130
Endrin ketone	0.320	0.334		ug/L		104	54 - 141
gamma-BHC (Lindane)	0.320	0.258		ug/L		81	70 - 130
gamma-Chlordane	0.320	0.266		ug/L		83	63 - 130
Heptachlor	0.320	0.275		ug/L		86	40 - 130
Heptachlor epoxide	0.320	0.282		ug/L		88	70 - 130
Methoxychlor	0.320	0.362		ug/L		113	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-372591/2-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372591

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*96*		*30 - 143*
Tetrachloro-m-xylene	*60*		*30 - 120*

Lab Sample ID: LCSD 500-372591/3-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372591

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.273		ug/L		85	40 - 130	16	20
alpha-BHC	0.320	0.279		ug/L		87	70 - 130	15	20
alpha-Chlordane	0.320	0.303		ug/L		95	70 - 130	14	20
beta-BHC	0.320	0.295		ug/L		92	70 - 130	14	20
4,4'-DDD	0.320	0.344		ug/L		108	70 - 130	17	20
4,4'-DDE	0.320	0.293		ug/L		92	56 - 130	15	20
4,4'-DDT	0.320	0.328		ug/L		103	50 - 137	11	20
delta-BHC	0.320	0.303		ug/L		95	70 - 130	15	20
Dieldrin	0.320	0.326		ug/L		102	70 - 130	16	20
Endosulfan I	0.320	0.149		ug/L		47	40 - 130	16	20
Endosulfan II	0.320	0.207		ug/L		65	49 - 130	17	20
Endosulfan sulfate	0.320	0.364		ug/L		114	70 - 130	15	20
Endrin	0.320	0.348		ug/L		109	69 - 130	15	20
Endrin aldehyde	0.320	0.312		ug/L		97	63 - 130	13	20
Endrin ketone	0.320	0.389		ug/L		121	54 - 141	15	20
gamma-BHC (Lindane)	0.320	0.301		ug/L		94	70 - 130	15	20
gamma-Chlordane	0.320	0.308		ug/L		96	63 - 130	15	20
Heptachlor	0.320	0.318		ug/L		99	40 - 130	14	20
Heptachlor epoxide	0.320	0.323		ug/L		101	70 - 130	13	20
Methoxychlor	0.320	0.427		ug/L		133	47 - 153	17	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*105*		*30 - 143*
Tetrachloro-m-xylene	*67*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-372591/1-A
Matrix: Water
Analysis Batch: 372765

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/17/17 21:00	02/20/17 13:16	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-372591/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372765 — **Prep Batch: 372591**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*94*		*30 - 127*	*02/17/17 21:00*	*02/20/17 13:16*	*1*
DCB Decachlorobiphenyl	*102*		*30 - 150*	*02/17/17 21:00*	*02/20/17 13:16*	*1*

Lab Sample ID: LCS 500-372591/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372765 — **Prep Batch: 372591**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.39		ug/L		85	58 - 121
PCB-1260	4.00	3.63		ug/L		91	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 127*
DCB Decachlorobiphenyl	*95*		*30 - 150*

Lab Sample ID: LCSD 500-372591/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372765 — **Prep Batch: 372591**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.48		ug/L		87	58 - 121	3	20
PCB-1260	4.00	3.54		ug/L		88	62 - 137	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*86*		*30 - 127*
DCB Decachlorobiphenyl	*95*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-372467/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373052 — **Prep Batch: 372467**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:28	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:28	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:28	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:28	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:28	1
Nickel	<0.010		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:28	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:28	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:28	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:28	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-372467/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373052 — **Prep Batch: 372467**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:28	1

Lab Sample ID: MB 500-372467/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373200 — **Prep Batch: 372467**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:00	1
Barium	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:00	1
Calcium	<0.20		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:00	1
Iron	0.120	J ^	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:00	1
Magnesium	<0.10		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:00	1
Potassium	<0.50		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:00	1
Sodium	<1.0		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:00	1

Lab Sample ID: LCS 500-372467/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373052 — **Prep Batch: 372467**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.506		mg/L		101	80 - 120
Arsenic	0.100	0.100		mg/L		100	80 - 120
Cadmium	0.0500	0.0501		mg/L		100	80 - 120
Chromium	0.200	0.206		mg/L		103	80 - 120
Cobalt	0.500	0.512		mg/L		102	80 - 120
Copper	0.250	0.258		mg/L		103	80 - 120
Lead	0.100	0.0975		mg/L		97	80 - 120
Manganese	0.500	0.530		mg/L		106	80 - 120
Nickel	0.500	0.510		mg/L		102	80 - 120
Selenium	0.100	0.0937		mg/L		94	80 - 120
Silver	0.0500	0.0511		mg/L		102	80 - 120
Thallium	0.100	0.0984		mg/L		98	80 - 120
Vanadium	0.500	0.532		mg/L		106	80 - 120
Zinc	0.500	0.505		mg/L		101	80 - 120

Lab Sample ID: LCS 500-372467/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373200 — **Prep Batch: 372467**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.07		mg/L		104	80 - 120
Barium	2.00	2.14		mg/L		107	80 - 120
Beryllium	0.0500	0.0530		mg/L		106	80 - 120
Calcium	10.0	10.4		mg/L		104	80 - 120
Iron	1.00	1.15	^	mg/L		115	80 - 120
Magnesium	10.0	10.1		mg/L		101	80 - 120
Potassium	10.0	10.6		mg/L		106	80 - 120
Sodium	10.0	10.8		mg/L		108	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-372526/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:21	1

Lab Sample ID: LCS 500-372526/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00199		mg/L		99	80 - 120

Lab Sample ID: 500-123998-1 MS — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.00116		mg/L		116	75 - 125

Lab Sample ID: 500-123998-1 MSD — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.00103		mg/L		103	75 - 125	12	20

Lab Sample ID: 500-123998-1 DU — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	<0.00020		<0.00020		mg/L		NC	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-372856/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:01	1

Lab Sample ID: LCS 500-372856/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.91	6.81		mg/L		99	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-374123/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.04	J	5.0	1.5	mg/L			03/02/17 07:06	1

Lab Sample ID: LCS 500-374123/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.4		mg/L		102	80 - 120

Lab Sample ID: 500-123998-2 MS — **Client Sample ID: MW-02-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	3.0	J B	20.0	22.7		mg/L		98	75 - 125

Lab Sample ID: 500-123998-2 MSD — **Client Sample ID: MW-02-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	3.0	J B	20.0	24.0		mg/L		105	75 - 125	6	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-372593/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			02/16/17 18:31	1

Lab Sample ID: LCS 500-372593/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.5		mg/L		105	80 - 120
TOC Result 1	10.0	10.4		mg/L		104	80 - 120
TOC Result 2	10.0	10.6		mg/L		106	80 - 120

Lab Sample ID: MB 500-372960/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372960

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.432	J	1.0	0.27	mg/L			02/20/17 23:58	1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-372960/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372960

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	11.1		mg/L		111	80 - 120
TOC Result 1	10.0	11.1		mg/L		111	80 - 120
TOC Result 2	10.0	11.2		mg/L		112	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-372543/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			02/17/17 13:00	1

Lab Sample ID: LCS 500-372543/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	193		mg/L		96	80 - 120

Lab Sample ID: 500-123998-1 MS — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	11		100	116		mg/L		105	75 - 125

Lab Sample ID: 500-123998-1 DU — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	11		8.00	F5	mg/L		32	5

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-372578/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372597 — **Prep Batch: 372578**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		02/17/17 19:00	02/17/17 21:51	1

Method: SM 4500 NH3 G - Ammonia (Continued)

Lab Sample ID: LCS 500-372578/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372597 — **Prep Batch: 372578**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.41		mg/L		96	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-372536/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372536

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:43	1

Lab Sample ID: LCS 500-372536/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372536

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.103		mg/L		103	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-372665/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372665

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 23:58	1

Lab Sample ID: LCS 500-372665/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372665

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.955		mg/L		95	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	373192	02/23/17 18:27	PJH	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	10	373146	02/23/17 02:43	GES	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 01:52	GES	TAL CHI
Total/NA	Prep	3510C	DL2		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL2	50	373397	02/24/17 15:27	AJD	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/20/17 23:16	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:02	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 20:39	PJ1	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373200	02/22/17 18:44	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 20:35	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373200	02/22/17 18:40	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:42	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:36	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:37		
					(End)	02/21/17 07:39		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:08		
					(End)	03/02/17 07:09		
Total/NA	Analysis	9060A		1	372593	02/17/17 00:38	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:08		
					(End)	02/17/17 13:09		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372597	02/17/17 22:11	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:44		
					(End)	02/17/17 12:44		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:09	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05

Matrix: Water

Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373192	02/23/17 17:07	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	10	373192	02/23/17 17:34	PJH	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373146	02/23/17 03:10	GES	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 02:21	GES	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/20/17 23:35	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:18	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 20:48	PJ1	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373200	02/22/17 18:52	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 20:44	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373200	02/22/17 18:49	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:45	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:44	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:39		
					(End)	02/21/17 07:42		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:09		
					(End)	03/02/17 07:10		
Total/NA	Analysis	9060A		1	372593	02/17/17 00:54	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:12		
					(End)	02/17/17 13:14		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372597	02/17/17 22:14	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:44		
					(End)	02/17/17 12:45		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:11	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373092	02/23/17 04:42	PMF	TAL CHI
Total/NA	Prep	3510C			373345	02/23/17 22:30	LLH	TAL CHI
Total/NA	Analysis	8270D		1	373397	02/24/17 14:30	AJD	TAL CHI
Total/NA	Prep	3510C	DL		373345	02/23/17 22:30	LLH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373397	02/24/17 14:58	AJD	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/20/17 23:54	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:33	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:01	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 20:57	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:48	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:47	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:42		
					(End)	02/21/17 07:44		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:12		
					(End)	03/02/17 07:13		
Total/NA	Analysis	9060A		1	372593	02/17/17 01:11	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:14		
					(End)	02/17/17 13:15		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372597	02/17/17 22:17	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:45		
					(End)	02/17/17 12:45		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:13	HMW	TAL CHI

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	373092	02/23/17 05:09	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	100	373092	02/23/17 05:36	PMF	TAL CHI
Total/NA	Prep	3510C			373020	02/22/17 12:03	JJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	373146	02/23/17 00:54	GES	TAL CHI
Total/NA	Prep	3510C	DL		373020	02/22/17 12:03	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	10	373146	02/23/17 01:21	GES	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/21/17 00:13	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:48	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:13	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 21:07	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:54	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:53	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:44		
					(End)	02/21/17 07:47		
Total/NA	Analysis	9038		5	374123		CLB	TAL CHI
					(Start)	03/02/17 07:13		
					(End)	03/02/17 07:14		
Total/NA	Analysis	9060A		2	372960	02/21/17 00:31	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:15		
					(End)	02/17/17 13:16		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372597	02/17/17 22:25	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:45		
					(End)	02/17/17 12:45		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:16	HMW	TAL CHI

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373192	02/23/17 18:00	PJH	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	373146	02/23/17 01:49	GES	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/21/17 00:33	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 15:04	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:26	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 21:19	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:57	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:55	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:47		
					(End)	02/21/17 07:50		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:14		
					(End)	03/02/17 07:15		
Total/NA	Analysis	9060A		1	372593	02/17/17 01:44	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:16		
					(End)	02/17/17 13:18		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	372597	02/17/17 22:28	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:45		
					(End)	02/17/17 12:46		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:16	HMW	TAL CHI

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373092	02/23/17 06:03	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	373146	02/23/17 02:16	GES	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373397	02/24/17 15:56	AJD	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/21/17 00:52	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 15:19	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:35	PJ1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 21:31	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 11:00	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:58	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:50		
					(End)	02/21/17 07:52		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:15		
					(End)	03/02/17 07:16		
Total/NA	Analysis	9060A		1	372593	02/17/17 02:00	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:18		
					(End)	02/17/17 13:19		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372597	02/17/17 23:33	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:46		
					(End)	02/17/17 12:46		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:19	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOH, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	2-16-2017	1455	[signature]	TA	2/16/17	1455
[signature]	TA	2/16/17	1535	[signature]	TALHT	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TA-IL-A-0001 (Rev. 3.0) 3/8/2017

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123998-1

Login Number: 123998
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8, -0.9, 1.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123998-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
2/28/2017 10:33:30 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Receipt Checklists 18

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-2

Job ID: 500-123998-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123998-2

Comments
No additional comments.

Receipt
The samples were received on 2/16/2017 3:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were -0.9º C, 1.7º C and 2.8º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

February 27, 2017

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-123998-2**

Pace Workorder: 21748

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 17, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 02/27/2017
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com. Total Number of Pages ____

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

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SAMPLE SUMMARY

Workorder: 21748 500-123998-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
217480001	MW-03-GW-02152017	Water	2/15/2017 13:20	2/17/2017 10:40
217480002	MW-02-GW-02152017	Water	2/15/2017 16:05	2/17/2017 10:40
217480003	MW-01-GW-02162017	Water	2/16/2017 07:55	2/17/2017 10:40
217480004	MW-13-GW-02162017	Water	2/16/2017 10:35	2/17/2017 10:40
217480005	MW-11-GW-02162017	Water	2/16/2017 13:00	2/17/2017 10:40
217480006	DUP-1-02162017	Water	2/16/2017 00:00	2/17/2017 10:40

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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-03-GW-02152017** Date Collected: 2/15/2017 13:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**22000**	ug/l	0.50	0.027	1	2/24/2017 13:48	MM	n
Carbon Dioxide	**80**	mg/l	5.0	0.24	1	2/24/2017 13:48	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	2/24/2017 13:48	MM	n
Nitrogen	**9.1**	mg/l	2.0	0.24	1	2/24/2017 13:48	MM	n

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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-02-GW-02152017** Date Collected: 2/15/2017 16:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**16000**	ug/l	0.50	0.027	1	2/24/2017 14:04	MM	n
Carbon Dioxide	**360**	mg/l	5.0	0.24	1	2/24/2017 14:04	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:04	MM	n
Nitrogen	**8.9**	mg/l	2.0	0.24	1	2/24/2017 14:04	MM	n

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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-01-GW-02162017** Date Collected: 2/16/2017 07:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	2/24/2017 14:17	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:17	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:17	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:17	MM	n

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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-13-GW-02162017** Date Collected: 2/16/2017 10:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**23000**	ug/l	0.50	0.027	1	2/24/2017 14:30	MM	n
Carbon Dioxide	**64**	mg/l	5.0	0.24	1	2/24/2017 14:30	MM	n
Oxygen	**1.4**	mg/l	0.50	0.13	1	2/24/2017 14:30	MM	n
Nitrogen	**7.9**	mg/l	2.0	0.24	1	2/24/2017 14:30	MM	n

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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480005** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-11-GW-02162017** Date Collected: 2/16/2017 13:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**18000**	ug/l	0.50	0.027	1	2/24/2017 14:43	MM	n
Carbon Dioxide	**210**	mg/l	5.0	0.24	1	2/24/2017 14:43	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:43	MM	n
Nitrogen	**9.5**	mg/l	2.0	0.24	1	2/24/2017 14:43	MM	n

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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480006** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **DUP-1-02162017** Date Collected: 2/16/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 14:57	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:57	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:57	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:57	MM	n

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Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21748 500-123998-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 21748 500-123998-2

QC Batch: DISG/5933 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 217480001, 217480002, 217480003, 217480004, 217480005, 217480006

METHOD BLANK: 47179

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 47180

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 47181 47183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	780	760	104	101	80-120	2.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 47182 47184

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	112	115	80-120	2.6	20	n
Oxygen	mg/l	11	11	11	95	93	80-120	2.1	20	n
Nitrogen	mg/l	140	120	120	85	84	80-120	1.2	20	n

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QUALITY CONTROL DATA QUALIFIERS

Workorder: 21748 500-123998-2

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 21748 500-123998-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
217480001	MW-03-GW-02152017			AM20GAX	DISG/5933
217480002	MW-02-GW-02152017			AM20GAX	DISG/5933
217480003	MW-01-GW-02162017			AM20GAX	DISG/5933
217480004	MW-13-GW-02162017			AM20GAX	DISG/5933
217480005	MW-11-GW-02162017			AM20GAX	DISG/5933
217480006	DUP-1-02162017			AM20GAX	DISG/5933

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°

500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative: 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOM, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thum	Arcadis	2-16-2017	1455	[illegible]	TA	2/16/17	1455
[illegible]	TA	2/16/17	1535	[illegible]	TALH	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123998-2

Login Number: 123998
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8, -0.9, 1.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls (PCBs), Metals, and Miscellaneous General Chemistry Analyses

SDGs #500-123839-1, 500-123839-2, 500-123929-1, 500-123929-2, 500-123998-1, and 500-123998-2

Analyses Performed By:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #27268R
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #500-123839-1, 500-123839-2, 500-123929-1, 500-123929-2, 500-123998-1, and 500-123998-2 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chains of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	Pest/ PCB	MET	MISC	Dslvd Gases
5001238391/ 5001238392	MW-10-GW-02142017	500-123839-1	Water	02/14/2017		X	X	X	X	X	X
	MW-09-GW-02142017	500-123839-2	Water	02/14/2017		X	X	X	X	X	X
	MW-08-GW-02142017	500-123839-3	Water	02/14/2017		X	X	X	X	X	X
	DUP-2-02142017	500-123839-4	Water	02/14/2017	MW-08-GW-02142017	X	X	X	X	X	X
5001239291\ 5001239292	MW-07-GW-02142017	500-123929-1	Water	02/14/2017		X	X	X	X	X	X
	MW-06-GW-02152017	500-123929-2	Water	02/15/2017		X	X	X	X	X	X
	MW-05-GW-02152017	500-123929-3	Water	02/15/2017		X	X	X	X	X	X
	MW-04-GW-02152017	500-123929-4	Water	02/15/2017		X	X	X	X	X	X
5001239981/ 5001239982	MW-03-GW-02152017	217480001	Water	02/15/2017		X	X	X	X	X	X
	MW-02-GW-02152017	217480002	Water	02/15/2017		X	X	X	X	X	X
	MW-01-GW-02162017	217480003	Water	02/16/2017		X	X	X	X	X	X
	MW-13-GW-02162017	217480004	Water	02/16/2017		X	X	X	X	X	X
	MW-11-GW-02162017	217480005	Water	02/16/2017		X	X	X	X	X	X

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	Pest/ PCB	MET	MISC	Dslvd Gases
	DUP-1-02162017	217480006	Water	02/16/2017	MW-01-GW-02162017						

Dslvd = dissolved

Notes:

1. Misc - Miscellaneous parameters include sulfate, sulfide, total organic carbon (TOC), total suspended solids (TSS), ammonia, nitrate and nitrite analyses.
2. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample locations DUP-2-02142017 (SDG #5001238391 and 5001238392); MW-04-GW-02152017 (SDG #5001239291 for metals and TOC analysis only).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, 8081B, 8082A, and Method AM20GAx (Dissolved gases). Data were reviewed in accordance with *USEPA National Functional Guidelines for Organic Data Review* (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected; the analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis (preserved)	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

Each target compound associated with the continuing calibration standard must exhibit a RRF value greater than control limit (0.05) and a percent difference (%D) from the initial calibration within the control limit (20%).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

SDG	Samples	Initial/ Continuing	Compound	Criteria
500-123839-1	MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	CCV	Acetone	-23.6%
			Methyl Ethyl Ketone	-20.9%
500-123929-1	MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	CCV	Carbon disulfide	-20.2
500-123998-1	MW-01-GW-02162017 MW-13-GW-02162017 DUP-1-02162017	CCV	Dichlorodifluoromethane	-23.8
			Chloroethane	-32.0%
	MW-03-GW-02152017 MW-02-GW-02152017 MW-11-GW-02162017	CCV	Acetone	-34.3%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibrations	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibrations	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibrations	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Surrogate	Recovery
SDG 500-123998-1 DUP-1-02162017	4-Bromofluorobenzene	AC
	Dibromofluoromethane	< 10%
	1,2-Dichloroethane-d4	AC
	Toluene-d8	AC

Notes:

AC = Acceptable

The laboratory noted the following: "One surrogate recovery for the following sample was outside control limits: DUP-1-02162017 (500-123998-6). Evidence of matrix interference is present (basic pH); therefore, re-analysis was not performed".

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL (Upper Control Limit)	Non-detect	No Action
	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
D - Surrogates diluted below the calibration curve	Non-detect	UJ[1]
	Detect	J[1]

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSDs exhibited acceptable recoveries and RPDs.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG #500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	Acetone	5.7	5.0 U	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Acetone	55.0	59.0	7.0%
	Benzene	30	30	0.0%
	1,2-Dichlorobenzene	1.8	1.7	5.7%
	1,4-Dichlorobenzene	3.6	3.6	AC
	2-Butanone (MEK)	46.0	45.0	2.2%
	Vinyl chloride	0.48 J	0.45 J	AC
	Toluene	11.0	11.0	0.0%
	Chlorobenzene	5.8	5.7	1.7%
	Cyclohexane	1.6	1.5	AC
	Methylcyclohexane	1.8	1.9	AC
	Total Xylenes	23.0	24.0	4.3%
	Ethylbenzene	24.0	25.0	4.1%
	Isopropylbenzene	14.0	13.0	7.4

AC = acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SDG #500-123998-1 MW-03-GW-02152017	Chlorobenzene	--	480 D	--
MW-13-GW-02162017	Toluene	--	2600 D	--
	Xylenes, Total	--	8400 D	--

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCS

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision RPD		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

DISSOLVED GASES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
AM20GAX	Water	14 days from collection to analysis	Cool to <6 °C; pH > 10

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to Ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a correlation coefficient greater than 0.995.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All compounds associated with the calibrations were within the specified control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample from within these SDGs.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG #500-123839-2 MW-08-GW-02142017/ DUP-2-02142017	Methane	15000	15000	0.0%
	Carbon Dioxide	220	230	4.4%
	Oxygen	2.5	2.9	14.8%
	Nitrogen	8.8	10	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Methane	20000	21000	4.9%
	Nitrogen	10.0	10.0	0.0%
	Oxygen	3.4	3.4	0.0%

AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Thermal Conductivity Detector (GC/TCD)					
Tier II Validation					
Holding times/Temperature/Preservation		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method/Calibration blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) (%R)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike Sample (MS) (%R)		X		X	
Matrix Spike Duplicate Sample (MSD) (%R)		X		X	
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample (RPD)		X		X	
Field Duplicate Sample (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration correlation coefficients		X		X	
Continuing calibration RRFs					X
Continuing calibration %Ds		X		X	
Compound identification and quantitation		X		X	
A. Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/ Continuing	Compound	Criteria
SDG 500-123929-1 MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	ICV %RSD	Benzaldehyde	-28.4%
	CCV %D	Hexachlorocyclopentadiene	-26.0%
		Carbazole	-20.8%
SDG 500-123998-1 MW-13-GW-02162017 MW-11-GW-02162017 DUP-1-02162017	CCV %D	Benzaldehyde	-30.9%
		Pentachlorophenol	-44.5%
		Carbazole	-22.2%
SDG 500-123998-1 MW-03-GW-02152017 MW-02-GW-02152017	CCV %D	Hexachlorocyclopentadiene	-26.0%
		Carbazole	-20.8%
SDG 500-123998-1 MW-01-GW-02162017	CCV %D	Benzaldehyde	-40.2%
		Hexachlorocyclopentadiene	-31.6%
		Pentachlorophenol	-20.8%
		3-Nitroaniline	22.1%
		Dibenz(a,h)anthracene	20.8%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 20% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:
[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SDG #500-123929-1 MW-06-GW-02152017	Phenol-d6	AC
	2-Fluorophenol	AC
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	<LL but > 10%
	2-Fluorobiphenyl	AC
	Terphenyl-d14	AC

Notes:
LL = Lower control limit
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Control Limit	Sample Result	Qualification
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Locations	Internal Standard	Response
SDG 500-123929-1 MW-07-GW-02142017 MW-06-GW-02152017	1,4-Dichlorobenzene-d4	AC
	Naphthalene-d8	AC
	Acenaphthene-d10	AC
	Phenanthrene-d10	AC
	Chrysene-d12	AC
	Perylene-d12	< 25%
SDG 500-123998-1 MW-13-GW-02162017	1,4-Dichlorobenzene-d4	AC
	Naphthalene-d8	AC
	Acenaphthene-d10	AC
	Phenanthrene-d10	AC
	Chrysene-d12	AC
	Perylene-d12	< LL but > 25%

Note:

AC = Acceptable

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J

Control limit	Sample Result	Qualification
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample associated with these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
SDG #5001238391 MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	2-Chlorophenol	AC	<LL but >10%
	2,4-Dichlorophenol		<LL but >10%
	4,6-Dinitro-2-methylphenol		<LL but >10%
	2-Nitrophenol		<LL but >10%
	Pentachlorophenol		<LL but >10%
	2,4,5-Trichlorophenol		<LL but >10%
	2,4,6-Trichlorophenol		<LL but >10%
SDG 5001239291 MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	Carbazole	AC	>UL

Sample Locations	Compound	LCS Recovery	LCSD Recovery
SDG 5001239291 MW-03-GW-02152017 MW-02-GW-02152017 MW-01-GW-02162017 MW-11-GW-02162017 DUP-1-02162017	Carbazole	AC	>UL
SDG 5001239291 MW-13-GW-02162017	4-Bromophenyl phenyl ether	<LL but >10%	AC

AC = acceptable

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Samples associated with LCS/LCSDs exhibiting RPDs greater than the control limit are presented in the following table.

Sample Locations	Compound
SDG #500-123839-1 MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	2-Chlorophenol
	2,4-Dichlorophenol
	4,6-Dinitro-2-methylphenol
	2,4-Dinitrophenol
	Hexachlorobutadiene
	Hexachloroethane
	3-Nitroaniline
	2-Nitrophenol
	4-Nitrophenol
	Pentachlorophenol
	Phenol
	2,4,5-Trichlorophenol

The criteria used to evaluate the RPD between the LCS and LCSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG #500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	3 & 4 Methylphenol	1.5 U	0.33 J	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	2,4-Dimethylphenol	6.7 J	5.5 J	AC
	2-Methylnaphthalene	5.5	4.3	AC
	2-Methylphenol	1.5	1.4 J	AC
	4-Methyl-2-Pentanone	99	99	0.0%
	4-Methylphenol	6.6	6.3	4.7%
	Acenaphthene	8.1	8.1	0.0%
	Carbazole	6.4	4.3	AC
	Anthracene	0.26 J	U	AC
	Di-n-butyl phthalate	U	0.75 J	AC
	Dibenzofuran	1.4 J	1.3 J	AC
	Fluorene	2.6	2.4	AC
	Naphthalene	130	120	8.0%
	p-Chloroaniline	13	7.4 U	0.0%
	Phenanthrene	1.3	1.2	AC

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Phenol	72	96	28.6%
	3 & 4 Methylphenol	6.6	6.3	AC

AC Acceptable

The field duplicate samples exhibited acceptable results.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SDG #500-123929-1 MW-07-GW-02142017	Bis(2-ethylhexyl) phthalate	--	170 D	170 D
	2,4-Dimethylphenol	--	340 D	340 D
SDG #500-123929-1 MW-06-GW-02152017	2,4-Dimethylphenol	--	93 D	93 D
SDG #500-123998-1 MW-03-GW-02152017	Carbazole	--	71 D	71 D
	2-Methylnaphthalene	--	150 D	150 D
	Naphthalene	--	870 D	870 D
SDG #500-123998-1 MW-02-GW-02152017	2-Methylnaphthalene	--	100 D	100 D
	Naphthalene	--	73 D	73 D
SDG #500-123998-1 MW-01-GW-02162017	Naphthalene	--	130 D	130 D
	Phenol	--	72 D	72 D
SDG #500-123998-1 DUP-1-02162017	Naphthalene	--	120 D	120 D
	Phenol	--	96 D	96 D
SDG #500-123998-1 MW-13-GW-02162017	Naphthalene	--	190 D	190 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCS

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X	X		
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard response		X	X		
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

The analyses that exceeded the holding are presented in the following table.2-14

Sample Locations	Holding Time	Criteria
SDG 500-123929-1 MW-07-GW-02142017 (RE)	8 days (extraction completed)	<7 Days from collection to extraction

Sample results associated with sample locations analyzed by analytical method SW-846 8081 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ
Analysis completed greater than two times holding time	J	R

Note: Sample MW-07-GW-02142017 exhibited surrogate recoveries less than the control limit and less than 10 percent. The sample was re-extracted slightly outside holding time as indicated in table above. Therefore, the re-extracted and re-analyzed sample is recommended for reporting and qualified as estimate due to holding time deviation.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All compounds associated with the initial and continuing calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. Pesticide analysis requires that at least one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SDG 500-123929-1	Tetrachloro-m-xylene	< LL but > 10%
MW-07-GW-02142017	Decachlorobiphenyl	<10%
SDG 500-123929-1	Tetrachloro-m-xylene	AC
MW-07-GW-02142017 (RE)	Decachlorobiphenyl	< LL but > 10%
SDG 500-123929-1	Tetrachloro-m-xylene	AC
MW-06-GW-02152017	Decachlorobiphenyl	< LL but > 10%
SDG 500-123929-1	Tetrachloro-m-xylene	< LL but > 10%
MW-04-GW-02152017	Decachlorobiphenyl	AC

Notes:
Acceptable (AC)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	J[1]
	Detect	

Note:

Note: Sample MW-07-GW-02142017 exhibited surrogate recoveries less than the control limit and less than 10 percent. The sample was re-extracted slightly outside holding time as indicated in table above. Therefore, the re-extracted and re-analyzed sample is recommended for reporting and qualified as estimate due to holding time deviation.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate

sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	All compounds	0.036 U	0.037 U	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	All compounds	0.037 U	0.038 U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

Target compounds were not detected in any of the samples.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

PESTICIDES: SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column %D $\leq$ 40% (If dual column is performed for reporting - not confirmation)	X				X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference
%D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB

analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SDG 500-123929-1	Tetrachloro-m-xylene	< LL but > 10%
MW-07-GW-02142017	Decachlorobiphenyl	< LL but > 10%
SDG 500-123929-1	Tetrachloro-m-xylene	AC
MW-06-GW-02152017	Decachlorobiphenyl	< LL but > 10%

Notes:
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	J[1]
	Detect	

Note:

Note: Sample MW-07-GW-02142017 exhibited surrogate recoveries less than the control limit and less than 10 percent. The sample was re-extracted slightly outside holding time as indicated in table above. Therefore, the re-extracted and re-analyzed sample is recommended for reporting and qualified as estimate due to holding time deviation.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits. However, sample locations associated with LCS/LCSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
SDG 500-123929-1 MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	PCB-1260

The criteria used to evaluate the RPD between the LCS/LCSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-123929-1 MW-08-GW-02142017/ DUP-2-02142017	All Aroclors	0.36 U	0.37 U	AC

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG #500-123998-1				
MW-01-GW-02162017/ DUP-1-02162017	All Aroclors	0.37 U	0.38 U	AC

AC Acceptable

The field duplicate samples exhibited acceptable results.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (RPD) of detected sample results must be less than 40%.

All detected Aroclors exhibited acceptable %Ds between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBS

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X	X		
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation
%R - percent recovery,
RPD - relative percent difference,
%D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C, 7470A, 9034, 9038, and 9060A, and Standard Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F. Data were reviewed in accordance with *USEPA National Functional Guidelines for Inorganic Data Review* (October 2004).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
  - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
  - E The reported value is estimated due to the presence of interference.
  - N Spiked sample recovery is not within the control limits.
  - * Duplicate analysis is not within the control limits.
- Validation Qualifiers
  - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
  - UB Analyte considered non-detect at the listed value due to associated blank contamination.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3
SW-846 7470A	Water	28 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (10%).

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within the control limits.

All initial and continuing calibration verification standards were within the control limits.

3.3 Reporting limit (RL) Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the reporting limit. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), or potassium (K). The RL check standard must exhibit recoveries between 70-130% (50-150% for antimony (Sb), lead (Pb), and thallium (Tl)).

All RL standard recoveries were within control limits.

3.4 ICP Interference Check Sample (ICS)

The ICS verifies the laboratory's interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis was not performed on a sample from within these SDGs.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

The laboratory duplicate sample analysis was not performed All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
SDG 500-123929-1 MW-04-GW-02152017	Selenium	AC (75%)	70%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	Barium (dissolved)	0.65	0.65	0.0%
	Barium (total)	0.67	0.68	1.5%
	Cadmium (total)	0.00094 J	0.0011 J	AC
	Calcium (total)	120	120	0.0%
	Calcium (dissolved)	120	120	0.0%
	Copper (total)	0.0022 J	0.010 U	AC
	Iron (total)	11.0	11.0	0.0%
	Iron (dissolved)	11.0	11.0	0.0%
	Magnesium (dissolved)	87.0	88.0	1.1%
	Magnesium (total)	91.0	92.0	1.1%
	Manganese (dissolved)	0.18	0.18	0.0%
	Manganese (total)	0.18	0.19	5.4%
	Potassium (dissolved)	35.0	35.0	0.0%
	Potassium (total)	36.0	37.0	2.7%
	Sodium (dissolved)	240	240	0.0%
	Sodium (total)	240	250	4.1%

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
	Zinc (total)	0.020 U	0.017 J	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Aluminum (total)	0.21	0.22	AC
	Aluminum (dissolved)	0.34	0.33	3.0%
	Antimony (dissolved)	0.0068 J	0.020 U	AC
	Arsenic (dissolved)	0.0038 J	0.0066 J	AC
	Arsenic (total)	0.0046 J	0.0048 J	AC
	Barium (total)	0.45	0.47	4.3%
	Barium (dissolved)	0.46	0.45	2.2%
	Calcium (dissolved)	510	500	2.0%
	Calcium (total)	510	530	3.8%
	Iron (dissolved)	0.20 U	0.12 J	AC
	Lead (total)	0.0050 U	0.0025 J	AC
	Lead (dissolved)	0.0027 J	0.0025 J	AC
	Magnesium (dissolved)	1.7	1.7	AC
	Nickel (dissolved)	0.016	0.015	AC
	Nickel (total)	0.016	0.016	AC
	Potassium (total)	50	50	0.0%
	Potassium (dissolved)	51	50	2.0%
	Sodium (dissolved)	210	210	0.0%
	Sodium (total)	210	220	4.7%

Notes:

AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit recoveries between the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be no greater than the established acceptance limit of 20%.

All analytes associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

7. Serial Dilution (SD) Analysis

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

All analytes associated with the serial dilution analyses exhibited %Ds within the control limits except for those presented in the following table.

Sample Locations	Analytes	Serial Dilution (%D)
SDG 500-123839-1 DUP-2-02142017	Barium (total)	24%
	Calcium (total)	27%
	Iron (total)	29%
	Magnesium (total)	23%
	Manganese (total)	27%
	Potassium (total)	23%
	Sodium (total)	24%
SDG 500-123929-1 MW-04-GW-02152017	Calcium (dissolved)	17%
	Magnesium (dissolved)	15%
	Manganese (dissolved)	17%
	Potassium (dissolved)	14%
	Sodium (dissolved)	16%

The criteria used to evaluate SD recoveries are presented in the following table. In the case of SD exceedance, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
SD %D > 10%	Non-detect	UJ
	Detect	J

8. Assessment of Dissolved versus Total Results

The results for dissolved metal analytes should be less than 120% of the associated total metal result for those analytes that are at least five times the reporting limit (RL).

The calculated %D between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: SW-846 6010C and 7470A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
ICP Serial Dilution %D		X	X		
Total vs. Dissolved		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
RL Standard Recovery		X		X	
ICP Interference Check		X		X	
ICP-MS Internal Standards					X
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Nitrite-N by SM 4500-NO2-B	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate+Nitrite as N by SM 4500-NO3-F	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Sulfate by SW-846 9038A	Water	28 days from collection to analysis	Cool to < 6 °C.
Sulfide by SW-846 9034	Water	7 days from collection to analysis	Cool to < 6 °C.
Total Organic Carbon (TOC) by SW-846 9060A	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Total Suspended Solids (TSS) by SM 2540D	Water	7 days from collection to analysis	Cool to < 6 °C

The analyses that exceeded the holding time are presented in the following table; all other holding times were met.

Samples	Analysis	Holding Time	Criteria
SDG 500-123839-1 MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	Nitrite-N by SM 4500-NO2-B	> 48 Hours but < 96 Hours	< 48 Hours

Note: Due to the tendency of nitrite converting into nitrate, nitrate results for samples analyzed greater than 48 hours after collection should be considered as nitrate+nitrite. The nitrite results for the samples which were analyzed for nitrate after 48 hours (but within 28 days) were non-detects. Therefore, the nitrate results do not require qualification.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, except for the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Samples	Analyte	Sample Result	Qualification
SDG 500-123839-1 MW-08-GW-02142017 DUP-2-02142017 **SDG 500-123929-1** MW-05-GW-02152017 **SDG 500-123998-1** MW-02-GW-02152017	Sulfate	Detected sample results < RL and < BAL	"UB" at the RL
SDG 500-123839-1 MW-09-GW-0214201 **SDG 500-123929-1** MW-06-GW-02152017 **SDG 500-123998-1** MW-03-GW-02152017 MW-11-GW-02162017		Detected sample results > RL and < BAL	"UB" at detected sample concentration

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within the control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate Sample (MS/MSD)/Laboratory Duplicate Sample Analysis

MS/MSD and laboratory duplicate sample data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and any laboratory qualifiers will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
SDG 500-123929-1 MW-04-GW-02152017	TOC	62%	60%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample RPD criterion is applied when parent and duplicate sample concentrations are at least five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

MS/MSD analysis was performed in addition of the laboratory duplicate sample analysis. The MS/MSD recoveries and laboratory duplicate exhibited acceptable RPD.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	Total Organic Carbon	15	15	0.0%
	Total Suspended Solids	24	26	8.0%
	Ammonia Nitrogen	36	37	2.7%

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Ammonia Nitrogen	49	49	0.0
	Total Organic Carbon 2	31.0	30.0	3.3
	Total Suspended Solids	29.0	24.0	18.9
	Sulfide	0.98 J	3.5	NC

NC = Non-compliant

The analyte sulfide associated with samples locations MW-01-GW-02162017 and DUP-1-02162017 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

The LCS analyses exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 353.2, SW-846 9034, 9038, 9060A, SM 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference,
%D – difference

VALIDATION PERFORMED BY: Todd Church

SIGNATURE:

DATE: March 15, 2017

PEER REVIEW: Dennis Capria

DATE: March 17, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/16/17 19:33	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 19:33	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 19:33	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 19:33	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 19:33	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 19:33	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 19:33	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 19:33	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 19:33	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 19:33	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 19:33	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 19:33	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 19:33	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 19:33	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 19:33	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 19:33	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 19:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Date Collected: 02/14/17 08:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/16/17 19:33*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/16/17 19:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 127*		*02/16/17 19:33*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 19:33*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/15/17 08:59	02/15/17 17:13	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/15/17 08:59	02/15/17 17:13	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:13	1
Carbazole	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chlorophenol	<3.6	* J	3.6	0.41	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/15/17 08:59	02/15/17 17:13	1
4,6-Dinitro-2-methylphenol	<15	* J	15	4.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrophenol	<15	* J	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobutadiene	<3.6	* J	3.6	0.38	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorocyclopentadiene	<15		15	4.6	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachloroethane	<3.6	* J	3.6	0.44	ug/L		02/15/17 08:59	02/15/17 17:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Methylnaphthalene	<1.5		1.5	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/15/17 08:59	02/15/17 17:13	1
3-Nitroaniline	<7.3	* J	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitrophenol	<7.3	* J	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitrophenol	<15	* J	15	5.4	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pentachlorophenol	<15	* J	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenol	<3.6	* J	3.6	0.49	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,5-Trichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,6-Trichlorophenol	<3.6	* J	3.6	0.52	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 17:13	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 17:13	1
Atrazine	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
1,1'-Biphenyl	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Nitrobenzene-d5 (Surr)	*89*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Phenol-d5 (Surr)	*60*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2,4,6-Tribromophenol (Surr)	*97*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:13	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:13	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:13	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:13	1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:13	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:13*	*1*
Tetrachloro-m-xylene	*56*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 09:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*58*		*30 - 127*	*02/15/17 07:39*	*02/16/17 09:50*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*02/15/17 07:39*	*02/16/17 09:50*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:47	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:47	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Barium	**0.093**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:47	1
Calcium	**180**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:47	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cobalt	**0.0011**	J	0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:47	1
Copper	**0.0088**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Iron	**12**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:47	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:47	1
Magnesium	**77**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:47	1
Manganese	**0.99**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Nickel	**0.011**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:47	1
Potassium	**34**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:47	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:47	1
Sodium	**64**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:47	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:47	1
Zinc	**0.074**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:47	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:50	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Barium	**0.093**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:50	1
Calcium	**180**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:50	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:50	1
Copper	**0.0052**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:50	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:50	1
Magnesium	**78**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:50	1
Manganese	**1.0**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Nickel	**0.010**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:50	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:50	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:50	1
Sodium	**65**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:50	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:50	1
Zinc	**0.073**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:43	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:23	1
Sulfate	**530**	~~**B**~~	100	29	mg/L			02/15/17 06:52	20
Total Organic Carbon - Duplicates	**12**		1.0	0.27	mg/L			02/16/17 22:11	1
Nitrogen, Nitrate	**1.3**		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**30**		5.0	2.5	mg/L			02/15/17 11:22	1
Ammonia	**1.7**		0.20	0.10	mg/L		02/14/17 21:30	02/15/17 00:16	1
Nitrogen, Nitrite	**0.016**	**J**	0.020	0.0088	mg/L			02/15/17 14:18	1
Nitrogen, Nitrate Nitrite	**1.3**		0.10	0.035	mg/L			02/17/17 21:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/16/17 20:00	1
Benzene	**1.5**		0.50	0.15	ug/L			02/16/17 20:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
Chlorobenzene	**14**		1.0	0.39	ug/L			02/16/17 20:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:00	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/16/17 20:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Isopropylbenzene	**3.0**		1.0	0.39	ug/L			02/16/17 20:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
Methylcyclohexane	**1.2**		1.0	0.32	ug/L			02/16/17 20:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 20:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:00	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/16/17 20:00*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*02/16/17 20:00*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/16/17 20:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.1**		0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 17:40	1
Anthracene	<0.74		0.74	0.25	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 17:40	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:40	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chlorophenol	<3.7	J	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 17:40	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:40	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dichlorophenol	<7.4	J	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 17:40	1
4,6-Dinitro-2-methylphenol	<15	J	15	4.4	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrophenol	<15	J	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluorene	**0.42**	**J**	0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobutadiene	<3.7	J	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachloroethane	<3.7	J	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 17:40	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 17:40	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Methylnaphthalene	**2.5**		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 17:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Naphthalene	**0.29**	**J**	0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/15/17 08:59	02/15/17 17:40	1
3-Nitroaniline	<7.4	J	7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/15/17 08:59	02/15/17 17:40	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitrophenol	<7.4	J	7.4	1.8	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitrophenol	<15	J	15	5.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenol	<3.7	J	3.7	0.50	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pyrene	<0.74		0.74	0.31	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,5-Trichlorophenol	<7.4	J	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,6-Trichlorophenol	<3.7	J	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzaldehyde	<30		30	11	ug/L		02/15/17 08:59	02/15/17 17:40	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/15/17 08:59	02/15/17 17:40	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 17:40	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2-Fluorophenol (Surr)	*52*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Phenol-d5 (Surr)	*47*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:33	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:33	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2
Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:33*	*1*
Tetrachloro-m-xylene	*46*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:06*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:00	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Barium	**0.82**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:00	1
Calcium	**120**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:00	1
Chromium	**0.0040**	J	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:00	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Iron	**26**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:00	1
Magnesium	**81**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:00	1
Manganese	**0.16**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Nickel	**0.0046**	J	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:00	1
Potassium	**77**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:00	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:00	1
Sodium	**200**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:00	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:00	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:00	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Date Collected: 02/14/17 09:40
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-2

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:04	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Barium	**0.83**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:04	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:04	1
Chromium	**0.0030**	**J**	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:04	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Iron	**26**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:04	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:04	1
Magnesium	**83**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:04	1
Manganese	**0.16**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Nickel	**0.0041**	**J**	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:04	1
Potassium	**78**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:04	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:04	1
Sodium	**200**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:04	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:04	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:26	1
Sulfate	**10**	~~B~~ UB	5.0	1.5	mg/L			02/15/17 06:53	1
Total Organic Carbon - Duplicates	**26**		1.0	0.27	mg/L			02/16/17 22:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**45**		5.0	2.5	mg/L			02/15/17 11:24	1
Ammonia	**73**		5.0	2.5	mg/L		02/14/17 21:30	02/15/17 01:01	25
Nitrogen, Nitrite	<0.020	J	0.020	0.0088	mg/L			02/15/17 14:19	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5.7	J	5.0	1.7	ug/L			02/16/17 20:27	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:27	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 20:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:27	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/16/17 20:27*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*71 - 127*		*02/16/17 20:27*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 20:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:07	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:07	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chlorophenol	<3.7	* J	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:07	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:07	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:07	1
4,6-Dinitro-2-methylphenol	<15	* J	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrophenol	<15	* J	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobutadiene	<3.7	* J	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachloroethane	<3.7	* J	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:07	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:07	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3
Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:07	1
3-Nitroaniline	<7.3	* J	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:07	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitrophenol	<7.3	* J	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitrophenol	<15	* J	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pentachlorophenol	<15	* J	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenol	<3.7	* J	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,5-Trichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,6-Trichlorophenol	<3.7	* J	3.7	0.52	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:07	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:07	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:07	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Nitrobenzene-d5 (Surr)	*61*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Phenol-d5 (Surr)	*42*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Terphenyl-d14 (Surr)	*70*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		02/15/17 07:39	02/21/17 12:52	1
beta-BHC	<0.036		0.036	0.0093	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		02/15/17 07:39	02/21/17 12:52	1
delta-BHC	<0.036		0.036	0.0094	ug/L		02/15/17 07:39	02/21/17 12:52	1
Dieldrin	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin ketone	<0.036		0.036	0.015	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		02/15/17 07:39	02/21/17 12:52	1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:52	1
Toxaphene	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/21/17 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:52*	*1*
Tetrachloro-m-xylene	*45*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1221	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1232	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1242	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1248	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1254	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1260	<0.36		0.36	0.064	ug/L		02/15/17 07:39	02/16/17 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*51*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:21*	*1*
DCB Decachlorobiphenyl	*74*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:09	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:09	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Barium	**0.67**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cadmium	**0.00094**	J	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:09	1
Calcium	**120**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:09	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:09	1
Copper	**0.0022**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Iron	**11**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:09	1
Magnesium	**91**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:09	1
Manganese	**0.18**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:09	1
Potassium	**36**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:09	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:09	1
Sodium	**240**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:09	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:09	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:09	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Date Collected: 02/14/17 11:30
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:16	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:16	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:16	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:16	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:16	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:16	1
Magnesium	**87**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:16	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:16	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:16	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:16	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:16	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:16	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:16	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:28	1
Sulfate	5.0 **2.4**	**J** ~~**B**~~ UB	5.0	1.5	mg/L			02/15/17 07:02	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 22:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/15/17 11:26	1
Ammonia	**36**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:04	10
Nitrogen, Nitrite	<0.020	J	0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/16/17 20:54	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:54	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:54	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:54	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:54	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:54	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:54	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:54	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:54	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:54	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 20:54	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:54	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:54	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:54	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:54	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:54	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*02/16/17 20:54*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/16/17 20:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 127*		*02/16/17 20:54*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/16/17 20:54*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:34	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:34	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chlorophenol	<3.7	* J	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:34	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:34	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 18:34	1
4,6-Dinitro-2-methylphenol	<15	* J	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrophenol	<15	* J	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobutadiene	<3.7	* J	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachloroethane	<3.7	* J	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:34	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:34	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:34	1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
3 & 4 Methylphenol	**0.33**	**J**	1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:34	1
3-Nitroaniline	<7.3	* J	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:34	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitrophenol	<7.3	* J	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitrophenol	<15	* J	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pentachlorophenol	<15	* J	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenol	<3.7	* J	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,5-Trichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,6-Trichlorophenol	<3.7	* J	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:34	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:34	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:34	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2-Fluorophenol (Surr)	*38*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Nitrobenzene-d5 (Surr)	*51*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Phenol-d5 (Surr)	*36*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 13:11	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 13:11	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 13:11	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 13:11	1

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 13:11	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*30 - 143*	*02/15/17 07:39*	*02/21/17 13:11*	*1*
Tetrachloro-m-xylene	*37*		*30 - 120*	*02/15/17 07:39*	*02/21/17 13:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*47*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:36*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:36*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:20	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:20	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Barium	**0.68**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:20	1
Calcium	**120**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:20	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:20	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Iron	**11**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:20	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:20	1
Magnesium	**92**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:20	1
Manganese	**0.19**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:20	1
Potassium	**37**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:20	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:20	1
Sodium	**250**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:20	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:20	1
Zinc	**0.017**	J	0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:20	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:24	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:24	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:24	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:24	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:24	1
Magnesium	**88**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:24	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:24	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:24	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:24	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:24	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:24	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:31	1
Sulfate	5.0 **1.7**	~~J B~~ UB	5.0	1.5	mg/L			02/20/17 09:22	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 23:01	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**26**		5.0	2.5	mg/L			02/15/17 11:27	1
Ammonia	**37**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:07	10
Nitrogen, Nitrite	<0.020	J	0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:40	1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400001** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-10-GW-02142017** Date Collected: 2/14/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**32**	ug/l	0.50	0.027	1	2/24/2017 12:53	MM	n
Carbon Dioxide	**46**	mg/l	5.0	0.24	1	2/24/2017 12:53	MM	n
Oxygen	**3.8**	mg/l	0.50	0.13	1	2/24/2017 12:53	MM	n
Nitrogen	**24**	mg/l	2.0	0.24	1	2/24/2017 12:53	MM	n

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ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400002** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-09-GW-02142017** Date Collected: 2/14/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	2/24/2017 13:08	MM	n
Carbon Dioxide	**450**	mg/l	5.0	0.24	1	2/24/2017 13:08	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 13:08	MM	n
Nitrogen	**9.4**	mg/l	2.0	0.24	1	2/24/2017 13:08	MM	n

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ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400003** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-08-GW-02142017** Date Collected: 2/14/2017 11:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:22	MM	n
Carbon Dioxide	**220**	mg/l	5.0	0.24	1	2/24/2017 13:22	MM	n
Oxygen	**2.5**	mg/l	0.50	0.13	1	2/24/2017 13:22	MM	n
Nitrogen	**8.8**	mg/l	2.0	0.24	1	2/24/2017 13:22	MM	n

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ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400004** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **DUP-2-02142017** Date Collected: 2/14/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:35	MM	n
Carbon Dioxide	**230**	mg/l	5.0	0.24	1	2/24/2017 13:35	MM	n
Oxygen	**2.9**	mg/l	0.50	0.13	1	2/24/2017 13:35	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 13:35	MM	n

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 21740 500-123839-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-123839

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 4.8, 0.5

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0002.0005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 500-123839 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved Metals (3)	Ammonia, NO_3, NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOC, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-10-GW-02142017	2/14	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved
2		MW-09-GW-02142017	2/14	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	metals
3		MW-08-GW-02142017	2/14	1130	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		Dup-2-02142017	2/14	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-14-2017	1600	[signature]	TA	2/14/17	1600
[signature]	TA	2/14/17	1648	[signature]	TACHI	02/14/17	1640

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**27**		5.0	1.7	ug/L			02/21/17 01:55	1
Benzene	**14**		0.50	0.15	ug/L			02/21/17 01:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 01:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 01:55	1
Carbon disulfide	<2.0	J	2.0	0.45	ug/L			02/21/17 01:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
Chlorobenzene	**0.86**	**J**	1.0	0.39	ug/L			02/21/17 01:55	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 01:55	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 01:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 01:55	1
cis-1,2-Dichloroethene	**4.1**		1.0	0.41	ug/L			02/21/17 01:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 01:55	1
Cyclohexane	**0.55**	**J**	1.0	0.49	ug/L			02/21/17 01:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 01:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichlorobenzene	**5.9**		1.0	0.33	ug/L			02/21/17 01:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			02/21/17 01:55	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 01:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 01:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Isopropylbenzene	**11**		1.0	0.39	ug/L			02/21/17 01:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
Methylcyclohexane	**0.98**	**J**	1.0	0.32	ug/L			02/21/17 01:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Methyl Ethyl Ketone	**8.1**		5.0	2.1	ug/L			02/21/17 01:55	1
methyl isobutyl ketone	**45**		5.0	2.2	ug/L			02/21/17 01:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 01:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 01:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 01:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 01:55	1
Vinyl chloride	**8.4**		0.50	0.20	ug/L			02/21/17 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/21/17 01:55*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 01:55*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 01:55*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/21/17 01:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**180**		5.0	1.8	ug/L			02/21/17 02:20	10
Toluene	**380**		5.0	1.5	ug/L			02/21/17 02:20	10
Xylenes, Total	**910**		10	2.2	ug/L			02/21/17 02:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 02:20*	*10*
Dibromofluoromethane	*98*		*70 - 120*		*02/21/17 02:20*	*10*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 02:20*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*02/21/17 02:20*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.3**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/20/17 07:25	02/21/17 23:26	1
Anthracene	**2.6**		0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]anthracene	**1.5**		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.072~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	1
Benzo[b]fluoranthene	**1.3**	~~*~~ J	0.15	0.059	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[g,h,i]perylene R	~~<0.73~~	~~*~~	~~0.73~~	~~0.27~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	1
Benzo[k]fluoranthene	**0.56**	~~*~~ J	0.15	0.046	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/20/17 07:25	02/21/17 23:26	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:26	1
Carbazole	<3.6	~~*~~ J	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloro-3-methylphenol	**41**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chlorophenol	<3.6		3.6	0.41	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/20/17 07:25	02/21/17 23:26	1
Chrysene	**1.6**		0.15	0.049	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dibenz(a,h)anthracene R	~~<0.22~~	~~*~~	~~0.22~~	~~0.037~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	~~1~~
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/20/17 07:25	02/21/17 23:26	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrophenol	<15		15	6.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-octyl phthalate	<7.3		7.3	0.76	ug/L		02/20/17 07:25	02/21/17 23:26	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**3.1**		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobutadiene	<3.6		3.6	0.37	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorocyclopentadiene	<15	J	15	4.6	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachloroethane	<3.6		3.6	0.43	ug/L		02/20/17 07:25	02/21/17 23:26	1
Indeno[1,2,3-cd]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.054~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylnaphthalene	**5.0**		1.5	0.047	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylphenol	**49**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
3 & 4 Methylphenol	**9.5**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
Naphthalene	**33**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/20/17 07:25	02/21/17 23:26	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenanthrene	**10**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenol	<3.6		3.6	0.49	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pyrene	**10**		0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzaldehyde	**40**	~~*~~ J	29	11	ug/L		02/20/17 07:25	02/21/17 23:26	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:26	1
Atrazine	<3.6		3.6	0.45	ug/L		02/20/17 07:25	02/21/17 23:26	1
1,1'-Biphenyl	**2.2**	**J**	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Nitrobenzene-d5 (Surr)	*43*		*33 - 139*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Phenol-d5 (Surr)	*73*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**170**	D	73	12	ug/L		02/20/17 07:25	02/22/17 18:29	10
2,4-Dimethylphenol	**340**	D	73	13	ug/L		02/20/17 07:25	02/22/17 18:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*42*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Phenol-d5 (Surr)	*88*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Terphenyl-d14 (Surr)	*79*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*61*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.024	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-BHC	<0.18		0.18	0.012	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		02/16/17 09:00	02/21/17 16:04	5
beta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDE	<0.18		0.18	0.017	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		02/16/17 09:00	02/21/17 16:04	5
delta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
Dieldrin	<0.18		0.18	0.059	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan I	<0.18		0.18	0.019	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan II	<0.18		0.18	0.013	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin	<0.18		0.18	0.065	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin ketone	<0.18		0.18	0.078	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor	<0.18		0.18	0.062	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor epoxide	<0.18		0.18	0.063	ug/L		02/16/17 09:00	02/21/17 16:04	5
Methoxychlor	<0.37		0.37	0.11	ug/L		02/16/17 09:00	02/21/17 16:04	5
Toxaphene	<1.8		1.8	0.92	ug/L		02/16/17 09:00	02/21/17 16:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*7*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 16:04*	*5*
Tetrachloro-m-xylene	*16*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 16:04*	*5*

Method: 8081B - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18	H J	0.18	0.025	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-BHC	<0.18	H	0.18	0.012	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-Chlordane	<0.18	H	0.18	0.020	ug/L		02/22/17 17:59	02/23/17 13:12	5
beta-BHC	<0.18	H	0.18	0.047	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDD	<0.18	H	0.18	0.061	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDE	<0.18	H	0.18	0.018	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDT	<0.18	H	0.18	0.015	ug/L		02/22/17 17:59	02/23/17 13:12	5
delta-BHC	<0.18	H	0.18	0.048	ug/L		02/22/17 17:59	02/23/17 13:12	5
Dieldrin	<0.18	H	0.18	0.060	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan I	<0.18	H	0.18	0.019	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan II	<0.18	H	0.18	0.013	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan sulfate	<0.18	H	0.18	0.054	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin	<0.18	H	0.18	0.066	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin aldehyde	<0.18	H	0.18	0.038	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin ketone	<0.18	H	0.18	0.079	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-BHC (Lindane)	<0.18	H	0.18	0.026	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-Chlordane	<0.18	H	0.18	0.033	ug/L		02/22/17 17:59	02/23/17 13:12	5
Heptachlor	<0.18	H	0.18	0.062	ug/L		02/22/17 17:59	02/23/17 13:12	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.18	~~H~~ J	0.18	0.064	ug/L		02/22/17 17:59	02/23/17 13:12	5
Methoxychlor	<0.37	~~H~~	0.37	0.11	ug/L		02/22/17 17:59	02/23/17 13:12	5
Toxaphene	<1.8	~~H~~	1.8	0.92	ug/L		02/22/17 17:59	02/23/17 13:12	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 143*	*02/22/17 17:59*	*02/23/17 13:12*	*5*
Tetrachloro-m-xylene	*34*		*30 - 120*	*02/22/17 17:59*	*02/23/17 13:12*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37	J	0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**2.3**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**3.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**1.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**2.7**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37	~~X~~	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
Tetrachloro-m-xylene	*19*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.3**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:04	1
Antimony	**0.013**	**J**	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:04	1
Arsenic	**0.039**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Barium	**0.51**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cadmium	**0.0052**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:04	1
Calcium	**9.6**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:04	1
Chromium	**0.36**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cobalt	**0.039**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:04	1
Copper	**0.057**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Iron	**3.9**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:04	1
Lead	**0.50**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:04	1
Magnesium	**25**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:04	1
Manganese	**0.015**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Nickel	**0.14**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:04	1
Potassium	**570**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:04	1
Selenium	**0.0093**	**J**	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:04	1
Sodium	**3500**		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:03	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Vanadium	**0.055**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:04	1
Zinc	**0.67**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.77**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:08	1
Antimony	**0.0085**	J	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:08	1
Arsenic	**0.032**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Barium	**0.46**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cadmium	**0.0027**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:08	1
Calcium	**9.1**	J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:08	1
Chromium	**0.33**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cobalt	**0.038**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:08	1
Copper	**0.026**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Iron	**3.4**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:08	1
Lead	**0.18**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:08	1
Magnesium	**25**	J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:08	1
Manganese	**0.013**	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Nickel	**0.13**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:08	1
Potassium	**570**	J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:08	1
Selenium	**0.0070**	J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:08	1
Sodium	**3600**	J	10	4.3	mg/L		02/16/17 07:48	02/21/17 13:08	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Vanadium	**0.048**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:08	1
Zinc	**0.32**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00086**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:23	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00036**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			02/21/17 07:26	1
Sulfate	<50		50	15	mg/L			02/20/17 09:17	10
Total Organic Carbon - Duplicates	**540**	~~B~~	40	11	mg/L			02/20/17 00:59	40
Nitrogen, Nitrate	**0.059**	J	0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**13**		5.0	2.5	mg/L			02/16/17 10:19	1
Ammonia	**740**		40	20	mg/L		02/16/17 18:50	02/16/17 23:54	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	**0.059**	J	0.10	0.035	mg/L			02/17/17 21:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**43**		5.0	1.7	ug/L			02/21/17 02:45	1
Benzene	**6.6**		0.50	0.15	ug/L			02/21/17 02:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 02:45	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 02:45	1
Carbon disulfide	**1.6**	**J**	2.0	0.45	ug/L			02/21/17 02:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
Chlorobenzene	**0.62**	**J**	1.0	0.39	ug/L			02/21/17 02:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 02:45	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 02:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 02:45	1
cis-1,2-Dichloroethene	**3.6**		1.0	0.41	ug/L			02/21/17 02:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 02:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichlorobenzene	**2.3**		1.0	0.33	ug/L			02/21/17 02:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			02/21/17 02:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 02:45	1
1,1-Dichloroethane	**0.45**	**J**	1.0	0.41	ug/L			02/21/17 02:45	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
Ethylbenzene	**55**		0.50	0.18	ug/L			02/21/17 02:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			02/21/17 02:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
Methylcyclohexane	**0.76**	**J**	1.0	0.32	ug/L			02/21/17 02:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Methyl Ethyl Ketone	**14**		5.0	2.1	ug/L			02/21/17 02:45	1
methyl isobutyl ketone	**25**		5.0	2.2	ug/L			02/21/17 02:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Toluene	**130**		0.50	0.15	ug/L			02/21/17 02:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 02:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 02:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 02:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 02:45	1
Vinyl chloride	**3.4**		0.50	0.20	ug/L			02/21/17 02:45	1
Xylenes, Total	**230**		1.0	0.22	ug/L			02/21/17 02:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Date Collected: 02/15/17 08:00
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/21/17 02:45*	*1*
Dibromofluoromethane	*100*		*70 - 120*		*02/21/17 02:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*02/21/17 02:45*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 02:45*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.50**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Anthracene	**0.30**	**J**	0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.072~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Benzo[b]fluoranthene	~~<0.15~~	~~*~~	~~0.15~~	~~0.059~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Benzo[g,h,i]perylene R	~~<0.73~~	~~*~~	~~0.73~~	~~0.27~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Benzo[k]fluoranthene R R	~~<0.15~~	~~*~~	~~0.15~~	~~0.047~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-ethylhexyl) phthalate	**41**		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/21/17 23:55	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:55	1
Carbazole	<3.7	~~*~~ J	3.7	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloro-3-methylphenol	**12**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chloronaphthalene	**3.1**		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/21/17 23:55	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dibenz(a,h)anthracene R	~~<0.22~~	~~*~~	~~0.22~~	~~0.037~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:55	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-butyl phthalate	**1.4**	**J**	3.7	0.53	ug/L		02/20/17 07:25	02/21/17 23:55	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluoranthene	**0.43**	**J**	0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluorene	**0.39**	**J**	0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorocyclopentadiene	<15	J	15	4.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/21/17 23:55	1
Indeno[1,2,3-cd]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.055~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylnaphthalene	**2.0**		1.5	0.048	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylphenol	**18**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**5.0**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Naphthalene	**23**		0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/21/17 23:55	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:55	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenanthrene	**1.0**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenol	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pyrene	**0.59**	**J**	0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzaldehyde	**20**	**J**	29	11	ug/L		02/20/17 07:25	02/21/17 23:55	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:55	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/21/17 23:55	1
1,1'-Biphenyl	**1.5**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*55*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2-Fluorophenol (Surr)	*64*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Nitrobenzene-d5 (Surr)	*32*	*X*	*33 - 139*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Phenol-d5 (Surr)	*69*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	**93**	D	37	6.6	ug/L		02/20/17 07:25	02/22/17 18:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*43*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2-Fluorophenol (Surr)	*68*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Nitrobenzene-d5 (Surr)	*47*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Phenol-d5 (Surr)	*74*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Terphenyl-d14 (Surr)	*92*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:06	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:06	1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:06	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:06	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:06	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 15:06*	*1*
Tetrachloro-m-xylene	*58*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37	* J	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*35*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
Tetrachloro-m-xylene	*42*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*18*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.29**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:13	1
Arsenic	**0.021**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Barium	**0.26**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2
Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0015	J	0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:13	1
Calcium	15		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:13	1
Chromium	0.11		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:13	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:13	1
Copper	0.0096	J	0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Iron	0.98		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:13	1
Lead	0.11		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:13	1
Magnesium	31		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:13	1
Manganese	0.0079	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:13	1
Potassium	520		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:13	1
Selenium	0.0081	J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:13	1
Sodium	3300		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:12	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Vanadium	0.032		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:13	1
Zinc	0.11		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.14	J	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:18	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:18	1
Arsenic	0.020		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Barium	0.26		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:18	1
Calcium	15	J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:18	1
Chromium	0.10		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:18	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Iron	0.59		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:18	1
Lead	0.0080		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:18	1
Magnesium	31	J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:18	1
Manganese	0.0071	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:18	1
Potassium	520	J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:18	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:18	1
Sodium	3500	J	10	4.3	mg/L		02/16/17 07:48	02/21/17 13:17	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Vanadium	0.029		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:18	1
Zinc	0.023		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:26	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.2**		1.0	0.18	mg/L			02/21/17 07:29	1
Sulfate	**21**	~~B~~ UB	10	2.9	mg/L			02/20/17 09:18	2
Total Organic Carbon - Duplicates	**310**	~~B~~	20	5.3	mg/L			02/20/17 01:16	20
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**4.0**	**J**	5.0	2.5	mg/L			02/16/17 10:20	1
Ammonia	**530**		40	20	mg/L		02/16/17 18:50	02/16/17 23:57	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.5**		5.0	1.7	ug/L			02/21/17 03:10	1
Benzene	**0.24**	**J**	0.50	0.15	ug/L			02/21/17 03:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:10	1
Carbon disulfide	<2.0	J	2.0	0.45	ug/L			02/21/17 03:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
Chlorobenzene	**2.9**		1.0	0.39	ug/L			02/21/17 03:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:10	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 03:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:10	1
Cyclohexane	**2.2**		1.0	0.49	ug/L			02/21/17 03:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/21/17 03:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/21/17 03:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/21/17 03:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			02/21/17 03:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
Methylcyclohexane	**0.55**	**J**	1.0	0.32	ug/L			02/21/17 03:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/21/17 03:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/21/17 03:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Toluene	<0.50		0.50	0.15	ug/L			02/21/17 03:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 03:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/21/17 03:10	1
Xylenes, Total	**0.90**	**J**	1.0	0.22	ug/L			02/21/17 03:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*02/21/17 03:10*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 03:10*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 03:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 00:24	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 00:24	1
Carbazole	<3.8	*	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 00:24	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 00:24	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluorene	**0.20**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorocyclopentadiene	<15	J	15	4.8	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 00:24	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 00:24	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Methylnaphthalene	**0.40**	**J**	1.5	0.049	ug/L		02/20/17 07:25	02/22/17 00:24	1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Naphthalene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 00:24	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodiphenylamine	**0.98**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenanthrene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzaldehyde	<30	J	30	11	ug/L		02/20/17 07:25	02/22/17 00:24	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 00:24	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 00:24	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Nitrobenzene-d5 (Surr)	*63*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Phenol-d5 (Surr)	*52*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/16/17 09:00	02/21/17 15:26	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:26	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:26	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Date Collected: 02/15/17 09:40
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-3

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/16/17 09:00	02/21/17 15:26	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:26*	*1*
Tetrachloro-m-xylene	*41*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:26*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1260	<0.37	J	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*63*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:26*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:22	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:22	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Barium	**0.86**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:22	1
Calcium	**76**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:22	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:22	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Iron	**20**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:22	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:22	1
Magnesium	**90**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:22	1
Manganese	**0.053**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Nickel	**0.0046**	J	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:22	1
Potassium	**43**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:22	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:22	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:22	1
Sodium	**150**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:22	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:22	1
Zinc	**0.0093**	J	0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:22	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Barium	**0.83**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:26	1
Calcium	**73**	J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:26	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Iron	**19**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:26	1
Magnesium	**88**	J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:26	1
Manganese	**0.051**	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Nickel	<0.010		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:26	1
Potassium	**42**	J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:26	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:26	1
Sodium	**150**	J	1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:29	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:32	1
Sulfate 5.0	~~2.9~~	~~J B~~ UB	5.0	1.5	mg/L			02/23/17 03:32	1
Total Organic Carbon - Duplicates	**18**	~~B~~	1.0	0.27	mg/L			02/20/17 01:33	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**56**		5.0	2.5	mg/L			02/16/17 10:22	1
Ammonia	**50**		4.0	2.0	mg/L		02/16/17 18:50	02/16/17 22:40	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**31**		5.0	1.7	ug/L			02/21/17 03:35	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:35	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:35	1
Carbon disulfide	**2.2**	J	2.0	0.45	ug/L			02/21/17 03:35	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			02/21/17 03:35	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:35	1
Chloroform	**0.65**	J	2.0	0.37	ug/L			02/21/17 03:35	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
cis-1,2-Dichloroethene	**11**		1.0	0.41	ug/L			02/21/17 03:35	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:35	1
Cyclohexane	**1.9**		1.0	0.49	ug/L			02/21/17 03:35	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:35	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichlorobenzene	**0.56**	J	1.0	0.33	ug/L			02/21/17 03:35	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:35	1
1,1-Dichloroethane	**18**		1.0	0.41	ug/L			02/21/17 03:35	1
1,2-Dichloroethane	**58**		1.0	0.39	ug/L			02/21/17 03:35	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichloropropane	**1.7**		1.0	0.43	ug/L			02/21/17 03:35	1
Ethylbenzene	**13**		0.50	0.18	ug/L			02/21/17 03:35	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:35	1
Isopropylbenzene	**0.92**	J	1.0	0.39	ug/L			02/21/17 03:35	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
Methylene Chloride	**6.9**		5.0	1.6	ug/L			02/21/17 03:35	1
Methyl Ethyl Ketone	**9.7**		5.0	2.1	ug/L			02/21/17 03:35	1
methyl isobutyl ketone	**20**		5.0	2.2	ug/L			02/21/17 03:35	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Toluene	**28**		0.50	0.15	ug/L			02/21/17 03:35	1
trans-1,2-Dichloroethene	**1.1**		1.0	0.35	ug/L			02/21/17 03:35	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:35	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:35	1
Trichloroethene	**2.4**		0.50	0.16	ug/L			02/21/17 03:35	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:35	1
Vinyl chloride	**3.8**		0.50	0.20	ug/L			02/21/17 03:35	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/21/17 03:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*02/21/17 03:35*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 03:35*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 03:35*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**530**		5.0	1.5	ug/L			02/21/17 04:00	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 04:00*	*10*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 04:00*	*10*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 127*		*02/21/17 04:00*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 04:00*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acetophenone	**3.0**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Anthracene	<0.73		0.73	0.24	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/22/17 00:53	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/22/17 00:53	1
Carbazole	<3.7		3.7	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/22/17 00:53	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dimethylphenol	**31**		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/22/17 00:53	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/22/17 00:53	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorocyclopentadiene	<15	J	15	4.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/22/17 00:53	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/22/17 00:53	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylphenol	**7.7**		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
3 & 4 Methylphenol	**11**		1.5	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/22/17 00:53	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/22/17 00:53	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenol	**13**		3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzaldehyde	<29	J	29	11	ug/L		02/20/17 07:25	02/22/17 00:53	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/22/17 00:53	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*39*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:45	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/16/17 09:00	02/21/17 15:45	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:45	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*53*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:45*	*1*
Tetrachloro-m-xylene	*28*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 15:45*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1260	<0.37	* J	0.37	0.065	ug/L		02/16/17 09:00	02/24/17 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:41*	*1*
DCB Decachlorobiphenyl	*89*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:41*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.094**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:29	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:29	1
Arsenic	**0.0073**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Barium	**0.033**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:29	1
Calcium	**160**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:29	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:29	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Iron	**2.5**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:29	1
Magnesium	**43**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:29	1
Manganese	**1.2**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Nickel	**0.0066**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:29	1
Potassium	**14**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:29	1
Sodium	**380**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:29	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:29	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.064**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:34	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:34	1
Arsenic	**0.0094**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Barium	**0.036**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:34	1
Calcium	**180**	~~V~~ J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:34	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:34	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Iron	**2.7**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:34	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:34	1
Magnesium	**48**	~~V~~ J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:34	1
Manganese	**1.3**	~~V~~ J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Nickel	**0.0056**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:34	1
Potassium	**16**	~~V~~ J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:34	1
Selenium	<0.010	~~F1~~ J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:34	1
Sodium	**420**	~~V~~ J	1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:34	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:34	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.0**		1.0	0.18	mg/L			02/21/17 07:34	1
Sulfate	**530**	~~B~~	100	29	mg/L			02/20/17 09:26	20
Total Organic Carbon - Duplicates	**15**	~~B F1~~ J	1.0	0.27	mg/L			02/20/17 01:49	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			02/16/17 10:23	1
Ammonia	**7.7**		0.40	0.20	mg/L		02/16/17 18:50	02/17/17 00:00	2
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:53	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time
*	RPD of the LCS and LCSD exceeds the control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
V	Serial Dilution exceeds the control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500- 123929

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.1, 2.9

(optional)

Report To
Contact: Jack Kreitzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 - 579 - 3700
Fax:
E-Mail: Jack.Kreitzmeyer@arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI0C1B09.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
[illegible] to 4°
[illegible]°
[illegible]°
[illegible] to 4°

500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs Pesticides (8)	Total Metals (3)	Dissolved Metals (3)	Ammonia NO3/NO2 (6)	Sulfide (5)	TOC (2)	TSS, SO4 NO2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	Preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhofer	Arcadis	2-15-2017	1552	[illegible]	TA	2/15/17	1552
[illegible]	TA	2/15/17	1630	Luis Sandoz	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
"MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

2/28/2017
TAL-4124-500-(1209)

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-07-GW-02142017** Date Collected: 2/14/2017 15:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:13	MM	n
Carbon Dioxide	**62**	mg/l	5.0	0.24	1	2/24/2017 15:13	MM	n
Oxygen	**1.3**	mg/l	0.50	0.13	1	2/24/2017 15:13	MM	n
Nitrogen	**9.2**	mg/l	2.0	0.24	1	2/24/2017 15:13	MM	n

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-06-GW-02152017** Date Collected: 2/15/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:26	MM	n
Carbon Dioxide	**17**	mg/l	5.0	0.24	1	2/24/2017 15:26	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 15:26	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	2/24/2017 15:26	MM	n

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ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-05-GW-02152017** Date Collected: 2/15/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**19000**	ug/l	0.50	0.027	1	2/24/2017 15:39	MM	n
Carbon Dioxide	**320**	mg/l	5.0	0.24	1	2/24/2017 15:39	MM	n
Oxygen	**1.5**	mg/l	0.50	0.13	1	2/24/2017 15:39	MM	n
Nitrogen	**6.9**	mg/l	2.0	0.24	1	2/24/2017 15:39	MM	n

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Pittsburgh, PA 15238
Phone: (412) 826-5245
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ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-04-GW-02152017** Date Collected: 2/15/2017 11:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**17000**	ug/l	0.50	0.027	1	2/24/2017 15:52	MM	n
Carbon Dioxide	**200**	mg/l	5.0	0.24	1	2/24/2017 15:52	MM	n
Oxygen	**3.2**	mg/l	0.50	0.13	1	2/24/2017 15:52	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 15:52	MM	n

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21749 500-123929-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kreitzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-579-3700
Fax:
E-Mail: Jack.Kreitzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123929
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.1, 2.9

Client: Arcadis
Client Project #: CI0C1B09.0002.00085
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
to 4°
°
°
to 4°

500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	8 SVOCs, PCB Pesticide	3 Total Metals	3 Dissolved Metals	6 Ammonia NO3/NO2	5 Sulfide	2 TOC	8 TSS, SO4 NO2	1 VOC	9 Dissolved Gases	Comments
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	Preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhofer	Arcadis	2-15-2017	1552	[signature]	TA	2/15/17	1552
[signature]	TA	2/15/17	1630	Luis Sandoz	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
"MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<25	J	25	8.7	ug/L			02/23/17 18:27	5
Benzene	**57**		2.5	0.73	ug/L			02/23/17 18:27	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Bromoform	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Bromomethane	<10		10	4.0	ug/L			02/23/17 18:27	5
Carbon disulfide	<10		10	2.2	ug/L			02/23/17 18:27	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Chlorobenzene	**2.7**	**J**	5.0	1.9	ug/L			02/23/17 18:27	5
Chloroethane	<5.0		5.0	2.5	ug/L			02/23/17 18:27	5
Chloroform	<10		10	1.9	ug/L			02/23/17 18:27	5
Chloromethane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
cis-1,2-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Cyclohexane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			02/23/17 18:27	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,2-Dichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			02/23/17 18:27	5
1,1-Dichloroethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Ethylbenzene	**13**		2.5	0.92	ug/L			02/23/17 18:27	5
2-Hexanone	<25		25	7.8	ug/L			02/23/17 18:27	5
Isopropylbenzene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Methyl acetate	<25		25	10	ug/L			02/23/17 18:27	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
Methylene Chloride	<25		25	8.2	ug/L			02/23/17 18:27	5
Methyl Ethyl Ketone	<25		25	11	ug/L			02/23/17 18:27	5
methyl isobutyl ketone	<25		25	11	ug/L			02/23/17 18:27	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Styrene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Toluene	**29**		2.5	0.76	ug/L			02/23/17 18:27	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Trichloroethene	<2.5		2.5	0.82	ug/L			02/23/17 18:27	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			02/23/17 18:27	5
Vinyl chloride	<2.5		2.5	1.0	ug/L			02/23/17 18:27	5
Xylenes, Total	**63**		5.0	1.1	ug/L			02/23/17 18:27	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:27*	*5*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 18:27*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 18:27*	*5*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/23/17 18:27*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**20**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acenaphthylene	**1.9**		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Anthracene	**7.6**		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]anthracene	**0.39**		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]pyrene	**0.23**		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[b]fluoranthene	**0.19**		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 01:52	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 01:52	1
Chrysene	**0.36**		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenzofuran	**27**		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dimethylphenol	**17**		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 01:52	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluoranthene	**5.8**		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluorene	**43**		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorocyclopentadiene	<15	J	15	4.8	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 01:52	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 01:52	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Methylphenol	**2.2**		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
3 & 4 Methylphenol	**1.6**		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 01:52	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitroaniline	<7.5		7.5	1.2	ug/L		02/20/17 07:25	02/22/17 01:52	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodiphenylamine	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenanthrene	**36**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pyrene	**4.1**		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 01:52	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 01:52	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 01:52	1
1,1'-Biphenyl	**15**		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2-Fluorophenol (Surr)	*66*		*30 - 110*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Nitrobenzene-d5 (Surr)	*70*		*33 - 139*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Phenol-d5 (Surr)	*50*		*20 - 100*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	**71**	* JD	38	2.7	ug/L		02/20/17 07:25	02/23/17 02:43	10
2-Methylnaphthalene	**150**	D	15	0.49	ug/L		02/20/17 07:25	02/23/17 02:43	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**870**	D	38	12	ug/L		02/20/17 07:25	02/24/17 15:27	50

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:16	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:16	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:16	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:16	1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:16	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*76*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:16*	*1*
Tetrachloro-m-xylene	*105*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:16*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:02*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:02*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:40	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:35	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Barium	**1.1**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:40	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:35	1
Calcium	**94**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:40	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:35	1
Iron	**4.0**	~~**^ B**~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:35	1
Magnesium	**94**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:40	1
Manganese	**0.10**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Nickel	**0.0062**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:35	1
Potassium	**69**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:40	1
Selenium	**0.0055**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:35	1
Sodium	**300**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:44	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:39	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Barium	**0.95**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:44	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:44	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:39	1
Calcium	**86**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:44	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:39	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:39	1
Iron	**3.3**	~~^ B~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:44	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:39	1
Magnesium	**84**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:44	1
Manganese	**0.091**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Nickel	**0.0049**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:39	1
Potassium	**62**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:44	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:39	1
Sodium	**270**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:44	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:39	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:37	1
Sulfate	**5.0**	~~B~~ UB	5.0	1.5	mg/L			03/02/17 07:08	1
Total Organic Carbon - Duplicates	**22**		1.0	0.27	mg/L			02/17/17 00:38	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**11**		5.0	2.5	mg/L			02/17/17 13:08	1
Ammonia	**41**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:11	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.3**	J	5.0	1.7	ug/L			02/23/17 17:07	1
Benzene	**14**		0.50	0.15	ug/L			02/23/17 17:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 17:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 17:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 17:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
Chloroethane	**4.5**		1.0	0.51	ug/L			02/23/17 17:07	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 17:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 17:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichlorobenzene	**6.2**		1.0	0.33	ug/L			02/23/17 17:07	1
1,3-Dichlorobenzene	**4.1**		1.0	0.40	ug/L			02/23/17 17:07	1
1,4-Dichlorobenzene	**11**		1.0	0.36	ug/L			02/23/17 17:07	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 17:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
Ethylbenzene	**1.4**		0.50	0.18	ug/L			02/23/17 17:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Isopropylbenzene	**4.9**		1.0	0.39	ug/L			02/23/17 17:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 17:07	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 17:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 17:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Toluene	**0.84**		0.50	0.15	ug/L			02/23/17 17:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 17:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 17:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 17:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 17:07	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 17:07	1
Xylenes, Total	**3.9**		1.0	0.22	ug/L			02/23/17 17:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		02/23/17 17:07	1
Dibromofluoromethane	93		70 - 120		02/23/17 17:07	1
1,2-Dichloroethane-d4 (Surr)	101		71 - 127		02/23/17 17:07	1
Toluene-d8 (Surr)	98		75 - 120		02/23/17 17:07	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**480**	D	10	3.9	ug/L			02/23/17 17:34	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		02/23/17 17:34	10
Dibromofluoromethane	95		70 - 120		02/23/17 17:34	10
1,2-Dichloroethane-d4 (Surr)	103		71 - 127		02/23/17 17:34	10
Toluene-d8 (Surr)	99		75 - 120		02/23/17 17:34	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.0**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethyl)ether	**1.4**	J	1.5	0.22	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 02:21	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 02:21	1
Carbazole	<3.8	~~J~~	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chlorophenol	**4.9**		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 02:21	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 02:21	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 02:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
Fluorene	**0.67**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorocyclopentadiene	<15	J	15	4.8	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 02:21	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 02:21	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 02:21	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodiphenylamine	**7.1**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenanthrene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 02:21	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 02:21	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 02:21	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Nitrobenzene-d5 (Surr)	*62*		*33 - 139*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**100**	D	7.5	0.24	ug/L		02/20/17 07:25	02/23/17 03:10	5
Naphthalene	**73**	D	3.8	1.2	ug/L		02/20/17 07:25	02/23/17 03:10	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:35	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.038		0.038	0.0037	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:35	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:35	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:35	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:35*	*1*
Tetrachloro-m-xylene	*117*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:35*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*79*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:18*	*1*
DCB Decachlorobiphenyl	*72*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:18*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:49	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:44	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Barium	**0.34**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:44	1
Calcium	**98**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:49	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:44	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:44	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:44	1
Iron	**34**	~~^ B~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:49	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:44	1
Magnesium	**49**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.21		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Nickel	0.0045	J	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:44	1
Potassium	34		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:49	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:44	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:44	1
Sodium	160		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:49	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:44	1
Zinc	0.050		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:44	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:52	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Barium	0.36		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:52	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:48	1
Calcium	110		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:52	1
Chromium	0.0032	J	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:48	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:48	1
Iron	36	~~^ B~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:48	1
Magnesium	54		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:52	1
Manganese	0.23		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Nickel	0.0043	J	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:48	1
Potassium	37		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:52	1
Selenium	0.0069	J	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:48	1
Sodium	180		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:48	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.38	J	1.0	0.18	mg/L			02/21/17 07:39	1
Sulfate	5.0 ~~3.0~~	~~J B~~ UB	5.0	1.5	mg/L			03/02/17 07:09	1
Total Organic Carbon - Duplicates	19		1.0	0.27	mg/L			02/17/17 00:54	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	63		5.0	2.5	mg/L			02/17/17 13:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**46**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:14	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**55**		5.0	1.7	ug/L			02/23/17 04:42	1
Benzene	**30**		0.50	0.15	ug/L			02/23/17 04:42	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 04:42	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 04:42	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 04:42	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
Chlorobenzene	**5.8**		1.0	0.39	ug/L			02/23/17 04:42	1
Chloroethane	<1.0	J	1.0	0.51	ug/L			02/23/17 04:42	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 04:42	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 04:42	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 04:42	1
Cyclohexane	**1.6**		1.0	0.49	ug/L			02/23/17 04:42	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 04:42	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichlorobenzene	**1.8**		1.0	0.33	ug/L			02/23/17 04:42	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
1,4-Dichlorobenzene	**3.6**		1.0	0.36	ug/L			02/23/17 04:42	1
Dichlorodifluoromethane	<2.0	J	2.0	0.67	ug/L			02/23/17 04:42	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
Ethylbenzene	**24**		0.50	0.18	ug/L			02/23/17 04:42	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Isopropylbenzene	**14**		1.0	0.39	ug/L			02/23/17 04:42	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
Methylcyclohexane	**1.8**		1.0	0.32	ug/L			02/23/17 04:42	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Methyl Ethyl Ketone	**46**		5.0	2.1	ug/L			02/23/17 04:42	1
methyl isobutyl ketone	**99**		5.0	2.2	ug/L			02/23/17 04:42	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Toluene	**11**		0.50	0.15	ug/L			02/23/17 04:42	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 04:42	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 04:42	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 04:42	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 04:42	1
Vinyl chloride	**0.48**	**J**	0.50	0.20	ug/L			02/23/17 04:42	1
Xylenes, Total	**23**		1.0	0.22	ug/L			02/23/17 04:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/23/17 04:42*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*02/23/17 04:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 04:42*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 04:42*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.77	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acenaphthylene	<0.77		0.77	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acetophenone	**2.0**	J	3.8	0.51	ug/L		02/23/17 22:30	02/24/17 14:30	1
Anthracene	**0.26**	J	0.77	0.26	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]pyrene	<0.15		0.15	0.076	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.062	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[g,h,i]perylene	<0.77		0.77	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-ethylhexyl) phthalate	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/23/17 22:30	02/24/17 14:30	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		02/23/17 22:30	02/24/17 14:30	1
Carbazole	**6.4**	* J	3.8	0.27	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloroaniline	**13**		7.7	1.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloro-3-methylphenol	<7.7		7.7	1.8	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.49	ug/L		02/23/17 22:30	02/24/17 14:30	1
Chrysene	<0.15		0.15	0.052	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenzofuran	**1.4**	J	1.5	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dimethylphenol	**6.7**	J	7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		02/23/17 22:30	02/24/17 14:30	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrophenol	<15		15	6.6	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrotoluene	<0.77		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,6-Dinitrotoluene	<0.77		0.77	0.056	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-octyl phthalate	<7.7		7.7	0.80	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluoranthene	<0.77		0.77	0.35	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluorene	**2.6**		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobenzene	<0.38		0.38	0.061	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorocyclopentadiene	<15	J	15	4.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		02/23/17 22:30	02/24/17 14:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		02/23/17 22:30	02/24/17 14:30	1
Isophorone	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Methylnaphthalene	**5.5**		1.5	0.050	ug/L		02/23/17 22:30	02/24/17 14:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.5**		1.5	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
3 & 4 Methylphenol	**6.6**		1.5	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitroaniline	<3.8		3.8	0.99	ug/L		02/23/17 22:30	02/24/17 14:30	1
3-Nitroaniline	<7.7		7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitroaniline	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
Nitrobenzene	<0.77		0.77	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitrophenol	<7.7		7.7	1.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitrophenol	<15		15	5.7	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodiphenylamine	<0.77		0.77	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pentachlorophenol	<15	J	15	3.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Phenanthrene	**1.3**		0.77	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pyrene	<0.77		0.77	0.33	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,5-Trichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzaldehyde	<31	J	31	12	ug/L		02/23/17 22:30	02/24/17 14:30	1
Caprolactam	<7.7		7.7	1.1	ug/L		02/23/17 22:30	02/24/17 14:30	1
Atrazine	<3.8		3.8	0.48	ug/L		02/23/17 22:30	02/24/17 14:30	1
1,1'-Biphenyl	<3.8		3.8	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*30 - 123*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Nitrobenzene-d5 (Surr)	*67*		*33 - 139*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Phenol-d5 (Surr)	*41*		*20 - 100*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**130**	D	3.8	1.2	ug/L		02/23/17 22:30	02/24/17 14:58	5
Phenol	**72**	D	19	2.6	ug/L		02/23/17 22:30	02/24/17 14:58	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/17/17 21:00	02/20/17 23:54	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/17/17 21:00	02/20/17 23:54	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/17/17 21:00	02/20/17 23:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/17/17 21:00	02/20/17 23:54	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:54*	*1*
Tetrachloro-m-xylene	*73*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/17/17 21:00	02/20/17 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:33*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:33*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.34**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 20:57	1
Antimony	**0.0068**	**J**	0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:57	1
Arsenic	**0.0038**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Barium	**0.46**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:57	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 20:57	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:57	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 20:57	1
Lead	**0.0027**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:57	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 20:57	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:57	1
Potassium	**51**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 20:57	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:57	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 20:57	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:57	1
Zinc	**0.012**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.21**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:01	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:01	1
Arsenic	**0.0046**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:01	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:01	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:01	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:01	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:01	1
Magnesium	<0.10		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:01	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:01	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:01	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:01	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:01	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:01	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.98**	**J**	1.0	0.18	mg/L			02/21/17 07:42	1
Sulfate	**24**	~~**B**~~	5.0	1.5	mg/L			03/02/17 07:12	1
Total Organic Carbon - Duplicates	**31**		1.0	0.27	mg/L			02/17/17 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**29**		5.0	2.5	mg/L			02/17/17 13:14	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:17	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			02/23/17 05:09	10
Benzene	**410**		5.0	1.5	ug/L			02/23/17 05:09	10
Bromodichloromethane	<10		10	3.7	ug/L			02/23/17 05:09	10
Bromoform	<10		10	4.8	ug/L			02/23/17 05:09	10
Bromomethane	<20		20	8.0	ug/L			02/23/17 05:09	10
Carbon disulfide	<20		20	4.5	ug/L			02/23/17 05:09	10
Carbon tetrachloride	<10		10	3.8	ug/L			02/23/17 05:09	10
Chlorobenzene	<10		10	3.9	ug/L			02/23/17 05:09	10
Chloroethane	<10	J	10	5.1	ug/L			02/23/17 05:09	10
Chloroform	<20		20	3.7	ug/L			02/23/17 05:09	10
Chloromethane	<10		10	3.2	ug/L			02/23/17 05:09	10
cis-1,2-Dichloroethene	**37**		10	4.1	ug/L			02/23/17 05:09	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			02/23/17 05:09	10
Cyclohexane	<10		10	4.9	ug/L			02/23/17 05:09	10
Dibromochloromethane	<10		10	4.9	ug/L			02/23/17 05:09	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			02/23/17 05:09	10
1,2-Dibromoethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichlorobenzene	**18**		10	3.3	ug/L			02/23/17 05:09	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			02/23/17 05:09	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			02/23/17 05:09	10
Dichlorodifluoromethane	<20	J	20	6.7	ug/L			02/23/17 05:09	10
1,1-Dichloroethane	<10		10	4.1	ug/L			02/23/17 05:09	10
1,2-Dichloroethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1-Dichloroethene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichloropropane	<10		10	4.3	ug/L			02/23/17 05:09	10
Ethylbenzene	**1300**		5.0	1.8	ug/L			02/23/17 05:09	10
2-Hexanone	<50		50	16	ug/L			02/23/17 05:09	10
Isopropylbenzene	**100**		10	3.9	ug/L			02/23/17 05:09	10
Methyl acetate	<50		50	20	ug/L			02/23/17 05:09	10
Methylcyclohexane	<10		10	3.2	ug/L			02/23/17 05:09	10
Methylene Chloride	<50		50	16	ug/L			02/23/17 05:09	10
Methyl Ethyl Ketone	<50		50	21	ug/L			02/23/17 05:09	10
methyl isobutyl ketone	<50		50	22	ug/L			02/23/17 05:09	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			02/23/17 05:09	10
Styrene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			02/23/17 05:09	10
Tetrachloroethene	<10		10	3.7	ug/L			02/23/17 05:09	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			02/23/17 05:09	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			02/23/17 05:09	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			02/23/17 05:09	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			02/23/17 05:09	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			02/23/17 05:09	10
Trichloroethene	<5.0		5.0	1.6	ug/L			02/23/17 05:09	10
Trichlorofluoromethane	<10		10	4.3	ug/L			02/23/17 05:09	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			02/23/17 05:09	10
Vinyl chloride	**11**		5.0	2.0	ug/L			02/23/17 05:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/23/17 05:09*	*10*

TestAmerica Chicago

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 05:09*	*10*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 05:09*	*10*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 05:09*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**2600**	D	50	15	ug/L			02/23/17 05:36	100
Xylenes, Total	**8400**	D	100	22	ug/L			02/23/17 05:36	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/23/17 05:36*	*100*
Dibromofluoromethane	*91*		*70 - 120*		*02/23/17 05:36*	*100*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 05:36*	*100*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/23/17 05:36*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.86**		0.74	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acenaphthylene	**2.3**		0.74	0.20	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acetophenone	**32**		3.7	0.49	ug/L		02/22/17 12:03	02/23/17 00:54	1
Anthracene	**0.29**	J	0.74	0.25	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]anthracene	<0.15	J	0.15	0.042	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-ethylhexyl) phthalate	**2.9**	J	7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Bromophenyl phenyl ether	<3.7	J	3.7	0.40	ug/L		02/22/17 12:03	02/23/17 00:54	1
Butyl benzyl phthalate	**1.3**	J	1.5	0.35	ug/L		02/22/17 12:03	02/23/17 00:54	1
Carbazole	<3.7	J	3.7	0.26	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/22/17 12:03	02/23/17 00:54	1
Chrysene	<0.15		0.15	0.050	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenz(a,h)anthracene	<0.22	J	0.22	0.037	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/22/17 12:03	02/23/17 00:54	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Diethyl phthalate	**11**		1.5	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dimethylphenol	**42**		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Di-n-butyl phthalate	**3.9**		3.7	0.54	ug/L		02/22/17 12:03	02/23/17 00:54	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/22/17 12:03	02/23/17 00:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluorene	**1.2**		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/22/17 12:03	02/23/17 00:54	1
Indeno[1,2,3-cd]pyrene	<0.15	* J	0.15	0.055	ug/L		02/22/17 12:03	02/23/17 00:54	1
Isophorone	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylnaphthalene	**11**		1.5	0.048	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
3 & 4 Methylphenol	**40**		1.5	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/22/17 12:03	02/23/17 00:54	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/22/17 12:03	02/23/17 00:54	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitrophenol	<15		15	5.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodiphenylamine	**11**		0.74	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenanthrene	**0.86**		0.74	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenol	**39**		3.7	0.50	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pyrene	<0.74		0.74	0.31	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,6-Trichlorophenol	**1.3**	**J**	3.7	0.53	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzaldehyde	<30	* J	30	11	ug/L		02/22/17 12:03	02/23/17 00:54	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/22/17 12:03	02/23/17 00:54	1
Atrazine	<3.7		3.7	0.46	ug/L		02/22/17 12:03	02/23/17 00:54	1
1,1'-Biphenyl	**2.0**	**J**	3.7	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*30 - 123*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2-Fluorophenol (Surr)	*21*	*X*	*30 - 110*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Terphenyl-d14 (Surr)	*82*		*42 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*30 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**190**	D	7.4	2.3	ug/L		02/22/17 12:03	02/23/17 01:21	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/21/17 00:13	1
beta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/21/17 00:13	1
delta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/21/17 00:13	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Methoxychlor	<0.076		0.076	0.022	ug/L		02/17/17 21:00	02/21/17 00:13	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:13*	*1*
Tetrachloro-m-xylene	*40*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:48*	*1*
DCB Decachlorobiphenyl	*58*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:07	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:07	1
Arsenic	**0.0074**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Barium	**0.25**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:07	1
Calcium	**100**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:07	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:07	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Iron	**4.8**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:07	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**47**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:07	1
Manganese	**0.24**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Nickel	**0.014**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:07	1
Potassium	**67**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:07	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:07	1
Sodium	**230**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:07	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Vanadium	**0.0028**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:07	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:13	1
Arsenic	**0.0070**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Barium	**0.25**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:13	1
Calcium	**100**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:13	1
Chromium	**0.0027**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cobalt	**0.0020**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:13	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Iron	**4.3**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:13	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:13	1
Magnesium	**48**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:13	1
Manganese	**0.24**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Nickel	**0.014**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:13	1
Potassium	**69**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:13	1
Selenium	**0.0063**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:13	1
Sodium	**240**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:13	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Vanadium	**0.0025**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:13	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.4**		1.0	0.18	mg/L			02/21/17 07:44	1
Sulfate	**100**	~~**B**~~	25	7.4	mg/L			03/02/17 07:13	5
Total Organic Carbon - Duplicates	**61**	~~**B**~~	2.0	0.53	mg/L			02/21/17 00:31	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**20**		5.0	2.5	mg/L			02/17/17 13:15	1
Ammonia	**57**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:25	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/23/17 18:00	1
Benzene	**81**		0.50	0.15	ug/L			02/23/17 18:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 18:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 18:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 18:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
Chlorobenzene	**11**		1.0	0.39	ug/L			02/23/17 18:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 18:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 18:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 18:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 18:00	1
Cyclohexane	**110**		1.0	0.49	ug/L			02/23/17 18:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 18:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichlorobenzene	**1.2**		1.0	0.33	ug/L			02/23/17 18:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
1,4-Dichlorobenzene	**3.8**		1.0	0.36	ug/L			02/23/17 18:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 18:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
Ethylbenzene	**3.1**		0.50	0.18	ug/L			02/23/17 18:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Isopropylbenzene	**61**		1.0	0.39	ug/L			02/23/17 18:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
Methylcyclohexane	**170**		1.0	0.32	ug/L			02/23/17 18:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 18:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 18:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Toluene	**0.82**		0.50	0.15	ug/L			02/23/17 18:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 18:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 18:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 18:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 18:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 18:00	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/23/17 18:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:00*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/23/17 18:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*71 - 127*		*02/23/17 18:00*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/23/17 18:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.23**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Anthracene	<0.73		0.73	0.25	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 01:49	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 01:49	1
Carbazole	<3.7	J	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 01:49	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/23/17 01:49	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Diethyl phthalate	**0.64**	**J**	1.5	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-butyl phthalate	**0.69**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 01:49	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 01:49	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 01:49	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Methylnaphthalene	**3.7**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 01:49	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
3 & 4 Methylphenol	**3.2**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Naphthalene	**2.4**		0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 01:49	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/23/17 01:49	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodiphenylamine	**1.7**		0.73	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenol	**0.73**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzaldehyde	<29	^ J	29	11	ug/L		02/20/17 07:25	02/23/17 01:49	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/23/17 01:49	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 01:49	1
1,1'-Biphenyl	**0.99**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*41*		*30 - 123*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Terphenyl-d14 (Surr)	*63*		*42 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2,4,6-Tribromophenol (Surr)	*60*		*30 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/17/17 21:00	02/21/17 00:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/17/17 21:00	02/21/17 00:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/17/17 21:00	02/21/17 00:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/17/17 21:00	02/21/17 00:33	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/17/17 21:00	02/21/17 00:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/21/17 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*60*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:33*	*1*
Tetrachloro-m-xylene	*67*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1260	<0.37		0.37	0.065	ug/L		02/17/17 21:00	02/20/17 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:04*	*1*
DCB Decachlorobiphenyl	*46*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:19	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:19	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:19	1
Chromium	**0.0073**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:19	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Iron	**29**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:19	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:19	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Nickel	**0.020**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:19	1
Potassium	**110**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:19	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:19	1
Sodium	**380**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:19	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Vanadium	**0.0050**		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:19	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:26	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:26	1
Chromium	**0.0076**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Iron	**28**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:26	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:26	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Nickel	**0.019**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:26	1
Potassium	**120**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:26	1
Selenium	**0.0068**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:26	1
Sodium	**390**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Vanadium	**0.0042**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:47	1
Sulfate	**7.2**	~~**B**~~ UB	5.0	1.5	mg/L			03/02/17 07:14	1
Total Organic Carbon - Duplicates	**36**		1.0	0.27	mg/L			02/17/17 01:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**100**		5.0	2.5	mg/L			02/17/17 13:16	1
Ammonia	**59**		5.0	2.5	mg/L		02/17/17 19:00	02/17/17 22:28	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**59**	J	5.0	1.7	ug/L			02/23/17 06:03	1
Benzene	**30**	J	0.50	0.15	ug/L			02/23/17 06:03	1
Bromodichloromethane	<1.0	R	1.0	0.37	ug/L			02/23/17 06:03	1
Bromoform	<1.0	R	1.0	0.48	ug/L			02/23/17 06:03	1
Bromomethane	<2.0	R	2.0	0.80	ug/L			02/23/17 06:03	1
Carbon disulfide	<2.0	R	2.0	0.45	ug/L			02/23/17 06:03	1
Carbon tetrachloride	<1.0	R	1.0	0.38	ug/L			02/23/17 06:03	1
Chlorobenzene	**5.7**	J	1.0	0.39	ug/L			02/23/17 06:03	1
Chloroethane	<1.0	R	1.0	0.51	ug/L			02/23/17 06:03	1
Chloroform	<2.0	R	2.0	0.37	ug/L			02/23/17 06:03	1
Chloromethane	<1.0	R	1.0	0.32	ug/L			02/23/17 06:03	1
cis-1,2-Dichloroethene	<1.0	R	1.0	0.41	ug/L			02/23/17 06:03	1
cis-1,3-Dichloropropene	<1.0	R	1.0	0.42	ug/L			02/23/17 06:03	1
Cyclohexane	**1.5**	J	1.0	0.49	ug/L			02/23/17 06:03	1
Dibromochloromethane	<1.0	R	1.0	0.49	ug/L			02/23/17 06:03	1
1,2-Dibromo-3-Chloropropane	<5.0	R	5.0	2.0	ug/L			02/23/17 06:03	1
1,2-Dibromoethane	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichlorobenzene	**1.7**	J	1.0	0.33	ug/L			02/23/17 06:03	1
1,3-Dichlorobenzene	<1.0	R	1.0	0.40	ug/L			02/23/17 06:03	1
1,4-Dichlorobenzene	**3.6**	J	1.0	0.36	ug/L			02/23/17 06:03	1
Dichlorodifluoromethane	<2.0	R	2.0	0.67	ug/L			02/23/17 06:03	1
1,1-Dichloroethane	<1.0	R	1.0	0.41	ug/L			02/23/17 06:03	1
1,2-Dichloroethane	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,1-Dichloroethene	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichloropropane	<1.0	R	1.0	0.43	ug/L			02/23/17 06:03	1
Ethylbenzene	**25**	J	0.50	0.18	ug/L			02/23/17 06:03	1
2-Hexanone	<5.0	R	5.0	1.6	ug/L			02/23/17 06:03	1
Isopropylbenzene	**13**	J	1.0	0.39	ug/L			02/23/17 06:03	1
Methyl acetate	<5.0	R	5.0	2.0	ug/L			02/23/17 06:03	1
Methylcyclohexane	**1.9**	J	1.0	0.32	ug/L			02/23/17 06:03	1
Methylene Chloride	<5.0	R	5.0	1.6	ug/L			02/23/17 06:03	1
Methyl Ethyl Ketone	**45**	J	5.0	2.1	ug/L			02/23/17 06:03	1
methyl isobutyl ketone	**99**	J	5.0	2.2	ug/L			02/23/17 06:03	1
Methyl tert-butyl ether	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
Styrene	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,1,2,2-Tetrachloroethane	<1.0	R	1.0	0.40	ug/L			02/23/17 06:03	1
Tetrachloroethene	<1.0	R	1.0	0.37	ug/L			02/23/17 06:03	1
Toluene	**11**	J	0.50	0.15	ug/L			02/23/17 06:03	1
trans-1,2-Dichloroethene	<1.0	R	1.0	0.35	ug/L			02/23/17 06:03	1
trans-1,3-Dichloropropene	<1.0	R	1.0	0.36	ug/L			02/23/17 06:03	1
1,2,4-Trichlorobenzene	<1.0	R	1.0	0.34	ug/L			02/23/17 06:03	1
1,1,1-Trichloroethane	<1.0	R	1.0	0.38	ug/L			02/23/17 06:03	1
1,1,2-Trichloroethane	<1.0	R	1.0	0.35	ug/L			02/23/17 06:03	1
Trichloroethene	<0.50	R	0.50	0.16	ug/L			02/23/17 06:03	1
Trichlorofluoromethane	<1.0	R	1.0	0.43	ug/L			02/23/17 06:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	R	1.0	0.46	ug/L			02/23/17 06:03	1
Vinyl chloride	**0.45**	J	0.50	0.20	ug/L			02/23/17 06:03	1
Xylenes, Total	**24**	J	1.0	0.22	ug/L			02/23/17 06:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/23/17 06:03*	*1*
Dibromofluoromethane	*9*	*X*	*70 - 120*		*02/23/17 06:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 06:03*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/23/17 06:03*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.74	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acetophenone	**1.4**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 02:16	1
Anthracene	<0.74		0.74	0.25	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 02:16	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 02:16	1
Carbazole	**4.3**	~~*~~ J	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 02:16	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenzofuran	**1.3**	**J**	1.5	0.19	ug/L		02/20/17 07:25	02/23/17 02:16	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dimethylphenol	**5.5**	**J**	7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-butyl phthalate	**0.75**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 02:16	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluorene	**2.4**		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 02:16	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 02:16	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Methylnaphthalene	**4.3**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 02:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	J	1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
3 & 4 Methylphenol	**6.3**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 02:16	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/20/17 07:25	02/23/17 02:16	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Phenanthrene	**1.2**		0.74	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pyrene	<0.74		0.74	0.31	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzaldehyde	<30	J	30	11	ug/L		02/20/17 07:25	02/23/17 02:16	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/20/17 07:25	02/23/17 02:16	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 02:16	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*37*		*30 - 123*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2-Fluorophenol (Surr)	*41*		*30 - 110*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Nitrobenzene-d5 (Surr)	*33*		*33 - 139*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Phenol-d5 (Surr)	*40*		*20 - 100*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Terphenyl-d14 (Surr)	*71*		*42 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*30 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**120**	D	3.7	1.1	ug/L		02/20/17 07:25	02/24/17 15:56	5
Phenol	**96**	D	18	2.5	ug/L		02/20/17 07:25	02/24/17 15:56	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0050	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-BHC	<0.038		0.038	0.0024	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-Chlordane	<0.038		0.038	0.0041	ug/L		02/17/17 21:00	02/21/17 00:52	1
beta-BHC	<0.038		0.038	0.0096	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDT	<0.038		0.038	0.0030	ug/L		02/17/17 21:00	02/21/17 00:52	1
delta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:52	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan II	<0.038		0.038	0.0026	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin aldehyde	<0.038		0.038	0.0077	ug/L		02/17/17 21:00	02/21/17 00:52	1

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-Chlordane	<0.038		0.038	0.0068	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Methoxychlor	<0.075		0.075	0.022	ug/L		02/17/17 21:00	02/21/17 00:52	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:52*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.063	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1260	<0.38		0.38	0.066	ug/L		02/17/17 21:00	02/20/17 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:19*	*1*
DCB Decachlorobiphenyl	*70*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.33**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:31	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:31	1
Arsenic	**0.0066**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:31	1
Calcium	**500**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:31	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:31	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Iron	**0.12**	**J**	0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:31	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:31	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:31	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Nickel	**0.015**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:31	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:31	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:31	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:31	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Vanadium	**0.0020**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:31	1
Zinc	**0.010**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.22**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:35	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:35	1
Arsenic	**0.0048**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Barium	**0.47**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:35	1
Calcium	**530**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:35	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:35	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:35	1
Magnesium	**0.043**	**J**	0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:35	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:35	1
Potassium	**52**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:35	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:35	1
Sodium	**220**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:35	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Vanadium	**0.0021**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 11:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.5**	J	1.0	0.18	mg/L			02/21/17 07:50	1
Sulfate	**22**	~~B~~	5.0	1.5	mg/L			03/02/17 07:15	1
Total Organic Carbon - Duplicates	**30**		1.0	0.27	mg/L			02/17/17 02:00	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/17/17 13:18	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 23:33	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:46	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:19	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
X	Surrogate is outside control limits
*	ISTD response or retention time outside acceptable limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOH, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	2-16-2017	1455	[signature]	TA	2/16/17	1455
[signature]	TA	2/16/17	1535	[signature]	TALHT	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TA-IL-A-0001 (Rev. 3.0) 3/8/2017

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-03-GW-02152017** Date Collected: 2/15/2017 13:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**22000**	ug/l	0.50	0.027	1	2/24/2017 13:48	MM	n
Carbon Dioxide	**80**	mg/l	5.0	0.24	1	2/24/2017 13:48	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	2/24/2017 13:48	MM	n
Nitrogen	**9.1**	mg/l	2.0	0.24	1	2/24/2017 13:48	MM	n

CERTIFICATE OF ANALYSIS
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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-02-GW-02152017** Date Collected: 2/15/2017 16:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**16000**	ug/l	0.50	0.027	1	2/24/2017 14:04	MM	n
Carbon Dioxide	**360**	mg/l	5.0	0.24	1	2/24/2017 14:04	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:04	MM	n
Nitrogen	**8.9**	mg/l	2.0	0.24	1	2/24/2017 14:04	MM	n

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Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-01-GW-02162017** Date Collected: 2/16/2017 07:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	2/24/2017 14:17	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:17	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:17	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:17	MM	n

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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-13-GW-02162017** Date Collected: 2/16/2017 10:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**23000**	ug/l	0.50	0.027	1	2/24/2017 14:30	MM	n
Carbon Dioxide	**64**	mg/l	5.0	0.24	1	2/24/2017 14:30	MM	n
Oxygen	**1.4**	mg/l	0.50	0.13	1	2/24/2017 14:30	MM	n
Nitrogen	**7.9**	mg/l	2.0	0.24	1	2/24/2017 14:30	MM	n

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Pittsburgh, PA 15238
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ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480005** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-11-GW-02162017** Date Collected: 2/16/2017 13:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**18000**	ug/l	0.50	0.027	1	2/24/2017 14:43	MM	n
Carbon Dioxide	**210**	mg/l	5.0	0.24	1	2/24/2017 14:43	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:43	MM	n
Nitrogen	**9.5**	mg/l	2.0	0.24	1	2/24/2017 14:43	MM	n

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Pittsburgh, PA 15238
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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480006** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **DUP-1-02162017** Date Collected: 2/16/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 14:57	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:57	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:57	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:57	MM	n

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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21748 500-123998-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°

500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative: 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOM, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thum	Arcadis	2-16-2017	1455	[illegible]	TA	2/16/17	1455
[illegible]	TA	2/16/17	1535	[illegible]	TALH	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

APPENDIX G

Seep Investigation Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-122773-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
1/24/2017 2:12:25 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Job ID: 500-122773-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-122773-1

Comments
No additional comments.

Receipt
The samples were received on 1/19/2017 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

GC/MS VOA
Method(s) 8260B: The matrix spike duplicate for sample -3 was analyzed 13 minutes outside the 12 hour tune time:C-1-011917 (500-122773-3). All QC were within limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917 — Lab Sample ID: 500-122773-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.20		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.028		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	67		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	0.69		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	24		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.13		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	7.1		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	38		1.0	0.43	mg/L	1		6010C	Total/NA
Ammonia	0.29		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: B-2-011917 — Lab Sample ID: 500-122773-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.50		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	3.1		1.0	0.39	ug/L	1		8260B	Total/NA
Barium	0.068		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	1.1		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	32		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.33		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	12		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	190		1.0	0.43	mg/L	1		6010C	Total/NA
Ammonia	3.3		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: C-1-011917 — Lab Sample ID: 500-122773-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.2		5.0	1.7	ug/L	1		8260B	Total/NA
Aluminum	0.14	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.066		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	170		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	1.5		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	54		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.35		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	9.0		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	52		1.0	0.43	mg/L	1		6010C	Total/NA
Ammonia	2.3		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-122773-4

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-122773-1	B-1-011917	Water	01/19/17 10:15	01/19/17 12:20
500-122773-2	B-2-011917	Water	01/19/17 10:40	01/19/17 12:20
500-122773-3	C-1-011917	Water	01/19/17 10:55	01/19/17 12:20
500-122773-4	Trip Blank	Water	01/19/17 00:00	01/19/17 12:20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917

Date Collected: 01/19/17 10:15
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 17:05	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 17:05	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 17:05	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 17:05	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 17:05	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 17:05	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 17:05	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 17:05	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 17:05	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 17:05	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 17:05	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 17:05	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 17:05	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 17:05	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 17:05	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 17:05	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 17:05	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 17:05	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 17:05	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 17:05	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 17:05	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 17:05	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 17:05	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 17:05	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 17:05	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 17:05	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 17:05	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 17:05	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 17:05	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 17:05	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 17:05	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 17:05	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 17:05	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 17:05	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 17:05	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 17:05	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 17:05	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 17:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 17:05	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 17:05	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 17:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917

Date Collected: 01/19/17 10:15
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*01/20/17 17:05*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*01/20/17 17:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*01/20/17 17:05*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*01/20/17 17:05*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.20**		0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:31	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:31	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:31	1
Barium	**0.028**		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:31	1
Calcium	**67**		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:31	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:31	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:31	1
Iron	**0.69**		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:31	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:31	1
Magnesium	**24**		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:31	1
Manganese	**0.13**		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:31	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:31	1
Potassium	**7.1**		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:31	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:31	1
Sodium	**38**		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:31	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:31	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**0.29**		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-2-011917

Date Collected: 01/19/17 10:40
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 17:32	1
Benzene	**0.50**		0.50	0.15	ug/L			01/20/17 17:32	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 17:32	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 17:32	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 17:32	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 17:32	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 17:32	1
Chlorobenzene	**3.1**		1.0	0.39	ug/L			01/20/17 17:32	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 17:32	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 17:32	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 17:32	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 17:32	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 17:32	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 17:32	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 17:32	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 17:32	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 17:32	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 17:32	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 17:32	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 17:32	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 17:32	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 17:32	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 17:32	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 17:32	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 17:32	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 17:32	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 17:32	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 17:32	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 17:32	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 17:32	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 17:32	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 17:32	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 17:32	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 17:32	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 17:32	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 17:32	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 17:32	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 17:32	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 17:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 17:32	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 17:32	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 17:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-2-011917

Date Collected: 01/19/17 10:40
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*01/20/17 17:32*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*01/20/17 17:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*01/20/17 17:32*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*01/20/17 17:32*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:36	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:36	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:36	1
Barium	**0.068**		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:36	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:36	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:36	1
Calcium	**130**		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:36	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:36	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:36	1
Copper	<0.010		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:36	1
Iron	**1.1**		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:36	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:36	1
Magnesium	**32**		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:36	1
Manganese	**0.33**		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:36	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:36	1
Potassium	**12**		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:36	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:36	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:36	1
Sodium	**190**		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:36	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:36	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:36	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**3.3**		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: C-1-011917

Date Collected: 01/19/17 10:55
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	6.2		5.0	1.7	ug/L			01/20/17 17:59	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 17:59	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 17:59	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 17:59	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 17:59	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 17:59	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 17:59	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 17:59	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 17:59	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 17:59	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 17:59	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 17:59	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 17:59	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 17:59	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 17:59	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 17:59	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 17:59	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 17:59	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 17:59	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 17:59	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 17:59	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 17:59	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 17:59	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 17:59	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 17:59	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 17:59	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 17:59	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 17:59	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 17:59	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 17:59	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 17:59	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 17:59	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 17:59	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 17:59	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 17:59	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 17:59	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 17:59	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 17:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 17:59	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 17:59	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 17:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: C-1-011917

Date Collected: 01/19/17 10:55
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*01/20/17 17:59*	*1*
Dibromofluoromethane	*91*		*70 - 120*		*01/20/17 17:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*01/20/17 17:59*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*01/20/17 17:59*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.14**	**J**	0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:40	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:40	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:40	1
Barium	**0.066**		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:40	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:40	1
Calcium	**170**		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:40	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:40	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:40	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:40	1
Iron	**1.5**		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:40	1
Magnesium	**54**		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:40	1
Manganese	**0.35**		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:40	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:40	1
Potassium	**9.0**		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:40	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:40	1
Sodium	**52**		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:40	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:40	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:40	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**2.3**		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:44	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: Trip Blank

Date Collected: 01/19/17 00:00
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 18:26	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 18:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 18:26	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 18:26	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 18:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 18:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 18:26	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 18:26	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 18:26	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 18:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 18:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 18:26	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 18:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 18:26	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 18:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 18:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 18:26	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 18:26	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 18:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 18:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 18:26	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 18:26	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 18:26	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 18:26	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 18:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 18:26	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 18:26	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 18:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 18:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 18:26	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 18:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 18:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 18:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 18:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 18:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 18:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 18:26	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 18:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 18:26	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 18:26	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 18:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: Trip Blank

Date Collected: 01/19/17 00:00
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-4

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		71 - 120		01/20/17 18:26	1
Dibromofluoromethane	91		70 - 120		01/20/17 18:26	1
1,2-Dichloroethane-d4 (Surr)	109		71 - 127		01/20/17 18:26	1
Toluene-d8 (Surr)	92		75 - 120		01/20/17 18:26	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

GC/MS VOA

Analysis Batch: 369233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	8260B	
500-122773-2	B-2-011917	Total/NA	Water	8260B	
500-122773-3	C-1-011917	Total/NA	Water	8260B	
500-122773-4	Trip Blank	Total/NA	Water	8260B	
MB 500-369233/6	Method Blank	Total/NA	Water	8260B	
LCS 500-369233/4	Lab Control Sample	Total/NA	Water	8260B	
500-122773-3 MS	C-1-011917	Total/NA	Water	8260B	
500-122773-3 MSD	C-1-011917	Total/NA	Water	8260B	

Metals

Prep Batch: 369156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	3010A	
500-122773-2	B-2-011917	Total/NA	Water	3010A	
500-122773-3	C-1-011917	Total/NA	Water	3010A	
MB 500-369156/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-369156/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 369265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	7470A	
500-122773-2	B-2-011917	Total/NA	Water	7470A	
500-122773-3	C-1-011917	Total/NA	Water	7470A	
MB 500-369265/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-369265/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 369326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	7470A	369265
500-122773-2	B-2-011917	Total/NA	Water	7470A	369265
500-122773-3	C-1-011917	Total/NA	Water	7470A	369265
MB 500-369265/12-A	Method Blank	Total/NA	Water	7470A	369265
LCS 500-369265/13-A	Lab Control Sample	Total/NA	Water	7470A	369265

Analysis Batch: 369361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	6010C	369156
500-122773-2	B-2-011917	Total/NA	Water	6010C	369156
500-122773-3	C-1-011917	Total/NA	Water	6010C	369156
MB 500-369156/1-A	Method Blank	Total/NA	Water	6010C	369156
LCS 500-369156/2-A	Lab Control Sample	Total/NA	Water	6010C	369156

General Chemistry

Prep Batch: 369367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	SM 4500 NH3 B	
500-122773-2	B-2-011917	Total/NA	Water	SM 4500 NH3 B	
500-122773-3	C-1-011917	Total/NA	Water	SM 4500 NH3 B	

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

General Chemistry (Continued)

Prep Batch: 369367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-369367/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-369367/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
500-122773-2 MS	B-2-011917	Total/NA	Water	SM 4500 NH3 B	
500-122773-2 MSD	B-2-011917	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 369407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-2	B-2-011917	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-3	C-1-011917	Total/NA	Water	SM 4500 NH3 G	369367
MB 500-369367/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	369367
LCS 500-369367/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-2 MS	B-2-011917	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-2 MSD	B-2-011917	Total/NA	Water	SM 4500 NH3 G	369367

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-122773-1	B-1-011917	95	90	109	93
500-122773-2	B-2-011917	95	95	113	92
500-122773-3	C-1-011917	97	91	113	93
500-122773-3 MS	C-1-011917	95	95	109	94
500-122773-3 MSD	C-1-011917	93	96	110	93
500-122773-4	Trip Blank	98	91	109	92
LCS 500-369233/4	Lab Control Sample	95	94	109	94
MB 500-369233/6	Method Blank	96	90	109	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-369233/6
Matrix: Water
Analysis Batch: 369233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 09:48	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 09:48	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 09:48	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 09:48	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 09:48	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 09:48	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 09:48	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 09:48	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 09:48	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 09:48	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 09:48	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 09:48	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 09:48	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 09:48	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 09:48	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 09:48	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 09:48	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 09:48	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 09:48	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 09:48	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 09:48	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 09:48	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 09:48	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 09:48	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 09:48	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 09:48	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 09:48	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 09:48	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 09:48	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 09:48	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 09:48	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 09:48	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 09:48	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 09:48	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 09:48	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 09:48	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 09:48	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 09:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 09:48	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 09:48	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 09:48	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		01/20/17 09:48	1
Dibromofluoromethane	90		70 - 120		01/20/17 09:48	1
1,2-Dichloroethane-d4 (Surr)	109		71 - 127		01/20/17 09:48	1
Toluene-d8 (Surr)	94		75 - 120		01/20/17 09:48	1

Lab Sample ID: LCS 500-369233/4
Matrix: Water
Analysis Batch: 369233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.7		ug/L		79	37 - 141
Benzene	50.0	48.9		ug/L		98	70 - 125
Bromodichloromethane	50.0	46.0		ug/L		92	70 - 125
Bromoform	50.0	41.6		ug/L		83	54 - 128
Bromomethane	50.0	30.8		ug/L		62	40 - 150
Carbon disulfide	50.0	49.1		ug/L		98	68 - 125
Carbon tetrachloride	50.0	48.5		ug/L		97	70 - 125
Chlorobenzene	50.0	47.4		ug/L		95	70 - 125
Chloroethane	50.0	44.7		ug/L		89	60 - 139
Chloroform	50.0	49.6		ug/L		99	70 - 125
Chloromethane	50.0	65.9		ug/L		132	60 - 140
cis-1,2-Dichloroethene	50.0	50.4		ug/L		101	70 - 125
cis-1,3-Dichloropropene	50.0	47.9		ug/L		96	70 - 125
Cyclohexane	50.0	62.7		ug/L		125	56 - 149
Dibromochloromethane	50.0	43.8		ug/L		88	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	41.2		ug/L		82	51 - 125
1,2-Dibromoethane	50.0	45.5		ug/L		91	70 - 125
1,2-Dichlorobenzene	50.0	50.0		ug/L		100	70 - 125
1,3-Dichlorobenzene	50.0	49.1		ug/L		98	70 - 125
1,4-Dichlorobenzene	50.0	48.5		ug/L		97	70 - 125
Dichlorodifluoromethane	50.0	51.6		ug/L		103	51 - 140
1,1-Dichloroethane	50.0	53.8		ug/L		108	70 - 125
1,2-Dichloroethane	50.0	57.4		ug/L		115	70 - 125
1,1-Dichloroethene	50.0	48.0		ug/L		96	70 - 125
1,2-Dichloropropane	50.0	55.7		ug/L		111	70 - 125
Ethylbenzene	50.0	46.9		ug/L		94	70 - 125
2-Hexanone	50.0	53.5		ug/L		107	49 - 139
Isopropylbenzene	50.0	50.4		ug/L		101	70 - 125
Methyl acetate	250	345		ug/L		138	60 - 148
Methylcyclohexane	50.0	51.4		ug/L		103	70 - 127
Methylene Chloride	50.0	47.0		ug/L		94	68 - 125
Methyl Ethyl Ketone	50.0	50.1		ug/L		100	52 - 142
methyl isobutyl ketone	50.0	50.9		ug/L		102	47 - 140
Methyl tert-butyl ether	50.0	47.5		ug/L		95	67 - 125
Styrene	50.0	48.4		ug/L		97	70 - 125
1,1,2,2-Tetrachloroethane	50.0	47.0		ug/L		94	68 - 125
Tetrachloroethene	50.0	50.4		ug/L		101	70 - 125
Toluene	50.0	50.3		ug/L		101	70 - 125
trans-1,2-Dichloroethene	50.0	49.3		ug/L		99	70 - 125
trans-1,3-Dichloropropene	50.0	47.5		ug/L		95	70 - 125
1,2,4-Trichlorobenzene	50.0	54.5		ug/L		109	64 - 126
1,1,1-Trichloroethane	50.0	51.1		ug/L		102	70 - 125
1,1,2-Trichloroethane	50.0	46.4		ug/L		93	70 - 125
Trichloroethene	50.0	47.2		ug/L		94	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-369233/4
Matrix: Water
Analysis Batch: 369233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	50.2		ug/L		100	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.4		ug/L		97	57 - 141
Vinyl chloride	50.0	51.2		ug/L		102	70 - 126
Xylenes, Total	100	96.7		ug/L		97	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*94*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*
Toluene-d8 (Surr)	*94*		*75 - 120*

Lab Sample ID: 500-122773-3 MS
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	6.2		50.0	52.7		ug/L		93	37 - 141
Benzene	<0.50		50.0	44.6		ug/L		89	70 - 125
Bromodichloromethane	<1.0		50.0	42.2		ug/L		84	70 - 125
Bromoform	<1.0		50.0	39.0		ug/L		78	54 - 128
Bromomethane	<2.0		50.0	28.6		ug/L		57	40 - 150
Carbon disulfide	<2.0		50.0	45.6		ug/L		91	68 - 125
Carbon tetrachloride	<1.0		50.0	42.6		ug/L		85	70 - 125
Chlorobenzene	<1.0		50.0	44.4		ug/L		89	70 - 125
Chloroethane	<1.0		50.0	45.0		ug/L		90	60 - 139
Chloroform	<2.0		50.0	45.9		ug/L		92	70 - 125
Chloromethane	<1.0		50.0	47.4		ug/L		95	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	46.1		ug/L		92	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	42.4		ug/L		85	70 - 125
Cyclohexane	<1.0		50.0	57.4		ug/L		115	56 - 149
Dibromochloromethane	<1.0		50.0	40.1		ug/L		80	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	36.2		ug/L		72	51 - 125
1,2-Dibromoethane	<1.0		50.0	42.9		ug/L		86	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	47.2		ug/L		94	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	45.3		ug/L		91	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	45.0		ug/L		90	70 - 125
Dichlorodifluoromethane	<2.0		50.0	48.3		ug/L		97	51 - 140
1,1-Dichloroethane	<1.0		50.0	49.2		ug/L		98	70 - 125
1,2-Dichloroethane	<1.0		50.0	52.6		ug/L		105	70 - 125
1,1-Dichloroethene	<1.0		50.0	42.8		ug/L		86	70 - 125
1,2-Dichloropropane	<1.0		50.0	50.4		ug/L		101	70 - 125
Ethylbenzene	<0.50		50.0	43.1		ug/L		86	70 - 125
2-Hexanone	<5.0		50.0	50.7		ug/L		101	49 - 139
Isopropylbenzene	<1.0		50.0	46.4		ug/L		93	70 - 125
Methyl acetate	<5.0		250	300		ug/L		120	60 - 148
Methylcyclohexane	<1.0		50.0	45.0		ug/L		90	70 - 127
Methylene Chloride	<5.0		50.0	42.5		ug/L		85	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-122773-3 MS
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	53.1		ug/L		106	52 - 142
methyl isobutyl ketone	<5.0		50.0	50.3		ug/L		101	47 - 140
Methyl tert-butyl ether	<1.0		50.0	44.6		ug/L		89	67 - 125
Styrene	<1.0		50.0	44.7		ug/L		89	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	46.2		ug/L		92	68 - 125
Tetrachloroethene	<1.0		50.0	45.1		ug/L		90	70 - 125
Toluene	<0.50		50.0	44.8		ug/L		90	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	44.7		ug/L		89	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	42.5		ug/L		85	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	47.6		ug/L		95	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	45.8		ug/L		92	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	43.1		ug/L		86	70 - 125
Trichloroethene	<0.50		50.0	42.9		ug/L		86	70 - 125
Trichlorofluoromethane	<1.0		50.0	45.2		ug/L		90	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	41.4		ug/L		83	57 - 141
Vinyl chloride	<0.50		50.0	46.3		ug/L		93	70 - 126
Xylenes, Total	<1.0		100	90.1		ug/L		90	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*95*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*
Toluene-d8 (Surr)	*94*		*75 - 120*

Lab Sample ID: 500-122773-3 MSD
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	6.2		50.0	56.6		ug/L		101	37 - 141	7	20
Benzene	<0.50		50.0	48.5		ug/L		97	70 - 125	8	20
Bromodichloromethane	<1.0		50.0	45.0		ug/L		90	70 - 125	6	20
Bromoform	<1.0		50.0	43.0		ug/L		86	54 - 128	10	20
Bromomethane	<2.0		50.0	31.5		ug/L		63	40 - 150	10	20
Carbon disulfide	<2.0		50.0	49.4		ug/L		99	68 - 125	8	20
Carbon tetrachloride	<1.0		50.0	45.6		ug/L		91	70 - 125	7	20
Chlorobenzene	<1.0		50.0	47.5		ug/L		95	70 - 125	7	20
Chloroethane	<1.0		50.0	49.6		ug/L		99	60 - 139	10	20
Chloroform	<2.0		50.0	49.8		ug/L		100	70 - 125	8	20
Chloromethane	<1.0		50.0	55.0		ug/L		110	60 - 140	15	20
cis-1,2-Dichloroethene	<1.0		50.0	49.5		ug/L		99	70 - 125	7	20
cis-1,3-Dichloropropene	<1.0		50.0	46.4		ug/L		93	70 - 125	9	20
Cyclohexane	<1.0		50.0	62.2		ug/L		124	56 - 149	8	20
Dibromochloromethane	<1.0		50.0	43.4		ug/L		87	66 - 125	8	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	40.7		ug/L		81	51 - 125	12	20
1,2-Dibromoethane	<1.0		50.0	46.0		ug/L		92	70 - 125	7	20
1,2-Dichlorobenzene	<1.0		50.0	49.6		ug/L		99	70 - 125	5	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-122773-3 MSD
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	48.2		ug/L		96	70 - 125	6	20
1,4-Dichlorobenzene	<1.0		50.0	47.4		ug/L		95	70 - 125	5	20
Dichlorodifluoromethane	<2.0		50.0	53.1		ug/L		106	51 - 140	9	20
1,1-Dichloroethane	<1.0		50.0	54.6		ug/L		109	70 - 125	10	20
1,2-Dichloroethane	<1.0		50.0	57.9		ug/L		116	70 - 125	10	20
1,1-Dichloroethene	<1.0		50.0	46.0		ug/L		92	70 - 125	7	20
1,2-Dichloropropane	<1.0		50.0	55.7		ug/L		111	70 - 125	10	20
Ethylbenzene	<0.50		50.0	45.9		ug/L		92	70 - 125	6	20
2-Hexanone	<5.0		50.0	55.2		ug/L		110	49 - 139	8	20
Isopropylbenzene	<1.0		50.0	49.0		ug/L		98	70 - 125	5	20
Methyl acetate	<5.0		250	333		ug/L		133	60 - 148	10	20
Methylcyclohexane	<1.0		50.0	49.4		ug/L		99	70 - 127	9	20
Methylene Chloride	<5.0		50.0	46.2		ug/L		92	68 - 125	8	20
Methyl Ethyl Ketone	<5.0		50.0	57.5		ug/L		115	52 - 142	8	20
methyl isobutyl ketone	<5.0		50.0	53.2		ug/L		106	47 - 140	6	20
Methyl tert-butyl ether	<1.0		50.0	48.1		ug/L		96	67 - 125	8	20
Styrene	<1.0		50.0	48.4		ug/L		97	70 - 125	8	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	47.5		ug/L		95	68 - 125	3	20
Tetrachloroethene	<1.0		50.0	48.4		ug/L		97	70 - 125	7	20
Toluene	<0.50		50.0	48.3		ug/L		97	70 - 125	8	20
trans-1,2-Dichloroethene	<1.0		50.0	47.7		ug/L		95	70 - 125	6	20
trans-1,3-Dichloropropene	<1.0		50.0	45.4		ug/L		91	70 - 125	7	20
1,2,4-Trichlorobenzene	<1.0		50.0	51.3		ug/L		103	64 - 126	8	20
1,1,1-Trichloroethane	<1.0		50.0	49.6		ug/L		99	70 - 125	8	20
1,1,2-Trichloroethane	<1.0		50.0	47.6		ug/L		95	70 - 125	10	20
Trichloroethene	<0.50		50.0	45.8		ug/L		92	70 - 125	7	20
Trichlorofluoromethane	<1.0		50.0	50.3		ug/L		101	60 - 126	11	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	48.4		ug/L		97	57 - 141	16	20
Vinyl chloride	<0.50		50.0	51.5		ug/L		103	70 - 126	11	20
Xylenes, Total	<1.0		100	94.7		ug/L		95	70 - 125	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*
Toluene-d8 (Surr)	*93*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-369156/1-A
Matrix: Water
Analysis Batch: 369361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 369156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:02	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:02	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:02	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-369156/1-A
Matrix: Water
Analysis Batch: 369361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 369156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.010		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:02	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:02	1
Calcium	<0.20		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:02	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:02	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:02	1
Copper	<0.010		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:02	1
Iron	<0.20		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:02	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:02	1
Magnesium	<0.10		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:02	1
Manganese	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:02	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:02	1
Potassium	<0.50		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:02	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:02	1
Sodium	<1.0		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:02	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:02	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:02	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:02	1

Lab Sample ID: LCS 500-369156/2-A
Matrix: Water
Analysis Batch: 369361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 369156

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.94		mg/L		97	80 - 120
Antimony	0.500	0.483		mg/L		97	80 - 120
Arsenic	0.100	0.0923		mg/L		92	80 - 120
Barium	2.00	1.97		mg/L		98	80 - 120
Beryllium	0.0500	0.0492		mg/L		98	80 - 120
Cadmium	0.0500	0.0471		mg/L		94	80 - 120
Calcium	10.0	9.81		mg/L		98	80 - 120
Chromium	0.200	0.193		mg/L		97	80 - 120
Cobalt	0.500	0.484		mg/L		97	80 - 120
Copper	0.250	0.247		mg/L		99	80 - 120
Iron	1.00	1.06		mg/L		106	80 - 120
Lead	0.100	0.0933		mg/L		93	80 - 120
Magnesium	10.0	9.35		mg/L		94	80 - 120
Manganese	0.500	0.487		mg/L		97	80 - 120
Nickel	0.500	0.483		mg/L		97	80 - 120
Potassium	10.0	9.64		mg/L		96	80 - 120
Selenium	0.100	0.0850		mg/L		85	80 - 120
Silver	0.0500	0.0466		mg/L		93	80 - 120
Sodium	10.0	9.73		mg/L		97	80 - 120
Thallium	0.100	0.0919		mg/L		92	80 - 120
Vanadium	0.500	0.494		mg/L		99	80 - 120
Zinc	0.500	0.491		mg/L		98	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-369265/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369326 — **Prep Batch: 369265**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:01	1

Lab Sample ID: LCS 500-369265/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369326 — **Prep Batch: 369265**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00206		mg/L		103	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-369367/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:07	1

Lab Sample ID: LCS 500-369367/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.38		mg/L		95	80 - 120

Lab Sample ID: 500-122773-2 MS — **Client Sample ID: B-2-011917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	3.3		2.50	5.59		mg/L		93	75 - 125

Lab Sample ID: 500-122773-2 MSD — **Client Sample ID: B-2-011917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	3.3		2.50	5.65		mg/L		96	75 - 125	1	20

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917 — Lab Sample ID: 500-122773-1

Date Collected: 01/19/17 10:15 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 17:05	PMF	TAL CHI
Total/NA	Prep	3010A			369156	01/19/17 14:28	JNH	TAL CHI
Total/NA	Analysis	6010C		1	369361	01/20/17 12:31	KML	TAL CHI
Total/NA	Prep	7470A			369265	01/20/17 08:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	369326	01/20/17 13:28	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			369367	01/20/17 19:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	369407	01/20/17 22:27	HMW	TAL CHI

Client Sample ID: B-2-011917 — Lab Sample ID: 500-122773-2

Date Collected: 01/19/17 10:40 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 17:32	PMF	TAL CHI
Total/NA	Prep	3010A			369156	01/19/17 14:28	JNH	TAL CHI
Total/NA	Analysis	6010C		1	369361	01/20/17 12:36	KML	TAL CHI
Total/NA	Prep	7470A			369265	01/20/17 08:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	369326	01/20/17 13:30	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			369367	01/20/17 19:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	369407	01/20/17 22:30	HMW	TAL CHI

Client Sample ID: C-1-011917 — Lab Sample ID: 500-122773-3

Date Collected: 01/19/17 10:55 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 17:59	PMF	TAL CHI
Total/NA	Prep	3010A			369156	01/19/17 14:28	JNH	TAL CHI
Total/NA	Analysis	6010C		1	369361	01/20/17 12:40	KML	TAL CHI
Total/NA	Prep	7470A			369265	01/20/17 08:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	369326	01/20/17 13:31	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			369367	01/20/17 19:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	369407	01/20/17 22:44	HMW	TAL CHI

Client Sample ID: Trip Blank — Lab Sample ID: 500-122773-4

Date Collected: 01/19/17 00:00 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 18:26	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-122773

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 3.7

500-122773 COC

Report To (optional)
Contact: Ellyn Gates
Company:
Address:
Address:
Phone:
Fax:
E-Mail: ellyn.gates@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: C1001805.0002
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Berthurnhoffer
Lab PM: Therese Hargraves

Preservative: HNO3 | Sulfuric | HCl

Parameter: 6010C TAL Metals | Ammonia | 8260B VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	6010C TAL Metals	Ammonia	8260B VOCs							Comments
1		B-1-011917	1-19-17	10:15	5	W	1	1	3							
2		B-2-011917	1-19-17	10:40	5	W	1	1	3							
3		C-1-011917	↓	10:55	5	W	1	1	3							

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days X 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	1/19/17	12:20	[signature]	TA	1/19/17	1220
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped
Hand Delivered ✓

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124 (0911)

1/24/2017

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-122773-1

Login Number: 122773
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX H

MW-12 LNAPL Data Validation and Laboratory Report

Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), and Polychlorinated Biphenyls (PCBs) Analyses

SDG #500-124554-1

Analyses Performed By:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #27457R
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #500-124554-1 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chains of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	PCB	MET	MISC	Dslvd Gases
500-124554-1	MW-12-FP-03022017	500-124554-1	Waste	03/02/2017		X	X	X			

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, and 8082A. Data were reviewed in accordance with *USEPA National Functional Guidelines for Organic Data Review* (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected; the analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260C	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil/Waste	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

Each target compound associated with the continuing calibration standard must exhibit a RRF value

greater than control limit (0.05) and a percent difference (%D) from the initial calibration within the control limit (20%).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

Samples	Initial/ Continuing	Compound	Criteria
MW-12-FP-03022017	CCV	Bromomethane	-33.9%
		Chloroethane	-41.9%
		Bromoform	-20.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibrations	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibrations	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibrations	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD was not performed on a sample within this SDG.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

A field duplicate was not performed on sample within this SDG.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-12-FP-03022017	Toluene	--	4400 D	4400 D

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
	Ethylbenzene	--	6400 D	6400 D
	Xylenes, Total	--	23000 D	23000 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCS

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision RPD	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD	X				X
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C
	Soil/Waste	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference

(%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/ Continuing	Compound	Criteria
MW-12-FP-03022017	ICV %RSD	Benzaldehyde	28.4%
	CCV %D	Benzaldehyde	-75.5%
		Hexachlorocyclopentadiene	-20.7%
		4-Nitroaniline	-25.5%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 20% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:
[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-12-FP-03022017	Phenol-d6	>UL
	2-Fluorophenol	<LL but > 10%
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	>UL
	2-Fluorobiphenyl	>UL
	Terphenyl-d14	AC

Notes:
LL = Lower control limit
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a

factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample associated with these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
MW-12-FP-03022017	3-Nitroaniline	<LL but >10%	<LL but >10%
	4-Nitroaniline	<LL but >10%	<LL but >10%
	Carbazole	<LL but >10%	<LL but >10%

AC = acceptable

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

A field duplicate was not performed on sample within this SDG.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of

the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-12-FP-03022017	3 & 4 Methylphenol	--	3800 D	3800 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCS

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate (LCSD) %R		X	X		
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD	X				X
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard response		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil/Waste	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-12-FP-03022017	Tetrachloro-m-xylene	D
	Decachlorobiphenyl	D

Notes:
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	J[1]
	Detect	

Note:

[1]A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

A field duplicate was not performed on sample within this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (RPD) of detected sample results must be less than 40%.

All detected Aroclors exhibited acceptable %Ds between the primary and confirmation columns.

The laboratory reported both results from the analytical columns. Due to continuing calibration recoveries outside criteria from the confirmation column, the results from the primary column will be reported as the usable result.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBS

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation
%R - percent recovery,
RPD - relative percent difference,
%D – difference

VALIDATION PERFORMED BY: Andrew Korycinski

SIGNATURE:

DATE: April 5, 2017

PEER REVIEW: Dennis Capria

DATE: April 5, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: ste 2000
Phone: 312 - 575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500- 124554
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.6

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #: 50011099
Sampler: Ben Thornhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative: 8 / Parameter: Waste Oil SVOC	8 / Waste Oil VOC	8 / Waste Oil PCB							Comments
1		MW-12-FP-03022017	3/2/17	10:10	3	OL	1	1	1							

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thornhoffer	Arcadis	3/2/2017	1134	[illegible]	TA-CHI	3/2/17	1134
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier ☐
Shipped ☐
Hand Delivered X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
500-124554 COC

03/16/2017

TAL-4124-500 (1209)

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<10		10	3.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloromethane	<5.0		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Vinyl chloride	**7.7**		2.5	1.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromomethane	<10	J	10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroethane	<5.0	J	5.0	2.5	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichlorofluoromethane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Acetone	<25		25	8.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon disulfide	<10		10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl acetate	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylene Chloride	<25		25	8.2	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,2-Dichloroethene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl tert-butyl ether	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethane	**69**		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,2-Dichloroethene	**30**		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl Ethyl Ketone	<25		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroform	<10		10	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,1-Trichloroethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Cyclohexane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon tetrachloride	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Benzene	**18**		1.3	0.73	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichloroethene	**69**		2.5	0.82	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylcyclohexane	**46**		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloropropane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromodichloromethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,3-Dichloropropene	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
methyl isobutyl ketone	**250**		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,3-Dichloropropene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloroethane	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Tetrachloroethene	**240**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
2-Hexanone	<25		25	7.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Dibromochloromethane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromoethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chlorobenzene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Styrene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromoform	<5.0	J	5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Isopropylbenzene	**170**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,3-Dichlorobenzene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,4-Dichlorobenzene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromo-3-Chloropropane	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*
Toluene-d8 (Surr)	*99*		*75 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		71 - 120	03/05/17 17:07	03/13/17 14:13	5000
Dibromofluoromethane	95		70 - 120	03/05/17 17:07	03/13/17 14:13	5000

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**4400**	D	13	7.4	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000
Ethylbenzene	**6400**	D	13	9.2	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		71 - 127	03/05/17 17:07	03/13/17 14:40	50000
Toluene-d8 (Surr)	101		75 - 120	03/05/17 17:07	03/13/17 14:40	50000
4-Bromofluorobenzene (Surr)	102		71 - 120	03/05/17 17:07	03/13/17 14:40	50000
Dibromofluoromethane	94		70 - 120	03/05/17 17:07	03/13/17 14:40	50000

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**23000**	D	250	110	mg/Kg		03/05/17 17:07	03/14/17 11:17	500000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		71 - 127	03/05/17 17:07	03/14/17 11:17	500000
Toluene-d8 (Surr)	97		75 - 120	03/05/17 17:07	03/14/17 11:17	500000
4-Bromofluorobenzene (Surr)	92		71 - 120	03/05/17 17:07	03/14/17 11:17	500000
Dibromofluoromethane	94		70 - 120	03/05/17 17:07	03/14/17 11:17	500000

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	<2000	J	2000	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethyl)ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chlorophenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylphenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,2'-oxybis[1-chloropropane]	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acetophenone	**1100**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodi-n-propylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachloroethane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Nitrobenzene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Isophorone	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitrophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dimethylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethoxy)methane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Naphthalene	**1200**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobutadiene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Caprolactam	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloro-3-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylnaphthalene	**1100**	J	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorocyclopentadiene	<2000	J	2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,6-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,5-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chloronaphthalene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitroaniline	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dimethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,6-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3-Nitroaniline	<990	J	990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthene	**120**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenzofuran	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Diethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluorene	**150**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chlorophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitroaniline	<990	J	990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4,6-Dinitro-2-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodiphenylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Bromophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobenzene	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Atrazine	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pentachlorophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenanthrene	**460**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Carbazole	<500	J	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-butyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluoranthene	**160**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pyrene	**180**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Butyl benzyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3,3'-Dichlorobenzidine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]anthracene	**61**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Chrysene	**71**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-ethylhexyl) phthalate	**420**	J	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-octyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[b]fluoranthene	**60**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[k]fluoranthene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Indeno[1,2,3-cd]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenz(a,h)anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[g,h,i]perylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*36*	*X*	*40 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Phenol-d5 (Surr)	*226*	*X*	*36 - 123*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Nitrobenzene-d5 (Surr)	*166*	*X*	*33 - 124*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2-Fluorobiphenyl (Surr)	*120*	*X*	*42 - 115*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2,4,6-Tribromophenol (Surr)	*102*		*25 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Terphenyl-d14 (Surr)	*126*		*25 - 150*	*03/07/17 21:45*	*03/08/17 18:51*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**3800**		2500	1200	mg/Kg		03/07/17 21:45	03/08/17 17:55	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*0*	*D*	*40 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Phenol-d5 (Surr)	*0*	*D*	*36 - 123*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 124*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2-Fluorobiphenyl (Surr)	*0*	*D*	*42 - 115*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*25 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*25 - 150*	*03/07/17 21:45*	*03/08/17 17:55*	*50*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1016~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1221	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1221~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1232	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1232~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1242	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1242~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1248	**180**	J	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~**PCB-1248**~~	~~**170**~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1254	**180**	J	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~**PCB-1254**~~	~~**150**~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1260	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1260~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-124554-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
200 S. Michigan Ave
Suite 2000
Chicago, Illinois 60604

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
3/16/2017 4:45:01 PM

Therese Hargraves, Project Manager I
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 500-124554-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-124554-1

Comments
No additional comments.

Receipt
The sample was received on 3/2/2017 11:34 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.6º C.

GC/MS VOA
Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-12-FP-03022017 (500-124554-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-369784/13)

Method(s) 8270D: The following sample was diluted due to the nature of the sample matrix: MW-12-FP-03022017 (500-124554-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The following sample required a dilution due to the nature of the sample matrix: MW-12-FP-03022017 (500-124554-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS/LCSD associated with batch 500-374814 had 3 analytes outside control limits, biased low: 3-Nitroaniline; 4-Nitroaniline; and Carbazole. These results have been reported and qualified. (LCS 500-374814/2-A) and (LCSD 500-374814/3-A)

Method(s) 8270D: CCVIS 500-374842/2 was outside the method criteria for 4-Nitroaniline; Hexachlorobenzene, Hexachlorocyclopentadiene, and Pentachlorophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method(s) 8270D: Four surrogate recoveries for the following sample were outside control limits: MW-12-FP-03022017 (500-124554-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8082A: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-12-FP-03022017 (500-124554-1). Elevated reporting limits (RLs) are provided.

Method(s) 8082A: The following samples required a dilution due to the nature of the sample matrix: MW-12-FP-03022017 (500-124554-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8082A: %D fell below the control limit on the confirmation column for DCB Decachlorobiphenyl surrogate, PCB-1016 peak 1, and PCB-1260 peak 1 in the following continuing calibration verification: (CCVIS 500-375068/1); however, the primary column was within control limits.

Job ID: 500-124554-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017 — Lab Sample ID: 500-124554-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	7.7		2.5	1.3	mg/Kg	5000		8260B	Total/NA
1,1-Dichloroethane	69		5.0	2.1	mg/Kg	5000		8260B	Total/NA
cis-1,2-Dichloroethene	30		5.0	2.0	mg/Kg	5000		8260B	Total/NA
Benzene	18		1.3	0.73	mg/Kg	5000		8260B	Total/NA
Trichloroethene	69		2.5	0.82	mg/Kg	5000		8260B	Total/NA
Methylcyclohexane	46		5.0	1.6	mg/Kg	5000		8260B	Total/NA
methyl isobutyl ketone	250		25	11	mg/Kg	5000		8260B	Total/NA
Tetrachloroethene	240		5.0	1.9	mg/Kg	5000		8260B	Total/NA
Isopropylbenzene	170		5.0	1.9	mg/Kg	5000		8260B	Total/NA
Toluene - DL	4400		13	7.4	mg/Kg	50000		8260B	Total/NA
Ethylbenzene - DL	6400		13	9.2	mg/Kg	50000		8260B	Total/NA
Xylenes, Total - DL2	23000		250	110	mg/Kg	500000		8260B	Total/NA
Acetophenone	1100		99	50	mg/Kg	10		8270D	Total/NA
Naphthalene	1200		99	50	mg/Kg	10		8270D	Total/NA
2-Methylnaphthalene	1100		500	250	mg/Kg	10		8270D	Total/NA
Acenaphthene	120		99	50	mg/Kg	10		8270D	Total/NA
Fluorene	150		99	50	mg/Kg	10		8270D	Total/NA
Phenanthrene	460		99	50	mg/Kg	10		8270D	Total/NA
Fluoranthene	160		99	50	mg/Kg	10		8270D	Total/NA
Pyrene	180		99	50	mg/Kg	10		8270D	Total/NA
Benzo[a]anthracene	61	J	99	50	mg/Kg	10		8270D	Total/NA
Chrysene	71	J	99	50	mg/Kg	10		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	420	J	500	250	mg/Kg	10		8270D	Total/NA
Benzo[b]fluoranthene	60	J	99	50	mg/Kg	10		8270D	Total/NA
3 & 4 Methylphenol - DL	3800		2500	1200	mg/Kg	50		8270D	Total/NA
PCB-1248	180		25	12	mg/Kg	50		8082A	Total/NA
PCB-1248	170		25	12	mg/Kg	50		8082A	Total/NA
PCB-1254	180		25	12	mg/Kg	50		8082A	Total/NA
PCB-1254	150		25	12	mg/Kg	50		8082A	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-124554-1	MW-12-FP-03022017	Waste	03/02/17 10:10	03/02/17 11:34

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<10		10	3.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloromethane	<5.0		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Vinyl chloride	**7.7**		2.5	1.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromomethane	<10		10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroethane	<5.0		5.0	2.5	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichlorofluoromethane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Acetone	<25		25	8.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon disulfide	<10		10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl acetate	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylene Chloride	<25		25	8.2	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,2-Dichloroethene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl tert-butyl ether	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethane	**69**		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,2-Dichloroethene	**30**		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl Ethyl Ketone	<25		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroform	<10		10	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,1-Trichloroethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Cyclohexane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon tetrachloride	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Benzene	**18**		1.3	0.73	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichloroethene	**69**		2.5	0.82	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylcyclohexane	**46**		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloropropane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromodichloromethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,3-Dichloropropene	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
methyl isobutyl ketone	**250**		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,3-Dichloropropene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloroethane	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Tetrachloroethene	**240**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
2-Hexanone	<25		25	7.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Dibromochloromethane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromoethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chlorobenzene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Styrene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromoform	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Isopropylbenzene	**170**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,3-Dichlorobenzene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,4-Dichlorobenzene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromo-3-Chloropropane	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*
Toluene-d8 (Surr)	*99*		*75 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*

Client Sample ID: MW-12-FP-03022017

Lab Sample ID: 500-124554-1
Date Collected: 03/02/17 10:10
Matrix: Waste
Date Received: 03/02/17 11:34

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*
Dibromofluoromethane	*95*		*70 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**4400**		13	7.4	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000
Ethylbenzene	**6400**		13	9.2	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*71 - 127*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*
Toluene-d8 (Surr)	*101*		*75 - 120*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*
Dibromofluoromethane	*94*		*70 - 120*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**23000**		250	110	mg/Kg		03/05/17 17:07	03/14/17 11:17	500000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*
Toluene-d8 (Surr)	*97*		*75 - 120*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*
Dibromofluoromethane	*94*		*70 - 120*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	<2000		2000	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethyl)ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chlorophenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylphenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,2'-oxybis[1-chloropropane]	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acetophenone	**1100**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodi-n-propylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachloroethane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Nitrobenzene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Isophorone	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitrophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dimethylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethoxy)methane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Naphthalene	**1200**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobutadiene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Caprolactam	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloro-3-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylnaphthalene	**1100**		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorocyclopentadiene	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,6-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,5-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Client Sample ID: MW-12-FP-03022017

Lab Sample ID: 500-124554-1

Date Collected: 03/02/17 10:10

Matrix: Waste

Date Received: 03/02/17 11:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chloronaphthalene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitroaniline	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dimethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,6-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3-Nitroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthene	**120**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenzofuran	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Diethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluorene	**150**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chlorophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4,6-Dinitro-2-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodiphenylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Bromophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobenzene	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Atrazine	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pentachlorophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenanthrene	**460**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Carbazole	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-butyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluoranthene	**160**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pyrene	**180**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Butyl benzyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3,3'-Dichlorobenzidine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]anthracene	**61**	**J**	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Chrysene	**71**	**J**	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-ethylhexyl) phthalate	**420**	**J**	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-octyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[b]fluoranthene	**60**	**J**	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[k]fluoranthene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Indeno[1,2,3-cd]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenz(a,h)anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[g,h,i]perylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*36*	*X*	*40 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Phenol-d5 (Surr)	*226*	*X*	*36 - 123*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Nitrobenzene-d5 (Surr)	*166*	*X*	*33 - 124*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2-Fluorobiphenyl (Surr)	*120*	*X*	*42 - 115*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2,4,6-Tribromophenol (Surr)	*102*		*25 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Terphenyl-d14 (Surr)	*126*		*25 - 150*	*03/07/17 21:45*	*03/08/17 18:51*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Lab Sample ID: 500-124554-1

Date Collected: 03/02/17 10:10

Matrix: Waste

Date Received: 03/02/17 11:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**3800**		2500	1200	mg/Kg		03/07/17 21:45	03/08/17 17:55	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*0*	*D*	*40 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Phenol-d5 (Surr)	*0*	*D*	*36 - 123*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 124*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2-Fluorobiphenyl (Surr)	*0*	*D*	*42 - 115*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*25 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*25 - 150*	*03/07/17 21:45*	*03/08/17 17:55*	*50*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1016	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1221	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1221	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1232	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1232	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1242	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1242	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1248	**180**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1248	**170**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1254	**180**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1254	**150**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1260	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1260	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

GC/MS VOA

Prep Batch: 374496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	5030B	
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	5030B	
500-124554-1 - DL2	MW-12-FP-03022017	Total/NA	Waste	5030B	

Analysis Batch: 375465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	8260B	374496
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	8260B	374496
MB 500-375465/7	Method Blank	Total/NA	Waste	8260B	
LCS 500-375465/5	Lab Control Sample	Total/NA	Waste	8260B	

Analysis Batch: 375635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1 - DL2	MW-12-FP-03022017	Total/NA	Waste	8260B	374496
MB 500-375635/6	Method Blank	Total/NA	Waste	8260B	
LCS 500-375635/4	Lab Control Sample	Total/NA	Waste	8260B	

GC/MS Semi VOA

Prep Batch: 374814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	3580A	
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	3580A	
MB 500-374814/1-A	Method Blank	Total/NA	Waste	3580A	
LCS 500-374814/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 500-374814/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	

Analysis Batch: 374842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	8270D	374814
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	8270D	374814
MB 500-374814/1-A	Method Blank	Total/NA	Waste	8270D	374814
LCS 500-374814/2-A	Lab Control Sample	Total/NA	Waste	8270D	374814
LCSD 500-374814/3-A	Lab Control Sample Dup	Total/NA	Waste	8270D	374814

GC Semi VOA

Prep Batch: 374749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	3580A	
MB 500-374749/1-A	Method Blank	Total/NA	Waste	3580A	
LCS 500-374749/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 500-374749/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	

Analysis Batch: 375068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	8082A	374749
MB 500-374749/1-A	Method Blank	Total/NA	Waste	8082A	374749
LCS 500-374749/2-A	Lab Control Sample	Total/NA	Waste	8082A	374749
LCSD 500-374749/3-A	Lab Control Sample Dup	Total/NA	Waste	8082A	374749

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(71-127)	(75-120)	(71-120)	(70-120)
500-124554-1	MW-12-FP-03022017	105	99	95	95
500-124554-1 - DL	MW-12-FP-03022017	104	101	102	94
500-124554-1 - DL2	MW-12-FP-03022017	105	97	92	94
LCS 500-375465/5	Lab Control Sample	99	102	96	97
LCS 500-375635/4	Lab Control Sample	103	102	88	97
MB 500-375465/7	Method Blank	101	100	101	97
MB 500-375635/6	Method Blank	105	100	93	93

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPH
Lab Sample ID	Client Sample ID	(40-130)	(36-123)	(33-124)	(42-115)	(25-130)	(25-150)
500-124554-1 - DL	MW-12-FP-03022017	0 D	0 D	0 D	0 D	0 D	0 D
500-124554-1	MW-12-FP-03022017	36 X	226 X	166 X	120 X	102	126
LCS 500-374814/2-A	Lab Control Sample	118	111	95	87	85	98
LCSD 500-374814/3-A	Lab Control Sample Dup	113	105	91	83	80	95
MB 500-374814/1-A	Method Blank	115	100	91	89	69	98

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(62-121)	(62-121)	(53-118)	(53-118)
500-124554-1	MW-12-FP-03022017	0 D	0 D	0 D	0 D
LCS 500-374749/2-A	Lab Control Sample	104	104	102	98
LCSD 500-374749/3-A	Lab Control Sample Dup	93	91	89	86
MB 500-374749/1-A	Method Blank	96	97	91	91

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-375465/7
Matrix: Waste
Analysis Batch: 375465

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<0.0020		0.0020	0.00067	mg/Kg			03/13/17 10:38	1
Chloromethane	<0.0010		0.0010	0.00032	mg/Kg			03/13/17 10:38	1
Vinyl chloride	<0.00050		0.00050	0.00026	mg/Kg			03/13/17 10:38	1
Bromomethane	<0.0020		0.0020	0.00080	mg/Kg			03/13/17 10:38	1
Chloroethane	<0.0010		0.0010	0.00050	mg/Kg			03/13/17 10:38	1
Trichlorofluoromethane	<0.0010		0.0010	0.00043	mg/Kg			03/13/17 10:38	1
1,1-Dichloroethene	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.0010		0.0010	0.00046	mg/Kg			03/13/17 10:38	1
Acetone	<0.0050		0.0050	0.0017	mg/Kg			03/13/17 10:38	1
Carbon disulfide	<0.0020		0.0020	0.00080	mg/Kg			03/13/17 10:38	1
Methyl acetate	<0.0050		0.0050	0.0020	mg/Kg			03/13/17 10:38	1
Methylene Chloride	<0.0050		0.0050	0.0016	mg/Kg			03/13/17 10:38	1
trans-1,2-Dichloroethene	<0.0010		0.0010	0.00035	mg/Kg			03/13/17 10:38	1
Methyl tert-butyl ether	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
1,1-Dichloroethane	<0.0010		0.0010	0.00041	mg/Kg			03/13/17 10:38	1
cis-1,2-Dichloroethene	<0.0010		0.0010	0.00041	mg/Kg			03/13/17 10:38	1
Methyl Ethyl Ketone	<0.0050		0.0050	0.0021	mg/Kg			03/13/17 10:38	1
Chloroform	<0.0020		0.0020	0.00037	mg/Kg			03/13/17 10:38	1
1,1,1-Trichloroethane	<0.0010		0.0010	0.00038	mg/Kg			03/13/17 10:38	1
Cyclohexane	<0.0010		0.0010	0.00048	mg/Kg			03/13/17 10:38	1
Carbon tetrachloride	<0.0010		0.0010	0.00038	mg/Kg			03/13/17 10:38	1
Benzene	<0.00025		0.00025	0.00015	mg/Kg			03/13/17 10:38	1
1,2-Dichloroethane	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Trichloroethene	<0.00050		0.00050	0.00016	mg/Kg			03/13/17 10:38	1
Methylcyclohexane	<0.0010		0.0010	0.00032	mg/Kg			03/13/17 10:38	1
1,2-Dichloropropane	<0.0010		0.0010	0.00043	mg/Kg			03/13/17 10:38	1
Bromodichloromethane	<0.0010		0.0010	0.00037	mg/Kg			03/13/17 10:38	1
cis-1,3-Dichloropropene	<0.0010		0.0010	0.00042	mg/Kg			03/13/17 10:38	1
methyl isobutyl ketone	<0.0050		0.0050	0.0022	mg/Kg			03/13/17 10:38	1
Toluene	<0.00025		0.00025	0.00015	mg/Kg			03/13/17 10:38	1
trans-1,3-Dichloropropene	<0.0010		0.0010	0.00036	mg/Kg			03/13/17 10:38	1
1,1,2-Trichloroethane	<0.0010		0.0010	0.00035	mg/Kg			03/13/17 10:38	1
Tetrachloroethene	<0.0010		0.0010	0.00037	mg/Kg			03/13/17 10:38	1
2-Hexanone	<0.0050		0.0050	0.0016	mg/Kg			03/13/17 10:38	1
Dibromochloromethane	<0.0010		0.0010	0.00049	mg/Kg			03/13/17 10:38	1
1,2-Dibromoethane	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Chlorobenzene	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Ethylbenzene	<0.00025		0.00025	0.00018	mg/Kg			03/13/17 10:38	1
Xylenes, Total	<0.00050		0.00050	0.00022	mg/Kg			03/13/17 10:38	1
Styrene	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Bromoform	<0.0010		0.0010	0.00048	mg/Kg			03/13/17 10:38	1
Isopropylbenzene	<0.0010		0.0010	0.00038	mg/Kg			03/13/17 10:38	1
1,1,2,2-Tetrachloroethane	<0.0010		0.0010	0.00040	mg/Kg			03/13/17 10:38	1
1,3-Dichlorobenzene	<0.0010		0.0010	0.00040	mg/Kg			03/13/17 10:38	1
1,4-Dichlorobenzene	<0.0010		0.0010	0.00036	mg/Kg			03/13/17 10:38	1
1,2-Dichlorobenzene	<0.0010		0.0010	0.00033	mg/Kg			03/13/17 10:38	1
1,2-Dibromo-3-Chloropropane	<0.0050		0.0050	0.0020	mg/Kg			03/13/17 10:38	1
1,2,4-Trichlorobenzene	<0.0010		0.0010	0.00034	mg/Kg			03/13/17 10:38	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		71 - 127		03/13/17 10:38	1
Toluene-d8 (Surr)	100		75 - 120		03/13/17 10:38	1
4-Bromofluorobenzene (Surr)	101		71 - 120		03/13/17 10:38	1
Dibromofluoromethane	97		70 - 120		03/13/17 10:38	1

Lab Sample ID: LCS 500-375465/5
Matrix: Waste
Analysis Batch: 375465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	0.0500	0.0353		mg/Kg		71	51 - 140
Chloromethane	0.0500	0.0393		mg/Kg		79	60 - 140
Vinyl chloride	0.0500	0.0386		mg/Kg		77	70 - 126
Bromomethane	0.0500	0.0304		mg/Kg		61	40 - 150
Chloroethane	0.0500	0.0351		mg/Kg		70	60 - 139
Trichlorofluoromethane	0.0500	0.0573		mg/Kg		115	60 - 126
1,1-Dichloroethene	0.0500	0.0423		mg/Kg		85	70 - 125
1,1,2-Trichloro-1,2,2-trifluoroetha ne	0.0500	0.0463		mg/Kg		93	57 - 141
Acetone	0.0500	0.0358		mg/Kg		72	37 - 141
Carbon disulfide	0.0500	0.0405		mg/Kg		81	68 - 125
Methyl acetate	0.250	0.204		mg/Kg		82	60 - 148
Methylene Chloride	0.0500	0.0411		mg/Kg		82	68 - 125
trans-1,2-Dichloroethene	0.0500	0.0421		mg/Kg		84	70 - 125
Methyl tert-butyl ether	0.0500	0.0418		mg/Kg		84	67 - 125
1,1-Dichloroethane	0.0500	0.0399		mg/Kg		80	70 - 125
cis-1,2-Dichloroethene	0.0500	0.0416		mg/Kg		83	70 - 125
Methyl Ethyl Ketone	0.0500	0.0384		mg/Kg		77	52 - 142
Chloroform	0.0500	0.0424		mg/Kg		85	70 - 125
1,1,1-Trichloroethane	0.0500	0.0439		mg/Kg		88	70 - 125
Cyclohexane	0.0500	0.0407		mg/Kg		81	56 - 149
Carbon tetrachloride	0.0500	0.0425		mg/Kg		85	70 - 125
Benzene	0.0500	0.0413		mg/Kg		83	70 - 125
1,2-Dichloroethane	0.0500	0.0414		mg/Kg		83	70 - 125
Trichloroethene	0.0500	0.0429		mg/Kg		86	70 - 125
Methylcyclohexane	0.0500	0.0445		mg/Kg		89	70 - 127
1,2-Dichloropropane	0.0500	0.0400		mg/Kg		80	70 - 125
Bromodichloromethane	0.0500	0.0414		mg/Kg		83	70 - 125
cis-1,3-Dichloropropene	0.0500	0.0419		mg/Kg		84	70 - 125
methyl isobutyl ketone	0.0500	0.0440		mg/Kg		88	47 - 140
Toluene	0.0500	0.0441		mg/Kg		88	70 - 125
trans-1,3-Dichloropropene	0.0500	0.0416		mg/Kg		83	70 - 125
1,1,2-Trichloroethane	0.0500	0.0434		mg/Kg		87	70 - 125
Tetrachloroethene	0.0500	0.0451		mg/Kg		90	70 - 125
2-Hexanone	0.0500	0.0422		mg/Kg		84	49 - 139
Dibromochloromethane	0.0500	0.0426		mg/Kg		85	66 - 125
1,2-Dibromoethane	0.0500	0.0443		mg/Kg		89	70 - 125
Chlorobenzene	0.0500	0.0432		mg/Kg		86	70 - 125
Ethylbenzene	0.0500	0.0452		mg/Kg		90	70 - 125
Xylenes, Total	0.100	0.0871		mg/Kg		87	70 - 125
Styrene	0.0500	0.0435		mg/Kg		87	70 - 125
Bromoform	0.0500	0.0384		mg/Kg		77	54 - 128
Isopropylbenzene	0.0500	0.0436		mg/Kg		87	70 - 125
1,1,2,2-Tetrachloroethane	0.0500	0.0418		mg/Kg		84	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-375465/5
Matrix: Waste
Analysis Batch: 375465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	0.0500	0.0432		mg/Kg		86	70 - 125
1,4-Dichlorobenzene	0.0500	0.0428		mg/Kg		86	70 - 125
1,2-Dichlorobenzene	0.0500	0.0431		mg/Kg		86	70 - 125
1,2-Dibromo-3-Chloropropane	0.0500	0.0393		mg/Kg		79	51 - 125
1,2,4-Trichlorobenzene	0.0500	0.0403		mg/Kg		81	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*

Lab Sample ID: MB 500-375635/6
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<0.0020		0.0020	0.00067	mg/Kg			03/14/17 10:01	1
Chloromethane	<0.0010		0.0010	0.00032	mg/Kg			03/14/17 10:01	1
Vinyl chloride	<0.00050		0.00050	0.00026	mg/Kg			03/14/17 10:01	1
Bromomethane	<0.0020		0.0020	0.00080	mg/Kg			03/14/17 10:01	1
Chloroethane	<0.0010		0.0010	0.00050	mg/Kg			03/14/17 10:01	1
Trichlorofluoromethane	<0.0010		0.0010	0.00043	mg/Kg			03/14/17 10:01	1
1,1-Dichloroethene	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.0010		0.0010	0.00046	mg/Kg			03/14/17 10:01	1
Acetone	<0.0050		0.0050	0.0017	mg/Kg			03/14/17 10:01	1
Carbon disulfide	<0.0020		0.0020	0.00080	mg/Kg			03/14/17 10:01	1
Methyl acetate	<0.0050		0.0050	0.0020	mg/Kg			03/14/17 10:01	1
Methylene Chloride	<0.0050		0.0050	0.0016	mg/Kg			03/14/17 10:01	1
trans-1,2-Dichloroethene	<0.0010		0.0010	0.00035	mg/Kg			03/14/17 10:01	1
Methyl tert-butyl ether	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
1,1-Dichloroethane	<0.0010		0.0010	0.00041	mg/Kg			03/14/17 10:01	1
cis-1,2-Dichloroethene	<0.0010		0.0010	0.00041	mg/Kg			03/14/17 10:01	1
Methyl Ethyl Ketone	<0.0050		0.0050	0.0021	mg/Kg			03/14/17 10:01	1
Chloroform	<0.0020		0.0020	0.00037	mg/Kg			03/14/17 10:01	1
1,1,1-Trichloroethane	<0.0010		0.0010	0.00038	mg/Kg			03/14/17 10:01	1
Cyclohexane	<0.0010		0.0010	0.00048	mg/Kg			03/14/17 10:01	1
Carbon tetrachloride	<0.0010		0.0010	0.00038	mg/Kg			03/14/17 10:01	1
Benzene	<0.00025		0.00025	0.00015	mg/Kg			03/14/17 10:01	1
1,2-Dichloroethane	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Trichloroethene	<0.00050		0.00050	0.00016	mg/Kg			03/14/17 10:01	1
Methylcyclohexane	<0.0010		0.0010	0.00032	mg/Kg			03/14/17 10:01	1
1,2-Dichloropropane	<0.0010		0.0010	0.00043	mg/Kg			03/14/17 10:01	1
Bromodichloromethane	<0.0010		0.0010	0.00037	mg/Kg			03/14/17 10:01	1
cis-1,3-Dichloropropene	<0.0010		0.0010	0.00042	mg/Kg			03/14/17 10:01	1
methyl isobutyl ketone	<0.0050		0.0050	0.0022	mg/Kg			03/14/17 10:01	1
Toluene	<0.00025		0.00025	0.00015	mg/Kg			03/14/17 10:01	1
trans-1,3-Dichloropropene	<0.0010		0.0010	0.00036	mg/Kg			03/14/17 10:01	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-375635/6
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	<0.0010		0.0010	0.00035	mg/Kg			03/14/17 10:01	1
Tetrachloroethene	<0.0010		0.0010	0.00037	mg/Kg			03/14/17 10:01	1
2-Hexanone	<0.0050		0.0050	0.0016	mg/Kg			03/14/17 10:01	1
Dibromochloromethane	<0.0010		0.0010	0.00049	mg/Kg			03/14/17 10:01	1
1,2-Dibromoethane	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Chlorobenzene	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Ethylbenzene	<0.00025		0.00025	0.00018	mg/Kg			03/14/17 10:01	1
Xylenes, Total	<0.00050		0.00050	0.00022	mg/Kg			03/14/17 10:01	1
Styrene	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Bromoform	<0.0010		0.0010	0.00048	mg/Kg			03/14/17 10:01	1
Isopropylbenzene	<0.0010		0.0010	0.00038	mg/Kg			03/14/17 10:01	1
1,1,2,2-Tetrachloroethane	<0.0010		0.0010	0.00040	mg/Kg			03/14/17 10:01	1
1,3-Dichlorobenzene	<0.0010		0.0010	0.00040	mg/Kg			03/14/17 10:01	1
1,4-Dichlorobenzene	<0.0010		0.0010	0.00036	mg/Kg			03/14/17 10:01	1
1,2-Dichlorobenzene	<0.0010		0.0010	0.00033	mg/Kg			03/14/17 10:01	1
1,2-Dibromo-3-Chloropropane	<0.0050		0.0050	0.0020	mg/Kg			03/14/17 10:01	1
1,2,4-Trichlorobenzene	<0.0010		0.0010	0.00034	mg/Kg			03/14/17 10:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*		*03/14/17 10:01*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*03/14/17 10:01*	*1*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*		*03/14/17 10:01*	*1*
Dibromofluoromethane	*93*		*70 - 120*		*03/14/17 10:01*	*1*

Lab Sample ID: LCS 500-375635/4
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	0.0500	0.0362		mg/Kg		72	51 - 140
Chloromethane	0.0500	0.0372		mg/Kg		74	60 - 140
Vinyl chloride	0.0500	0.0457		mg/Kg		91	70 - 126
Bromomethane	0.0500	0.0593		mg/Kg		119	40 - 150
Chloroethane	0.0500	0.0506		mg/Kg		101	60 - 139
Trichlorofluoromethane	0.0500	0.0489		mg/Kg		98	60 - 126
1,1-Dichloroethene	0.0500	0.0523		mg/Kg		105	70 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0500	0.0571		mg/Kg		114	57 - 141
Acetone	0.0500	0.0426		mg/Kg		85	37 - 141
Carbon disulfide	0.0500	0.0499		mg/Kg		100	68 - 125
Methyl acetate	0.250	0.270		mg/Kg		108	60 - 148
Methylene Chloride	0.0500	0.0532		mg/Kg		106	68 - 125
trans-1,2-Dichloroethene	0.0500	0.0522		mg/Kg		104	70 - 125
Methyl tert-butyl ether	0.0500	0.0542		mg/Kg		108	67 - 125
1,1-Dichloroethane	0.0500	0.0540		mg/Kg		108	70 - 125
cis-1,2-Dichloroethene	0.0500	0.0523		mg/Kg		105	70 - 125
Methyl Ethyl Ketone	0.0500	0.0512		mg/Kg		102	52 - 142
Chloroform	0.0500	0.0531		mg/Kg		106	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-375635/4
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.0500	0.0545		mg/Kg		109	70 - 125
Cyclohexane	0.0500	0.0554		mg/Kg		111	56 - 149
Carbon tetrachloride	0.0500	0.0543		mg/Kg		109	70 - 125
Benzene	0.0500	0.0529		mg/Kg		106	70 - 125
1,2-Dichloroethane	0.0500	0.0562		mg/Kg		112	70 - 125
Trichloroethene	0.0500	0.0571		mg/Kg		114	70 - 125
Methylcyclohexane	0.0500	0.0580		mg/Kg		116	70 - 127
1,2-Dichloropropane	0.0500	0.0532		mg/Kg		106	70 - 125
Bromodichloromethane	0.0500	0.0510		mg/Kg		102	70 - 125
cis-1,3-Dichloropropene	0.0500	0.0527		mg/Kg		105	70 - 125
methyl isobutyl ketone	0.0500	0.0508		mg/Kg		102	47 - 140
Toluene	0.0500	0.0562		mg/Kg		112	70 - 125
trans-1,3-Dichloropropene	0.0500	0.0515		mg/Kg		103	70 - 125
1,1,2-Trichloroethane	0.0500	0.0554		mg/Kg		111	70 - 125
Tetrachloroethene	0.0500	0.0589		mg/Kg		118	70 - 125
2-Hexanone	0.0500	0.0498		mg/Kg		100	49 - 139
Dibromochloromethane	0.0500	0.0533		mg/Kg		107	66 - 125
1,2-Dibromoethane	0.0500	0.0544		mg/Kg		109	70 - 125
Chlorobenzene	0.0500	0.0553		mg/Kg		111	70 - 125
Ethylbenzene	0.0500	0.0567		mg/Kg		113	70 - 125
Xylenes, Total	0.100	0.111		mg/Kg		111	70 - 125
Styrene	0.0500	0.0561		mg/Kg		112	70 - 125
Bromoform	0.0500	0.0497		mg/Kg		99	54 - 128
Isopropylbenzene	0.0500	0.0509		mg/Kg		102	70 - 125
1,1,2,2-Tetrachloroethane	0.0500	0.0511		mg/Kg		102	68 - 125
1,3-Dichlorobenzene	0.0500	0.0515		mg/Kg		103	70 - 125
1,4-Dichlorobenzene	0.0500	0.0523		mg/Kg		105	70 - 125
1,2-Dichlorobenzene	0.0500	0.0526		mg/Kg		105	70 - 125
1,2-Dibromo-3-Chloropropane	0.0500	0.0445		mg/Kg		89	51 - 125
1,2,4-Trichlorobenzene	0.0500	0.0617		mg/Kg		123	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*
4-Bromofluorobenzene (Surr)	*88*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-374814/1-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Phenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Bis(2-chloroethyl)ether	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Chlorophenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-374814/1-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,2'-oxybis[1-chloropropane]	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Acetophenone	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
N-Nitrosodi-n-propylamine	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachloroethane	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Nitrobenzene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Isophorone	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Nitrophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dimethylphenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Bis(2-chloroethoxy)methane	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dichlorophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Naphthalene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Chloroaniline	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachlorobutadiene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Caprolactam	<100		100	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Chloro-3-methylphenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Methylnaphthalene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachlorocyclopentadiene	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4,6-Trichlorophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4,5-Trichlorophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
1,1'-Biphenyl	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Chloronaphthalene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Nitroaniline	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Dimethyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,6-Dinitrotoluene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Acenaphthylene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
3-Nitroaniline	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Acenaphthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dinitrophenol	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Nitrophenol	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Dibenzofuran	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dinitrotoluene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Diethyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Fluorene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Chlorophenyl phenyl ether	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Nitroaniline	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4,6-Dinitro-2-methylphenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
N-Nitrosodiphenylamine	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Bromophenyl phenyl ether	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachlorobenzene	<20		20	10	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Atrazine	<100		100	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Pentachlorophenol	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Phenanthrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Anthracene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Carbazole	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Di-n-butyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Fluoranthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Pyrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-374814/1-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butyl benzyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
3,3'-Dichlorobenzidine	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[a]anthracene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Chrysene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Bis(2-ethylhexyl) phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Di-n-octyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[b]fluoranthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[k]fluoranthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[a]pyrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Indeno[1,2,3-cd]pyrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Dibenz(a,h)anthracene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[g,h,i]perylene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
3 & 4 Methylphenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*115*		*40 - 130*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
Phenol-d5 (Surr)	*100*		*36 - 123*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
Nitrobenzene-d5 (Surr)	*91*		*33 - 124*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
2-Fluorobiphenyl (Surr)	*89*		*42 - 115*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*25 - 130*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
Terphenyl-d14 (Surr)	*98*		*25 - 150*	*03/07/17 21:45*	*03/08/17 12:14*	*1*

Lab Sample ID: LCS 500-374814/2-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	80.0	93.0		mg/Kg		116	55 - 118
Bis(2-chloroethyl)ether	80.0	89.5		mg/Kg		112	53 - 116
2-Chlorophenol	80.0	83.0		mg/Kg		104	57 - 117
2-Methylphenol	80.0	88.4		mg/Kg		110	53 - 123
2,2'-oxybis[1-chloropropane]	80.0	93.3		mg/Kg		117	22 - 133
Acetophenone	80.0	77.8		mg/Kg		97	48 - 110
N-Nitrosodi-n-propylamine	80.0	83.6		mg/Kg		104	56 - 119
Hexachloroethane	80.0	85.2		mg/Kg		106	54 - 111
Nitrobenzene	80.0	86.5		mg/Kg		108	56 - 121
Isophorone	80.0	83.3		mg/Kg		104	54 - 120
2-Nitrophenol	80.0	91.6	J	mg/Kg		114	58 - 121
2,4-Dimethylphenol	80.0	83.5	J	mg/Kg		104	50 - 120
Bis(2-chloroethoxy)methane	80.0	84.0		mg/Kg		105	59 - 116
2,4-Dichlorophenol	80.0	80.9	J	mg/Kg		101	61 - 116
Naphthalene	80.0	77.5		mg/Kg		97	58 - 116
4-Chloroaniline	80.0	<100		mg/Kg		21	10 - 150
Hexachlorobutadiene	80.0	66.2		mg/Kg		83	56 - 120
4-Chloro-3-methylphenol	80.0	83.7	J	mg/Kg		105	59 - 117
2-Methylnaphthalene	80.0	73.5		mg/Kg		92	55 - 120
Hexachlorocyclopentadiene	80.0	<200		mg/Kg		57	10 - 116
2,4,6-Trichlorophenol	80.0	76.0	J	mg/Kg		95	50 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-374814/2-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-Trichlorophenol	80.0	74.6	J	mg/Kg		93	42 - 119
2-Chloronaphthalene	80.0	79.3		mg/Kg		99	57 - 112
2-Nitroaniline	80.0	71.4		mg/Kg		89	52 - 121
Dimethyl phthalate	80.0	78.2		mg/Kg		98	60 - 112
2,6-Dinitrotoluene	80.0	80.2		mg/Kg		100	57 - 118
Acenaphthylene	80.0	79.9		mg/Kg		100	57 - 116
3-Nitroaniline	80.0	<100	*	mg/Kg		16	20 - 144
Acenaphthene	80.0	75.0		mg/Kg		94	52 - 113
2,4-Dinitrophenol	160	127	J	mg/Kg		79	10 - 110
4-Nitrophenol	160	148	J	mg/Kg		92	32 - 123
Dibenzofuran	80.0	79.6		mg/Kg		100	59 - 110
2,4-Dinitrotoluene	80.0	83.0		mg/Kg		104	59 - 119
Diethyl phthalate	80.0	74.9		mg/Kg		94	58 - 117
Fluorene	80.0	77.9		mg/Kg		97	56 - 115
4-Chlorophenyl phenyl ether	80.0	74.1		mg/Kg		93	61 - 111
4-Nitroaniline	80.0	<100	*	mg/Kg		54	55 - 146
4,6-Dinitro-2-methylphenol	160	143		mg/Kg		89	10 - 110
N-Nitrosodiphenylamine	80.0	53.8		mg/Kg		67	62 - 117
4-Bromophenyl phenyl ether	80.0	71.8		mg/Kg		90	61 - 124
Hexachlorobenzene	80.0	67.9		mg/Kg		85	62 - 126
Pentachlorophenol	160	117	J	mg/Kg		73	12 - 116
Phenanthrene	80.0	75.8		mg/Kg		95	58 - 125
Anthracene	80.0	76.5		mg/Kg		96	57 - 118
Carbazole	80.0	<51	*	mg/Kg		24	65 - 137
Di-n-butyl phthalate	80.0	78.4		mg/Kg		98	61 - 123
Fluoranthene	80.0	72.7		mg/Kg		91	61 - 124
Pyrene	80.0	82.7		mg/Kg		103	60 - 115
Butyl benzyl phthalate	80.0	89.7		mg/Kg		112	61 - 115
3,3'-Dichlorobenzidine	80.0	40.3	J	mg/Kg		50	40 - 110
Benzo[a]anthracene	80.0	75.1		mg/Kg		94	63 - 115
Chrysene	80.0	76.8		mg/Kg		96	63 - 118
Bis(2-ethylhexyl) phthalate	80.0	87.1		mg/Kg		109	62 - 117
Di-n-octyl phthalate	80.0	83.9		mg/Kg		105	58 - 129
Benzo[b]fluoranthene	80.0	85.7		mg/Kg		107	61 - 123
Benzo[k]fluoranthene	80.0	83.0		mg/Kg		104	59 - 125
Benzo[a]pyrene	80.0	82.0		mg/Kg		103	64 - 122
Indeno[1,2,3-cd]pyrene	80.0	80.3		mg/Kg		100	50 - 149
Dibenz(a,h)anthracene	80.0	80.0		mg/Kg		100	61 - 134
Benzo[g,h,i]perylene	80.0	84.2		mg/Kg		105	55 - 134
3 & 4 Methylphenol	80.0	83.0		mg/Kg		104	55 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*118*		*40 - 130*
Phenol-d5 (Surr)	*111*		*36 - 123*
Nitrobenzene-d5 (Surr)	*95*		*33 - 124*
2-Fluorobiphenyl (Surr)	*87*		*42 - 115*
2,4,6-Tribromophenol (Surr)	*85*		*25 - 130*
Terphenyl-d14 (Surr)	*98*		*25 - 150*

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Lab Sample ID: LCSD 500-374814/3-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374814

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	80.0	89.0		mg/Kg		111	55 - 118	4	30
Bis(2-chloroethyl)ether	80.0	85.3		mg/Kg		107	53 - 116	5	30
2-Chlorophenol	80.0	78.6		mg/Kg		98	57 - 117	6	30
2-Methylphenol	80.0	83.2		mg/Kg		104	53 - 123	6	30
2,2'-oxybis[1-chloropropane]	80.0	86.1		mg/Kg		108	22 - 133	8	30
Acetophenone	80.0	74.0		mg/Kg		93	48 - 110	5	30
N-Nitrosodi-n-propylamine	80.0	79.2		mg/Kg		99	56 - 119	5	30
Hexachloroethane	80.0	78.8		mg/Kg		99	54 - 111	8	30
Nitrobenzene	80.0	81.8		mg/Kg		102	56 - 121	5	30
Isophorone	80.0	79.4		mg/Kg		99	54 - 120	5	30
2-Nitrophenol	80.0	87.3	J	mg/Kg		109	58 - 121	5	30
2,4-Dimethylphenol	80.0	81.0	J	mg/Kg		101	50 - 120	3	30
Bis(2-chloroethoxy)methane	80.0	80.7		mg/Kg		101	59 - 116	4	30
2,4-Dichlorophenol	80.0	78.3	J	mg/Kg		98	61 - 116	3	30
Naphthalene	80.0	74.5		mg/Kg		93	58 - 116	4	30
4-Chloroaniline	80.0	<100		mg/Kg		17	10 - 150	18	30
Hexachlorobutadiene	80.0	65.4		mg/Kg		82	56 - 120	1	30
4-Chloro-3-methylphenol	80.0	82.3	J	mg/Kg		103	59 - 117	2	30
2-Methylnaphthalene	80.0	73.4		mg/Kg		92	55 - 120	0	30
Hexachlorocyclopentadiene	80.0	<200		mg/Kg		56	10 - 116	0	30
2,4,6-Trichlorophenol	80.0	73.7	J	mg/Kg		92	50 - 120	3	30
2,4,5-Trichlorophenol	80.0	72.0	J	mg/Kg		90	42 - 119	4	30
2-Chloronaphthalene	80.0	75.3		mg/Kg		94	57 - 112	5	30
2-Nitroaniline	80.0	70.4		mg/Kg		88	52 - 121	1	30
Dimethyl phthalate	80.0	74.8		mg/Kg		93	60 - 112	5	30
2,6-Dinitrotoluene	80.0	77.8		mg/Kg		97	57 - 118	3	30
Acenaphthylene	80.0	76.8		mg/Kg		96	57 - 116	4	30
3-Nitroaniline	80.0	<100	*	mg/Kg		16	20 - 144	5	30
Acenaphthene	80.0	70.7		mg/Kg		88	52 - 113	6	30
2,4-Dinitrophenol	160	125	J	mg/Kg		78	10 - 110	1	30
4-Nitrophenol	160	138	J	mg/Kg		86	32 - 123	7	30
Dibenzofuran	80.0	74.4		mg/Kg		93	59 - 110	7	30
2,4-Dinitrotoluene	80.0	78.1		mg/Kg		98	59 - 119	6	30
Diethyl phthalate	80.0	70.6		mg/Kg		88	58 - 117	6	30
Fluorene	80.0	74.5		mg/Kg		93	56 - 115	4	30
4-Chlorophenyl phenyl ether	80.0	70.6		mg/Kg		88	61 - 111	5	30
4-Nitroaniline	80.0	<100	*	mg/Kg		47	55 - 146	14	30
4,6-Dinitro-2-methylphenol	160	138		mg/Kg		86	10 - 110	4	30
N-Nitrosodiphenylamine	80.0	52.3		mg/Kg		65	62 - 117	3	30
4-Bromophenyl phenyl ether	80.0	69.0		mg/Kg		86	61 - 124	4	30
Hexachlorobenzene	80.0	65.1		mg/Kg		81	62 - 126	4	30
Pentachlorophenol	160	107	J	mg/Kg		67	12 - 116	9	30
Phenanthrene	80.0	72.1		mg/Kg		90	58 - 125	5	30
Anthracene	80.0	73.6		mg/Kg		92	57 - 118	4	30
Carbazole	80.0	<51	*	mg/Kg		26	65 - 137	7	30
Di-n-butyl phthalate	80.0	74.0		mg/Kg		92	61 - 123	6	30
Fluoranthene	80.0	68.8		mg/Kg		86	61 - 124	6	30
Pyrene	80.0	80.6		mg/Kg		101	60 - 115	3	30
Butyl benzyl phthalate	80.0	87.4		mg/Kg		109	61 - 115	3	30
3,3'-Dichlorobenzidine	80.0	38.0	J	mg/Kg		48	40 - 110	6	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-374814/3-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374814

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene			80.0	73.3		mg/Kg		92	63 - 115	2	30
Chrysene			80.0	75.2		mg/Kg		94	63 - 118	2	30
Bis(2-ethylhexyl) phthalate			80.0	84.3		mg/Kg		105	62 - 117	3	30
Di-n-octyl phthalate			80.0	80.1		mg/Kg		100	58 - 129	5	30
Benzo[b]fluoranthene			80.0	84.7		mg/Kg		106	61 - 123	1	30
Benzo[k]fluoranthene			80.0	80.2		mg/Kg		100	59 - 125	3	30
Benzo[a]pyrene			80.0	78.2		mg/Kg		98	64 - 122	5	30
Indeno[1,2,3-cd]pyrene			80.0	73.1		mg/Kg		91	50 - 149	9	30
Dibenz(a,h)anthracene			80.0	72.8		mg/Kg		91	61 - 134	9	30
Benzo[g,h,i]perylene			80.0	77.4		mg/Kg		97	55 - 134	8	30
3 & 4 Methylphenol			80.0	79.2		mg/Kg		99	55 - 124	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*113*		*40 - 130*
Phenol-d5 (Surr)	*105*		*36 - 123*
Nitrobenzene-d5 (Surr)	*91*		*33 - 124*
2-Fluorobiphenyl (Surr)	*83*		*42 - 115*
2,4,6-Tribromophenol (Surr)	*80*		*25 - 130*
Terphenyl-d14 (Surr)	*95*		*25 - 150*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-374749/1-A
Matrix: Waste
Analysis Batch: 375068

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374749

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1016	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1221	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1221	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1232	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1232	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1242	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1242	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1248	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1248	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1254	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1254	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1260	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1260	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*96*		*62 - 121*	*03/07/17 14:02*	*03/09/17 13:19*	*1*
Tetrachloro-m-xylene	*97*		*62 - 121*	*03/07/17 14:02*	*03/09/17 13:19*	*1*
DCB Decachlorobiphenyl	*91*		*53 - 118*	*03/07/17 14:02*	*03/09/17 13:19*	*1*
DCB Decachlorobiphenyl	*91*		*53 - 118*	*03/07/17 14:02*	*03/09/17 13:19*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 500-374749/2-A
Matrix: Waste
Analysis Batch: 375068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	5.00	5.53		mg/Kg		111	60 - 118
PCB-1016	5.00	5.08		mg/Kg		102	60 - 118
PCB-1260	5.00	5.59		mg/Kg		112	66 - 125
PCB-1260	5.00	5.33		mg/Kg		107	66 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*104*		*62 - 121*
Tetrachloro-m-xylene	*104*		*62 - 121*
DCB Decachlorobiphenyl	*102*		*53 - 118*
DCB Decachlorobiphenyl	*98*		*53 - 118*

Lab Sample ID: LCSD 500-374749/3-A
Matrix: Waste
Analysis Batch: 375068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374749

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	5.00	4.70		mg/Kg		94	60 - 118	16	30
PCB-1016	5.00	4.33		mg/Kg		87	60 - 118	16	30
PCB-1260	5.00	4.83		mg/Kg		97	66 - 125	15	30
PCB-1260	5.00	4.61		mg/Kg		92	66 - 125	14	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*93*		*62 - 121*
Tetrachloro-m-xylene	*91*		*62 - 121*
DCB Decachlorobiphenyl	*89*		*53 - 118*
DCB Decachlorobiphenyl	*86*		*53 - 118*

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			374496	03/05/17 17:07	WRE	TAL CHI
Total/NA	Analysis	8260B		5000	375465	03/13/17 14:13	PMF	TAL CHI
Total/NA	Prep	5030B	DL		374496	03/05/17 17:07	WRE	TAL CHI
Total/NA	Analysis	8260B	DL	50000	375465	03/13/17 14:40	PMF	TAL CHI
Total/NA	Prep	5030B	DL2		374496	03/05/17 17:07	WRE	TAL CHI
Total/NA	Analysis	8260B	DL2	500000	375635	03/14/17 11:17	PMF	TAL CHI
Total/NA	Prep	3580A	DL		374814	03/07/17 21:45	LLH	TAL CHI
Total/NA	Analysis	8270D	DL	50	374842	03/08/17 17:55	AJD	TAL CHI
Total/NA	Prep	3580A			374814	03/07/17 21:45	LLH	TAL CHI
Total/NA	Analysis	8270D		10	374842	03/08/17 18:51	AJD	TAL CHI
Total/NA	Prep	3580A			374749	03/07/17 14:02	JJH	TAL CHI
Total/NA	Analysis	8082A		50	375068	03/09/17 14:05	BJH	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B	5030B	Waste	Cyclohexane
8260B	5030B	Waste	Methyl acetate
8260B	5030B	Waste	Methylcyclohexane
8270D	3580A	Waste	1,1'-Biphenyl
8270D	3580A	Waste	Atrazine
8270D	3580A	Waste	Benzaldehyde
8270D	3580A	Waste	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-124554
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.6

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #: 50011099
Sampler: Ben Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Waste Oil SVOC (Preservative 8)	Waste Oil VOC (Preservative 8)	Waste Oil PCB (Preservative 8)							Comments
1		MW-12-FP-03022017	3/2/17	10:10	3	OL	1	1	1							

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	3/2/2017	1134	[illegible]	TA-CHI	3/2/17	1134
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped
Hand Delivered X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
500-124554 COC

TAL-4124 (0809)
3/16/2017

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-124554-1

Login Number: 124554
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

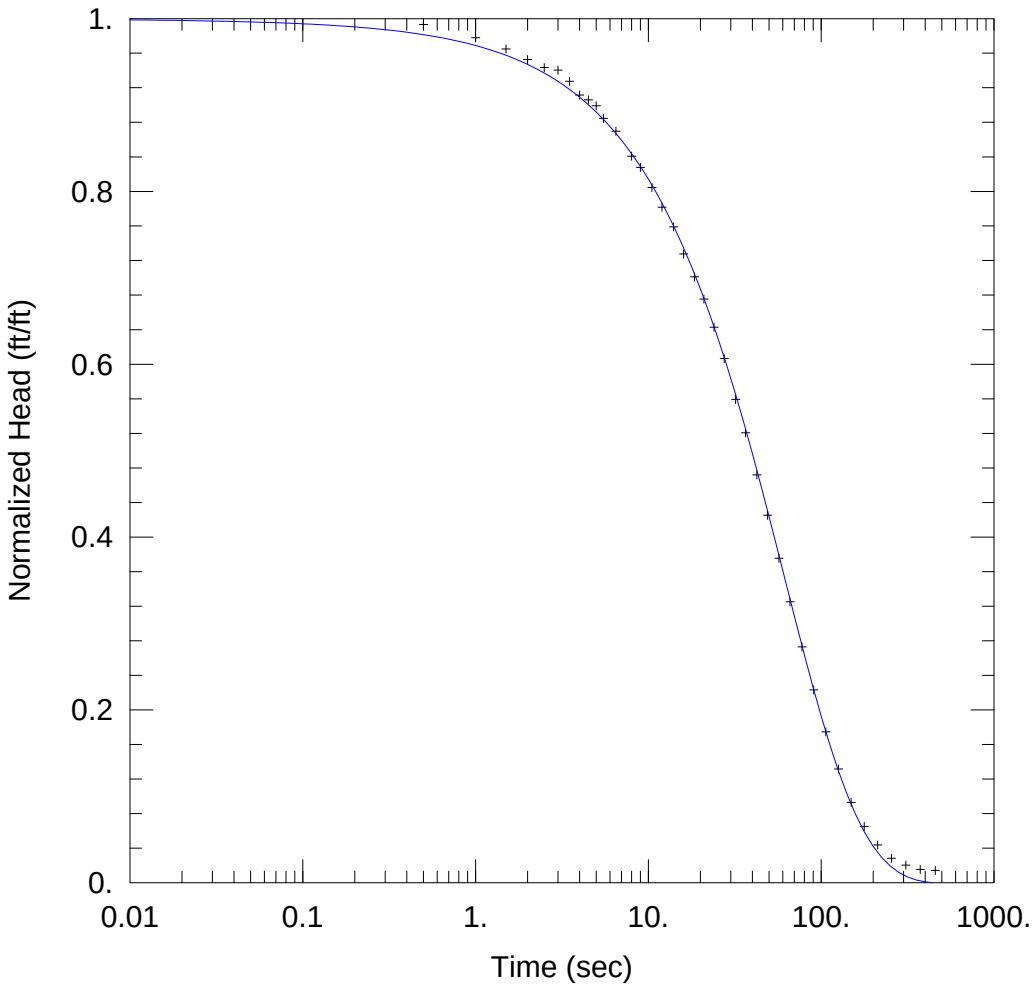
Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX I

Slug Test Results

MW-1, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 1.7 ft/day Ss = 5.7E-6 ft^{-1}
Kz/Kr = 1.

AQUIFER DATA

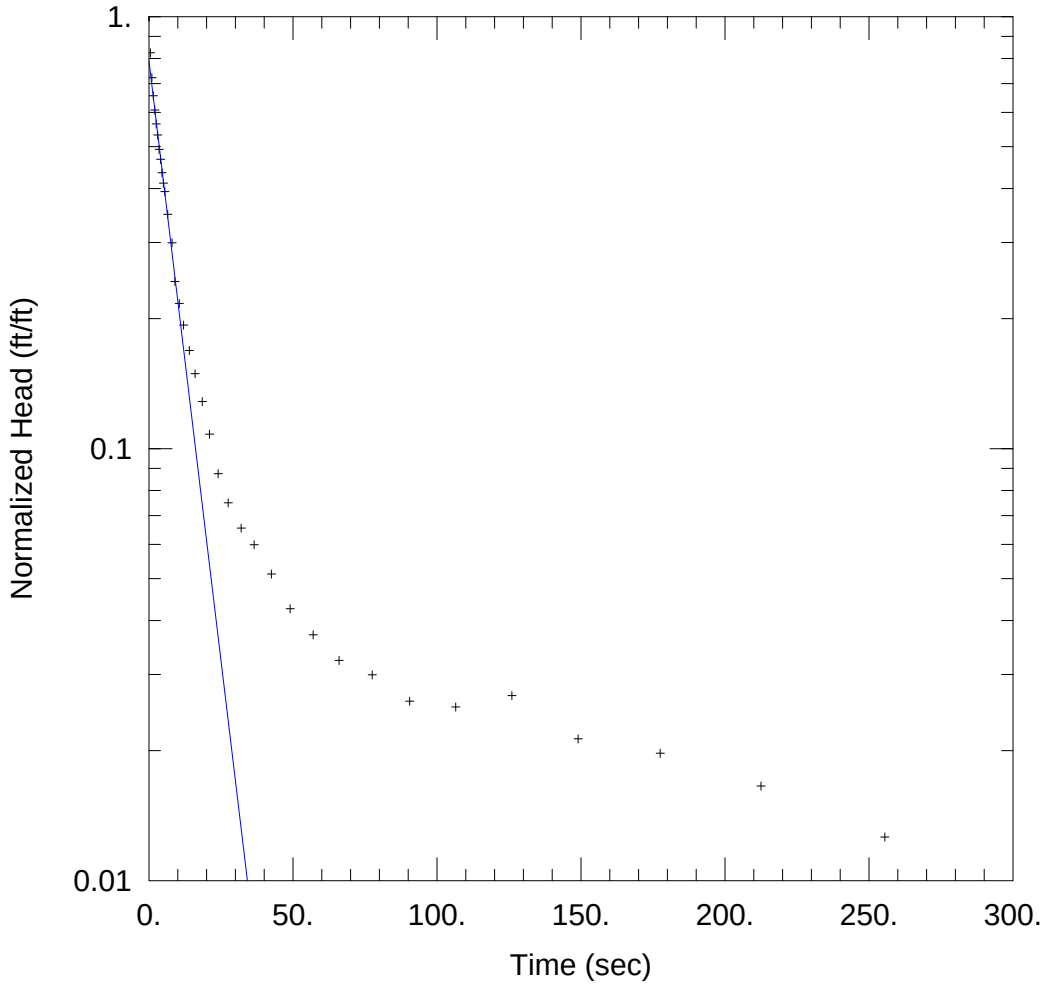
Saturated Thickness: 14.42 ft

WELL DATA (MW-1)

Initial Displacement: 1.627 ft
Static Water Column Height: 14.42 ft
Total Well Penetration Depth: 14.42 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-2, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 16. ft/day y0 = 1. ft

AQUIFER DATA

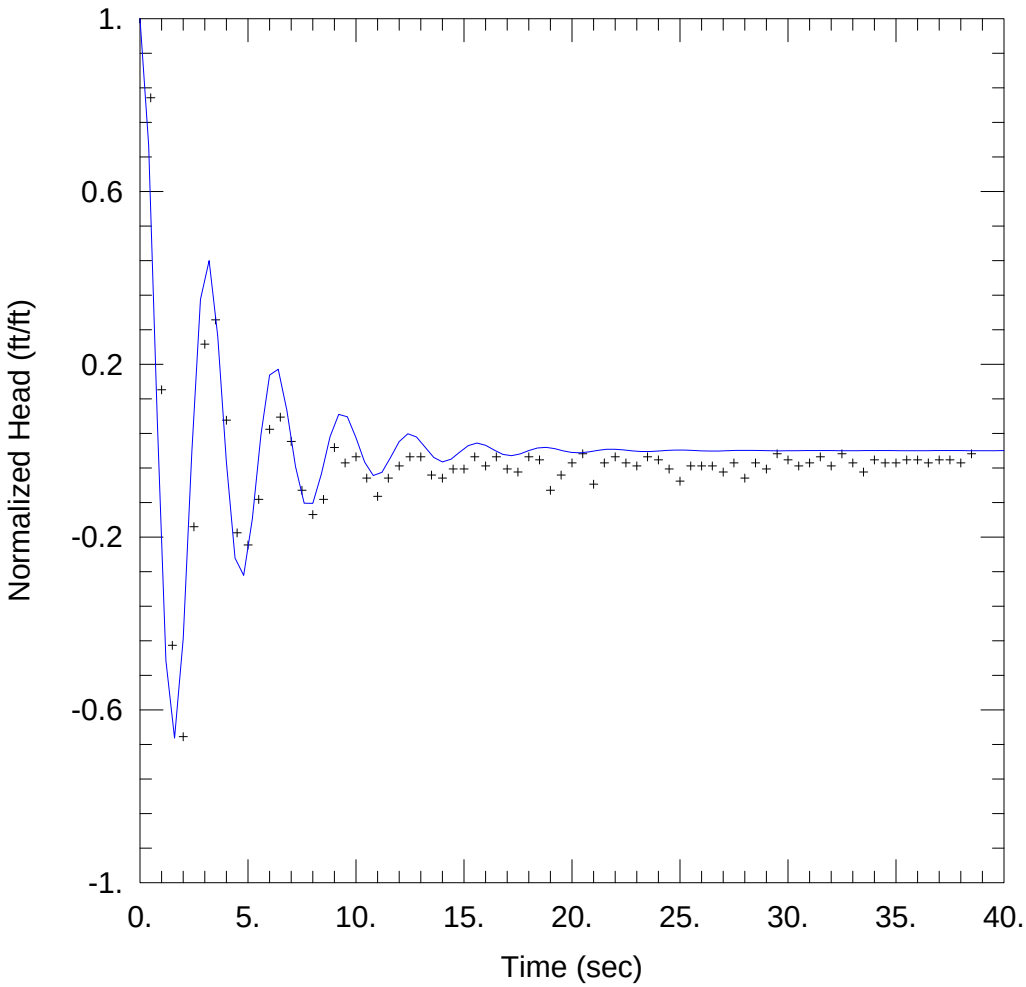
Saturated Thickness: 14.73 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 1.268 ft
Static Water Column Height: 14.73 ft
Total Well Penetration Depth: 14.73 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-3, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar

K = 700. ft/day Le = 7.8 ft

AQUIFER DATA

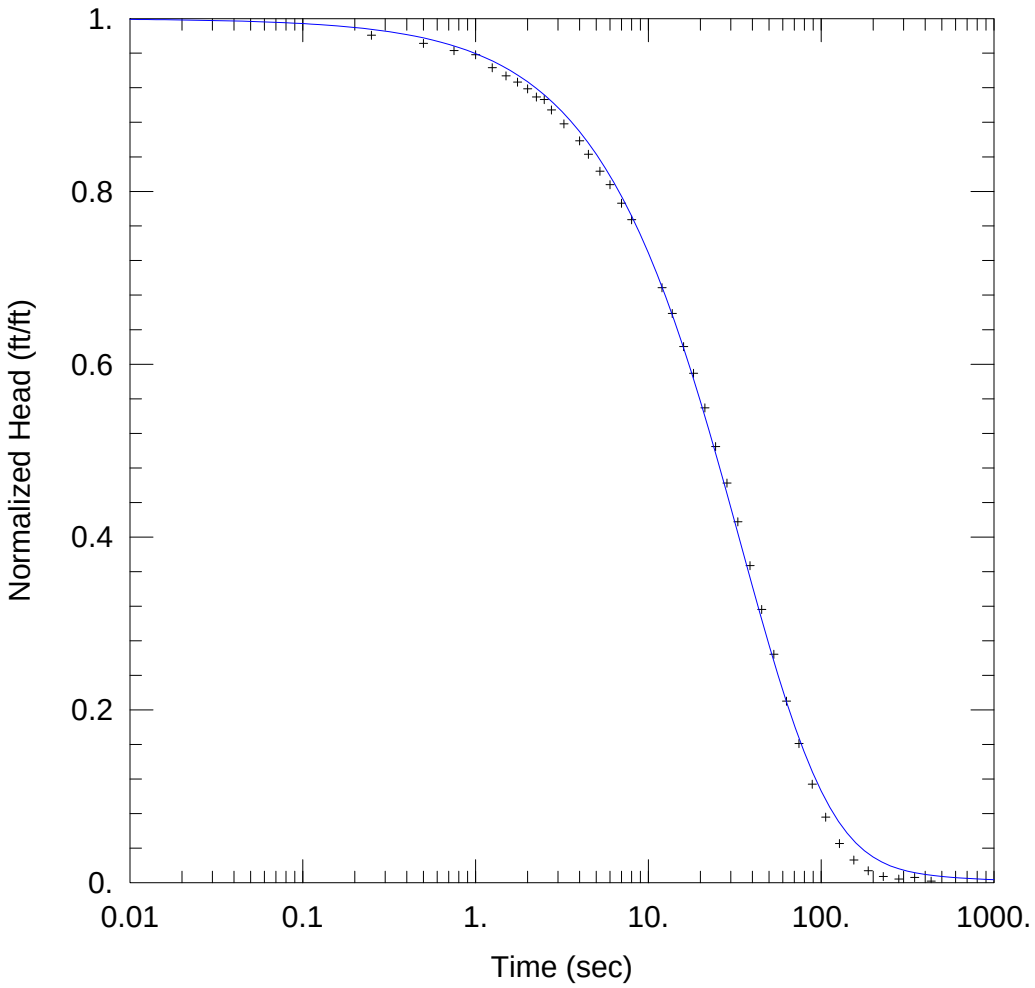
Saturated Thickness: 14.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

Initial Displacement: 0.142 ft
Static Water Column Height: 14.5 ft
Total Well Penetration Depth: 14.5 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-4, Test 1

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Bredehoeft-Papadopulos

T = 52. ft^2/day S = 1.5E-6

AQUIFER DATA

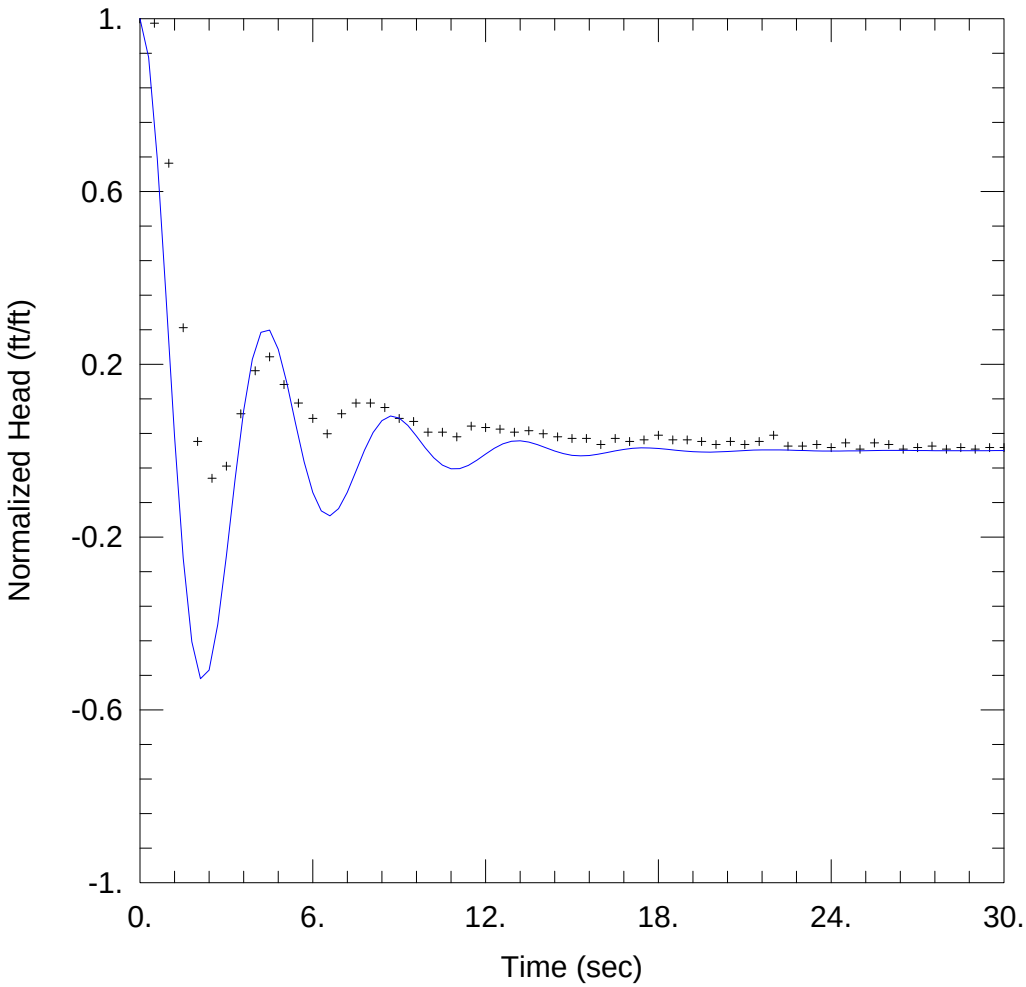
Saturated Thickness: 8.99 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4)

Initial Displacement: 1.676 ft
Static Water Column Height: 8.99 ft
Total Well Penetration Depth: 8.99 ft
Screen Length: 8.99 ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-5, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Butler

K = 480. ft/day Le = 15. ft

AQUIFER DATA

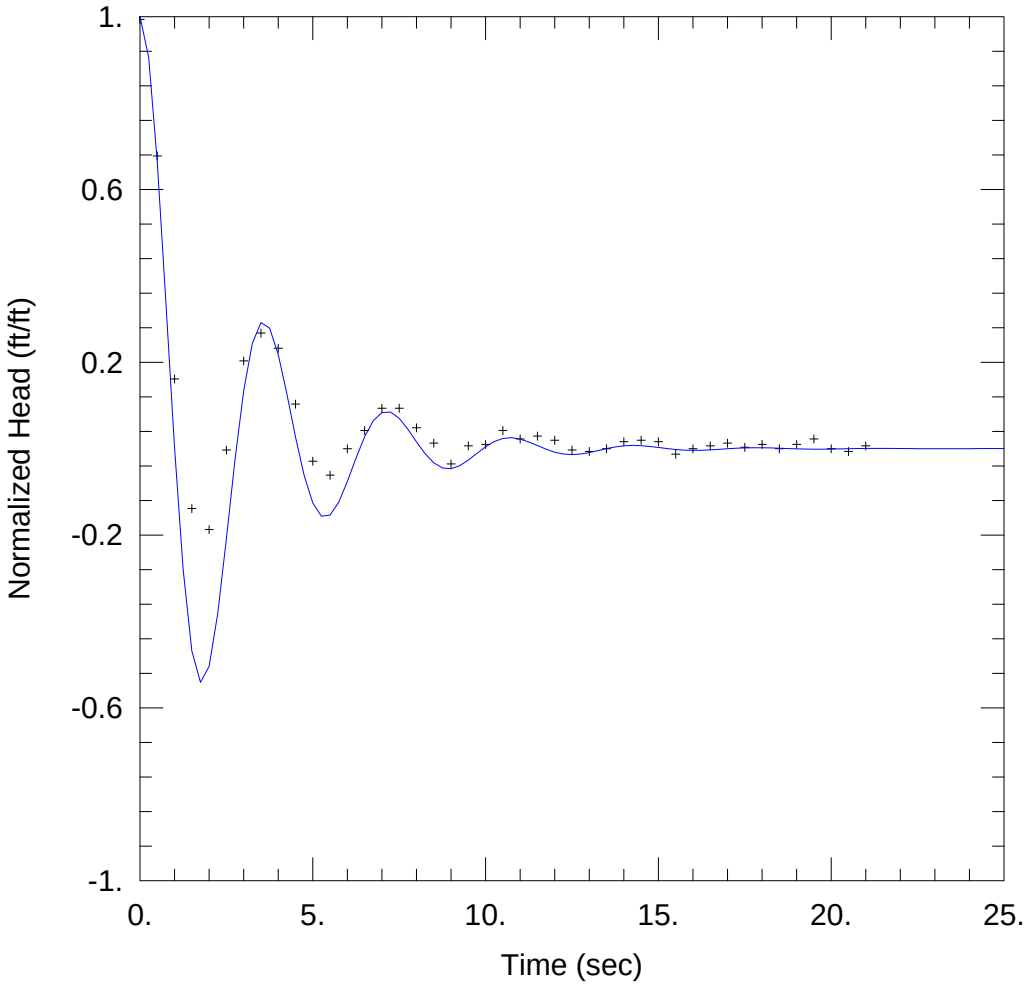
Saturated Thickness: 18.46 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-5)

Initial Displacement: 0.281 ft
Static Water Column Height: 18.46 ft
Total Well Penetration Depth: 18.46 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-6, Test 1

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar

K = 400. ft/day Le = 10. ft

AQUIFER DATA

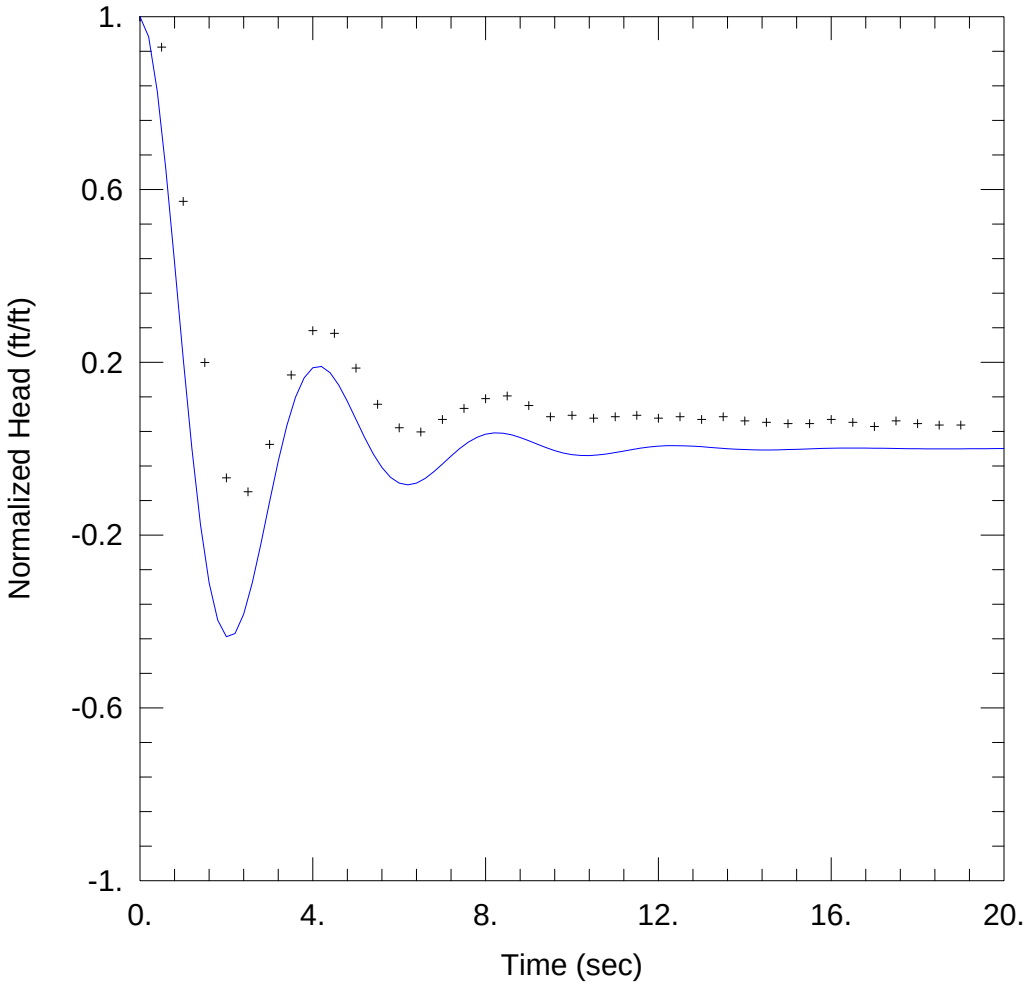
Saturated Thickness: 13.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6)

Initial Displacement: 0.31 ft
Static Water Column Height: 13.2 ft
Total Well Penetration Depth: 13.2 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-7, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Butler

K = 330. ft/day Le = 13. ft

AQUIFER DATA

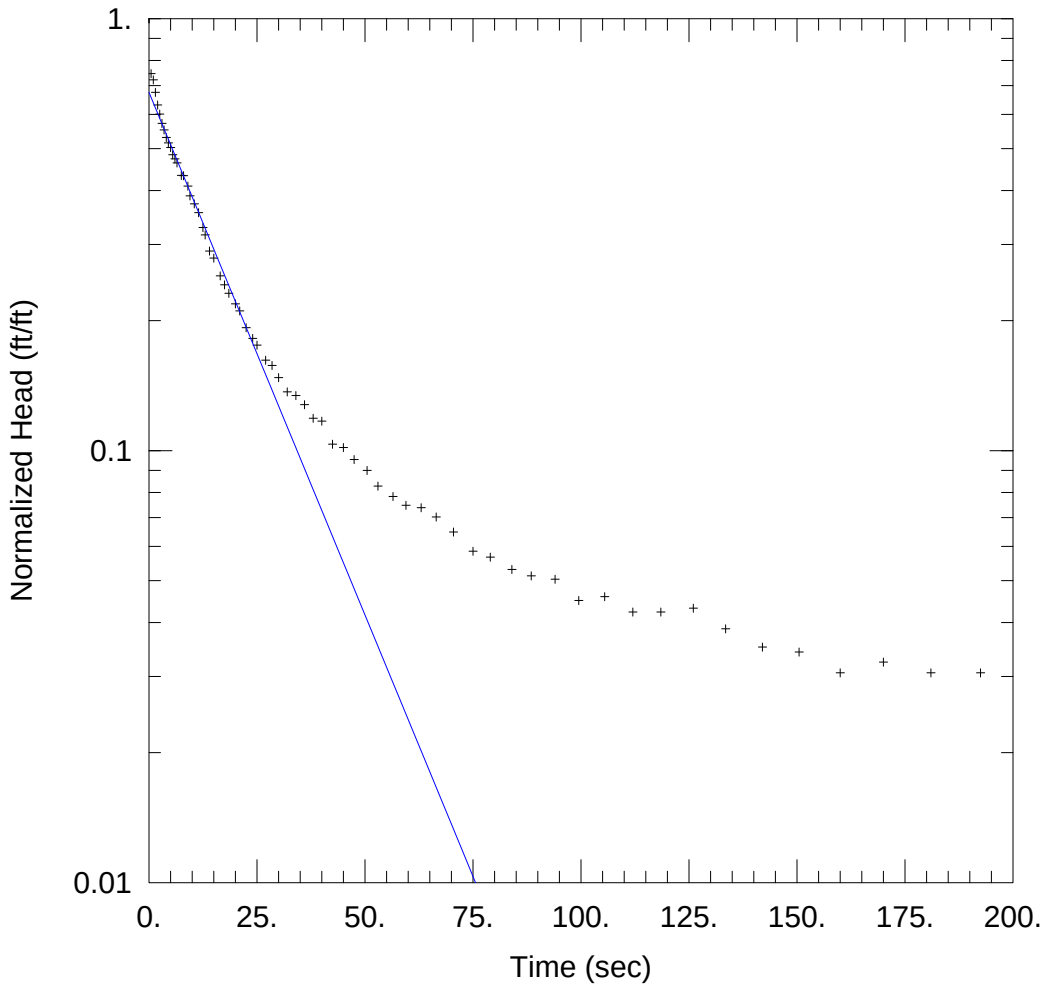
Saturated Thickness: 19.94 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7)

Initial Displacement: 0.311 ft
Static Water Column Height: 19.94 ft
Total Well Penetration Depth: 19.94 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-8, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 11. ft/day y0 = 0.75 ft

AQUIFER DATA

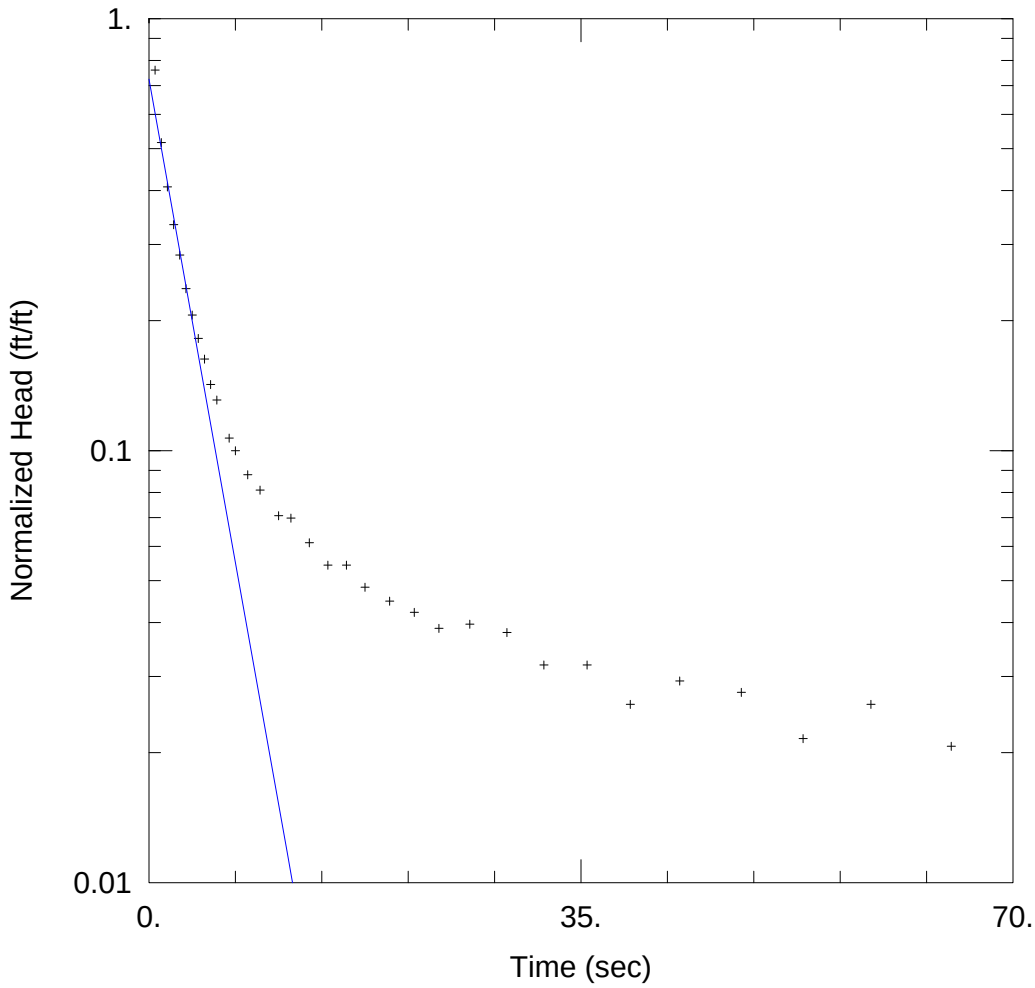
Saturated Thickness: 10.88 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-8)

Initial Displacement: 1.111 ft
Static Water Column Height: 10.88 ft
Total Well Penetration Depth: 10.88 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-9, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 66. ft/day y0 = 0.84 ft

AQUIFER DATA

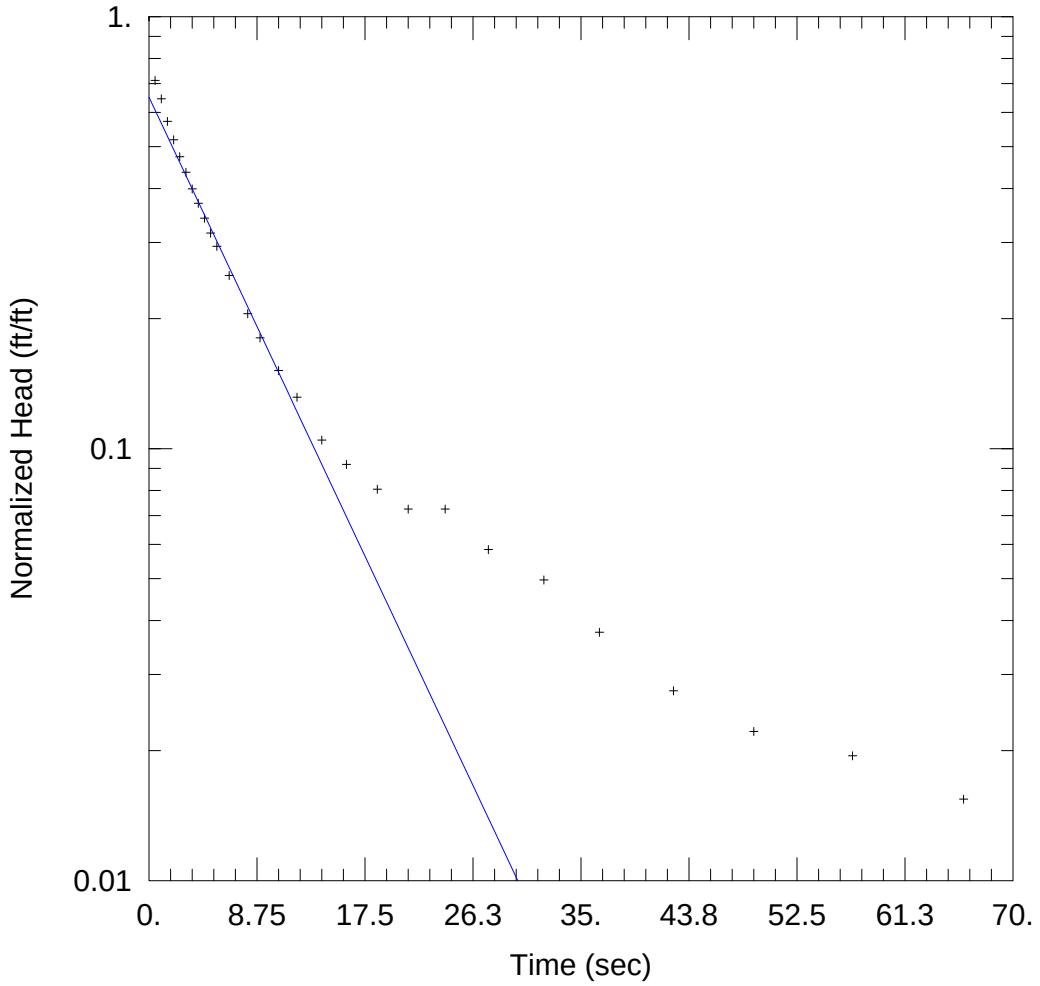
Saturated Thickness: 11.69 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-9)

Initial Displacement: 1.16 ft
Static Water Column Height: 11.69 ft
Total Well Penetration Depth: 11.69 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-10, Test 1

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 22. ft/day y0 = 0.97 ft

AQUIFER DATA

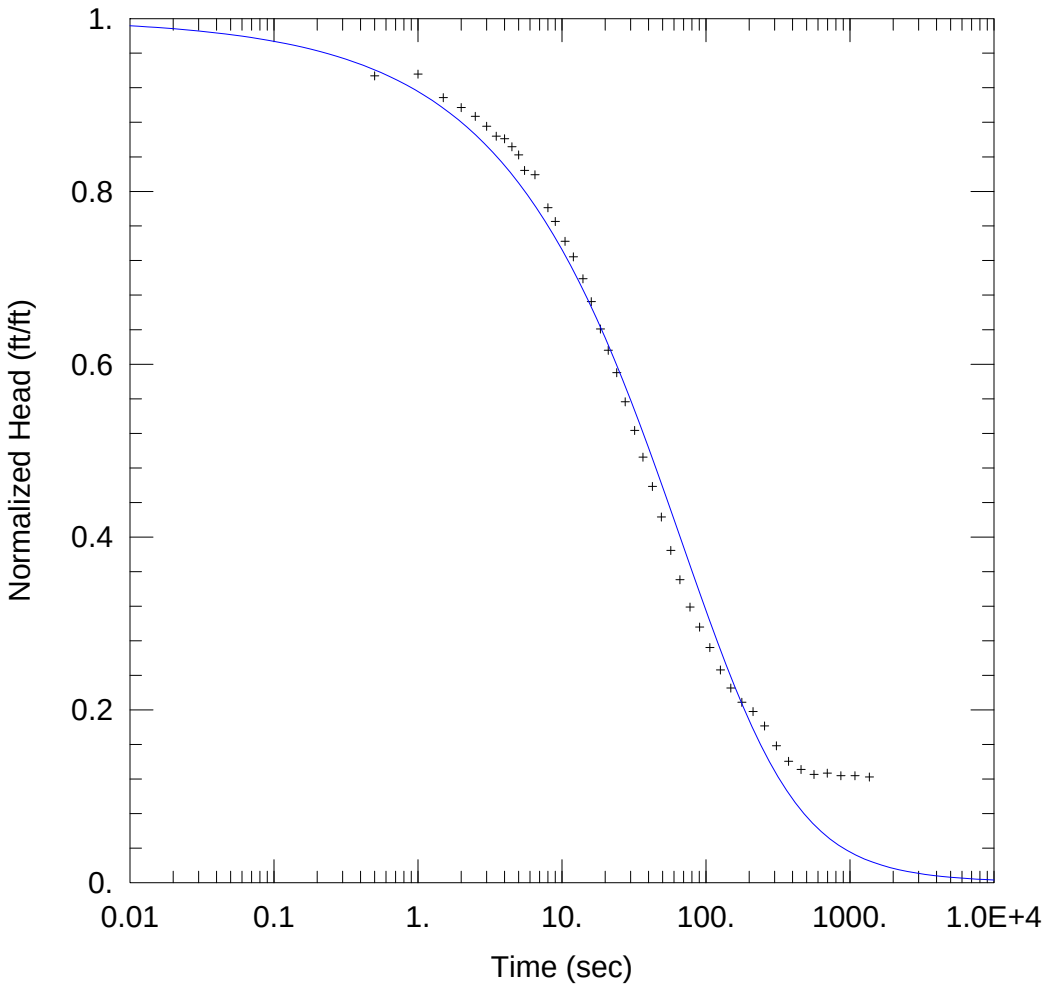
Saturated Thickness: 9.24 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 1.49 ft
Static Water Column Height: 9.24 ft
Total Well Penetration Depth: 9.24 ft
Screen Length: 9.24 ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-11, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Bredehoeft-Papadopulos

T = 7. ft^2/day S = 0.012

AQUIFER DATA

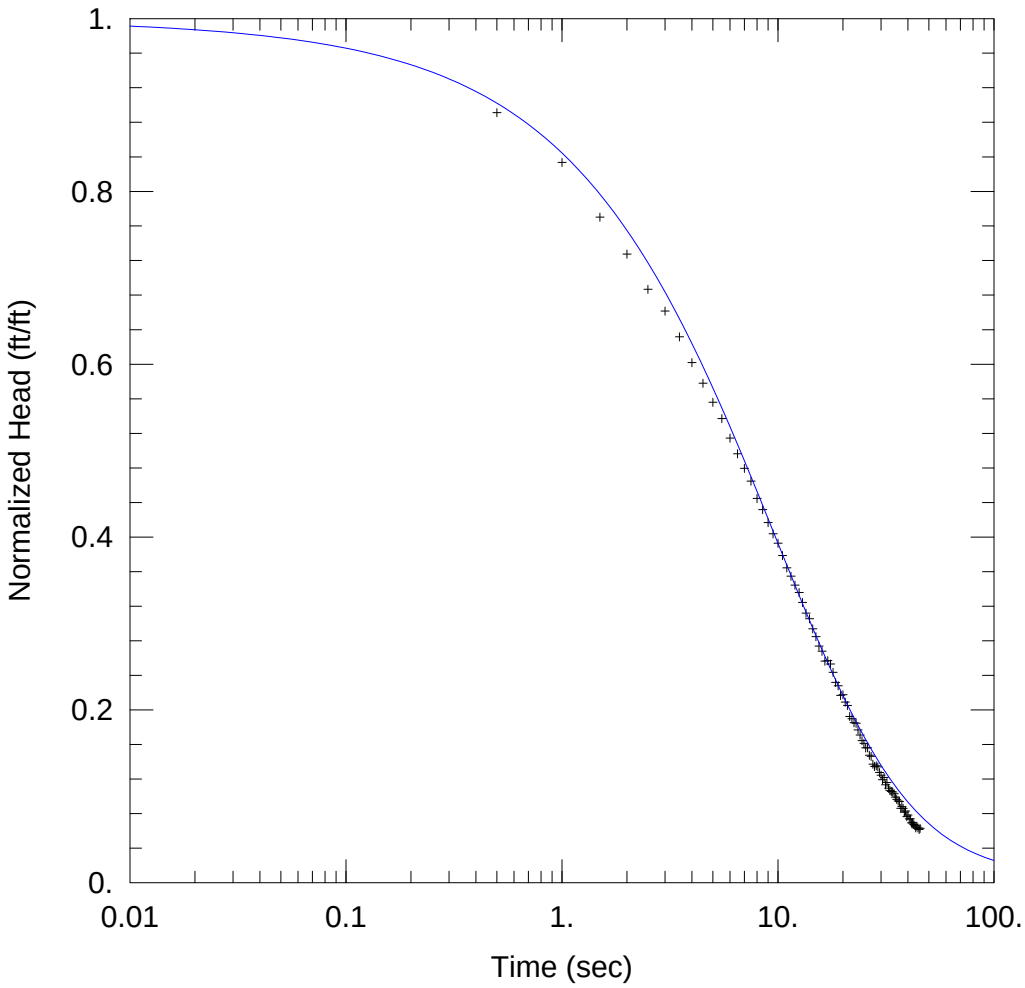
Saturated Thickness: 11.56 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-11)

Initial Displacement: 1.389 ft
Static Water Column Height: 11.56 ft
Total Well Penetration Depth: 11.56 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-13, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Bredehoeft-Papadopulos

T = 100. ft^2/day S = 0.00056

AQUIFER DATA

Saturated Thickness: 15.44 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-13)

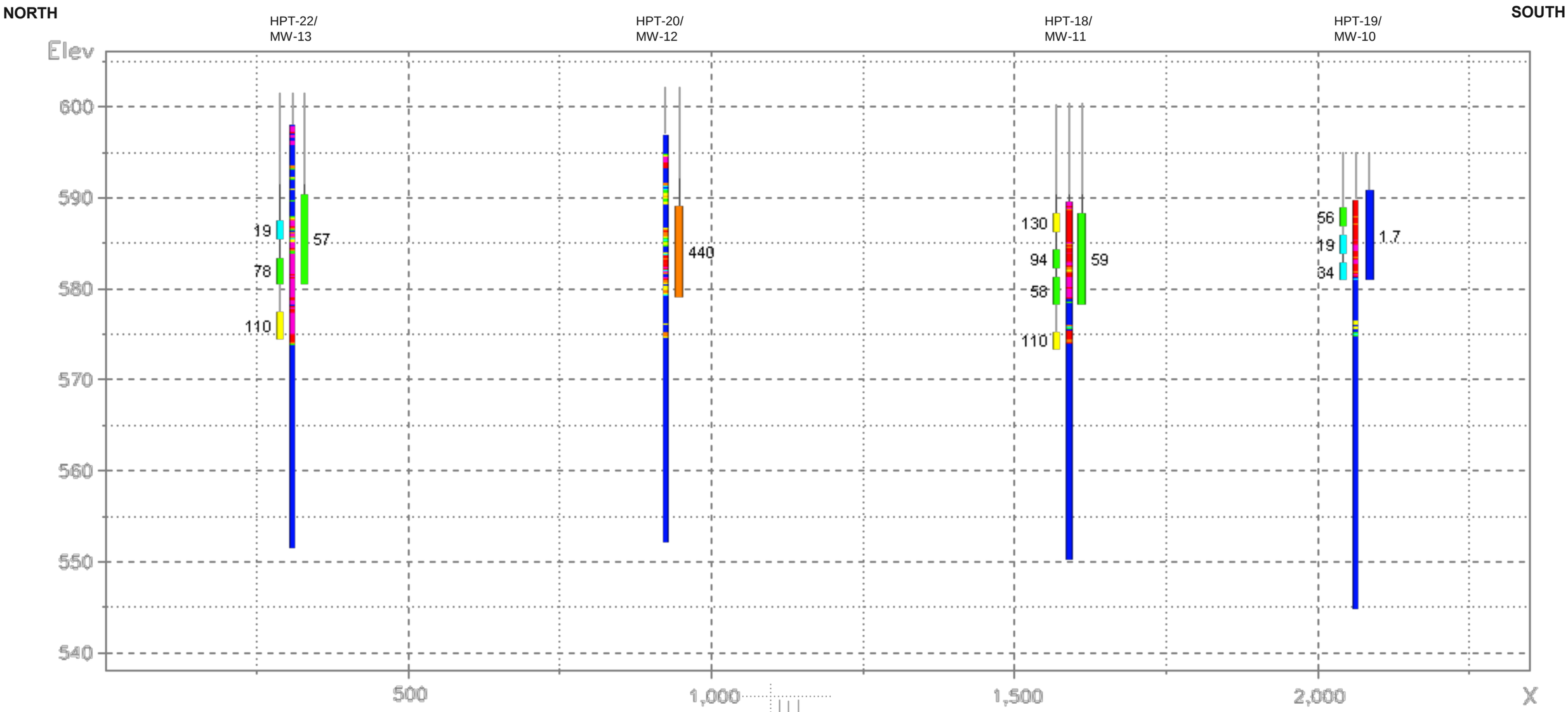
Initial Displacement: 1.545 ft
Static Water Column Height: 15.44 ft
Total Well Penetration Depth: 15.44 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

APPENDIX J

Northern, Western, and Eastern Site Boundary Profiles

Western Boundary – Estimated Hydraulic Conductivity and Ammonia Nitrogen Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

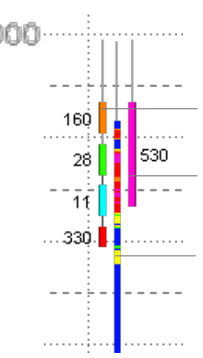


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ammonia Nitrogen Concentration

- >500 mg/L
- >250 – 500 mg/L
- >100 – 250 mg/L
- >50 – 100 mg/L
- >15 – 50 mg/L
- Non-Detect – 15 mg/L



HPT/VAP Sample– Sampled Interval and Value

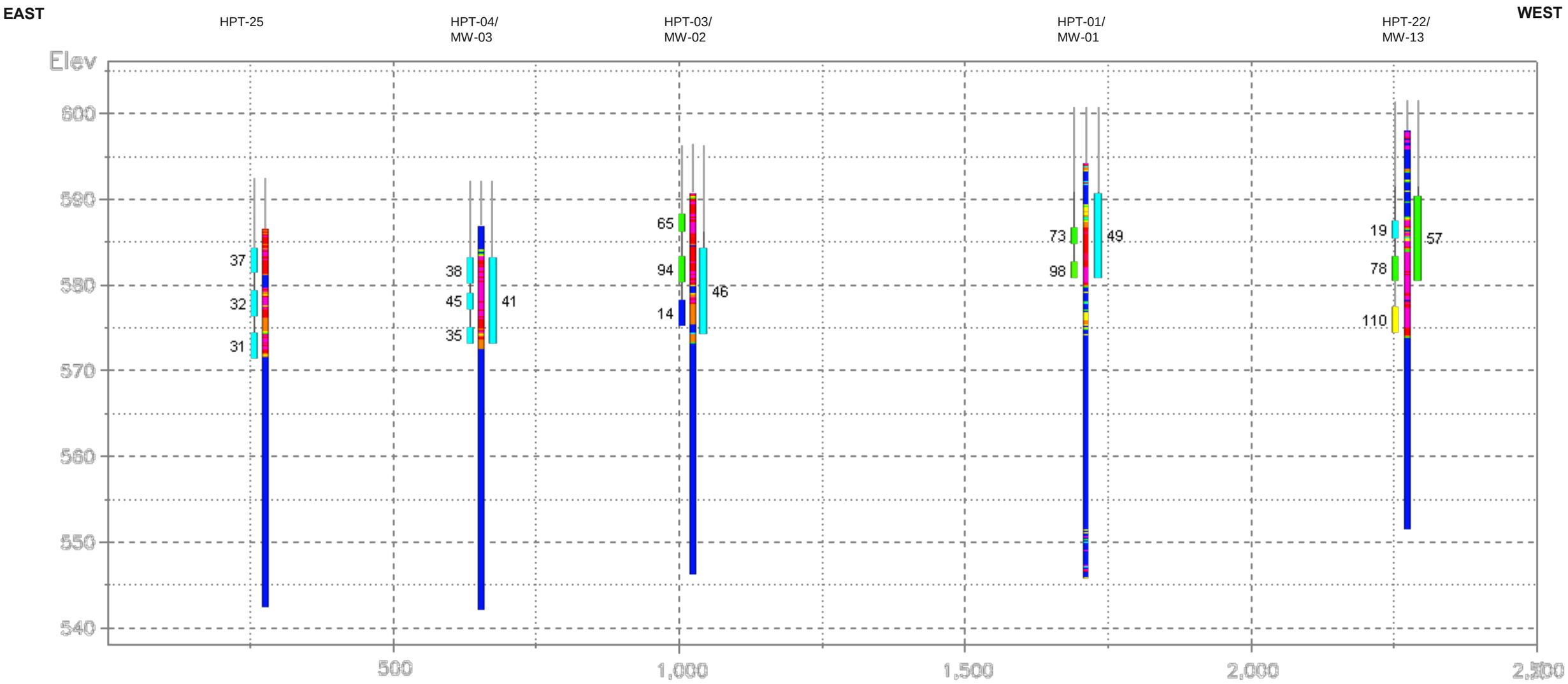
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Ammonia Nitrogen Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

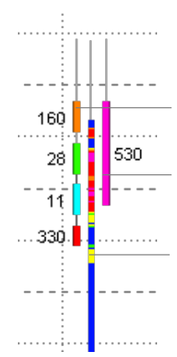


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ammonia Nitrogen Concentration

- >500 – 750 mg/L
- >250 – 500 mg/L
- >100 – 250 mg/L
- >50 – 100 mg/L
- >15 – 50 mg/L
- Non-Detect – 15 mg/L



HPT/VAP Sample– Sampled Interval and Value

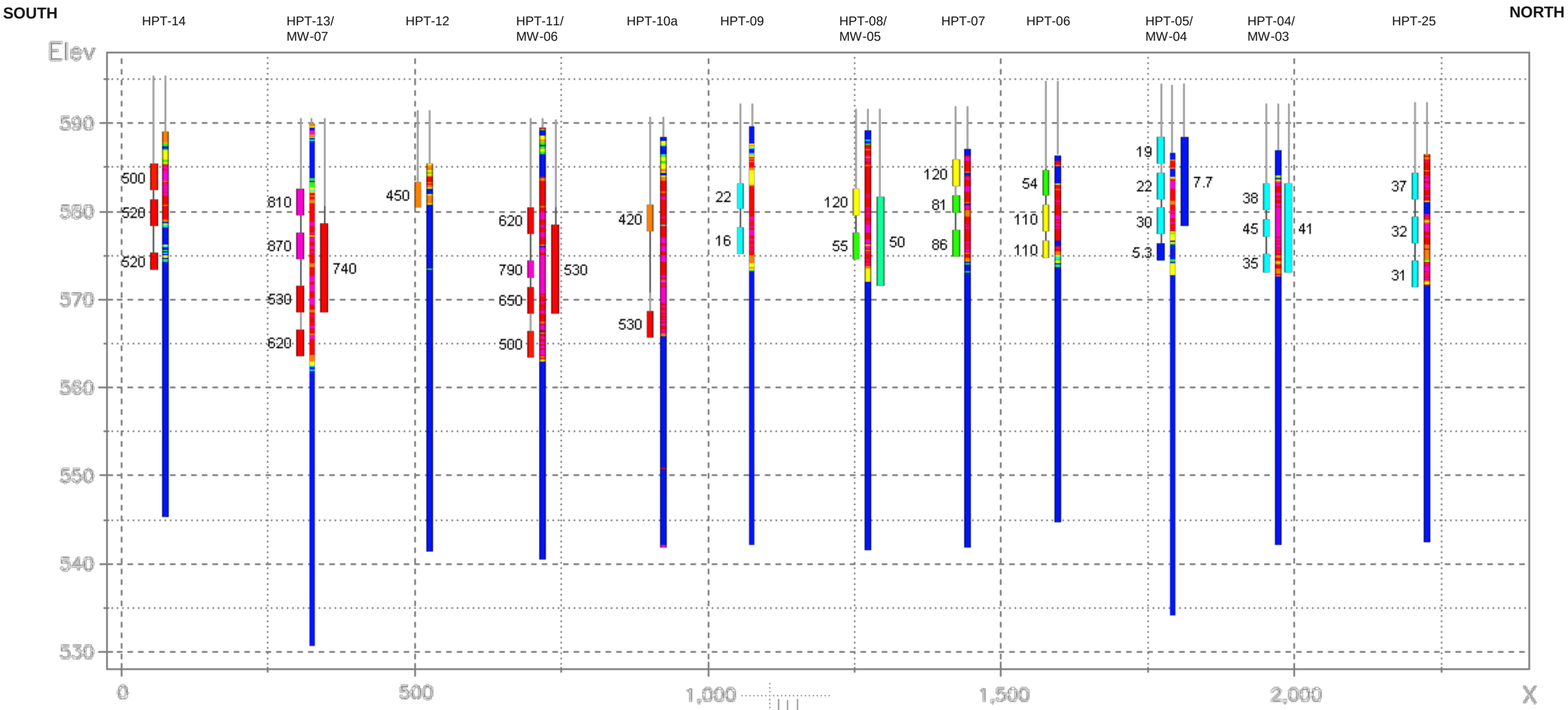
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Ammonia Nitrogen Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

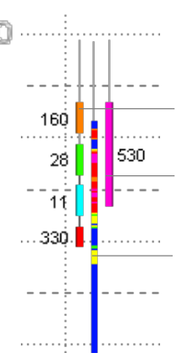


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ammonia Nitrogen Concentration

- >750 mg/L
- >500 – 750 mg/L
- >250 – 500 mg/L
- >100 – 250 mg/L
- >50 – 100 mg/L
- >15 – 50 mg/L
- Non-Detect – 15 mg/L



HPT/VAP Sample– Sampled Interval and Value

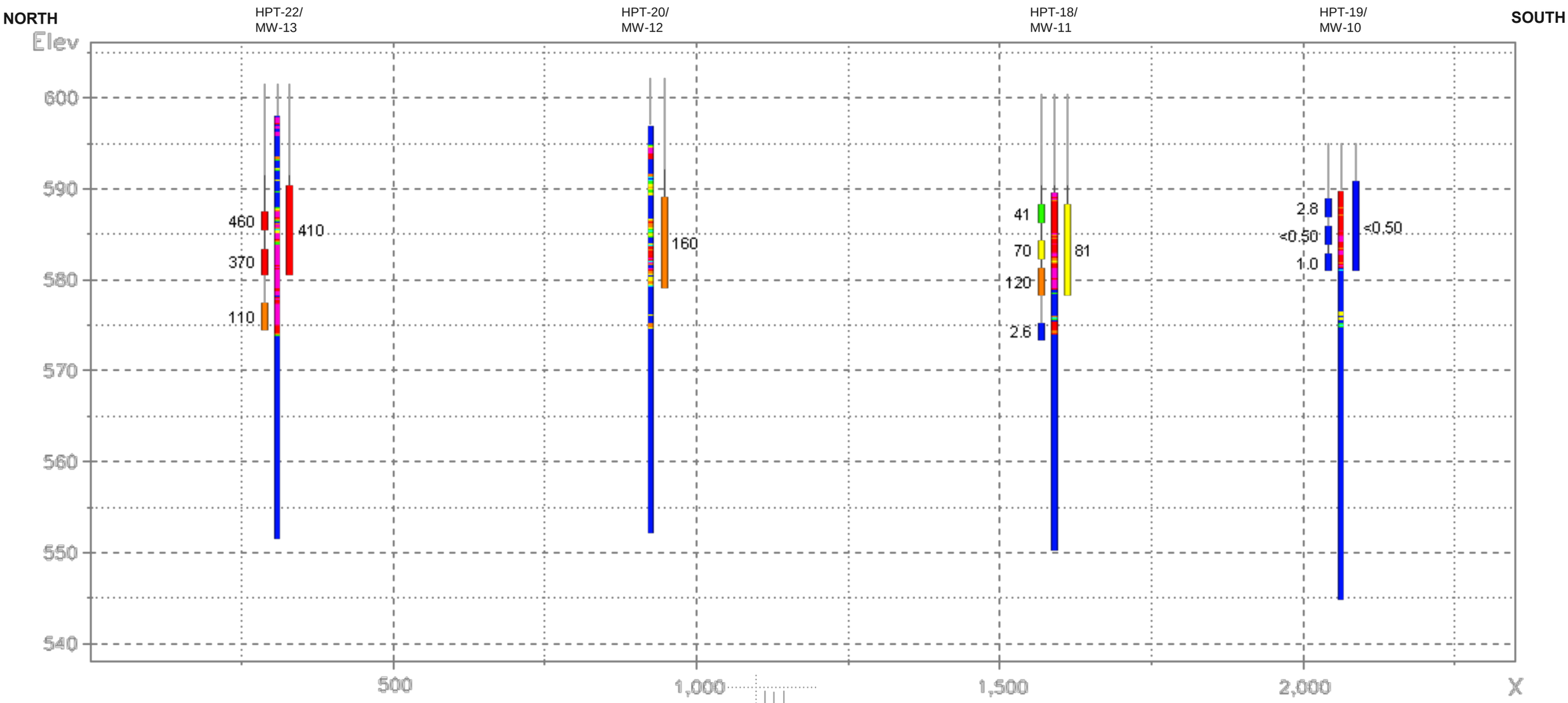
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Benzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

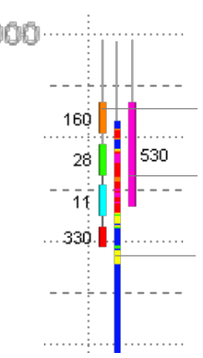


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Benzene Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

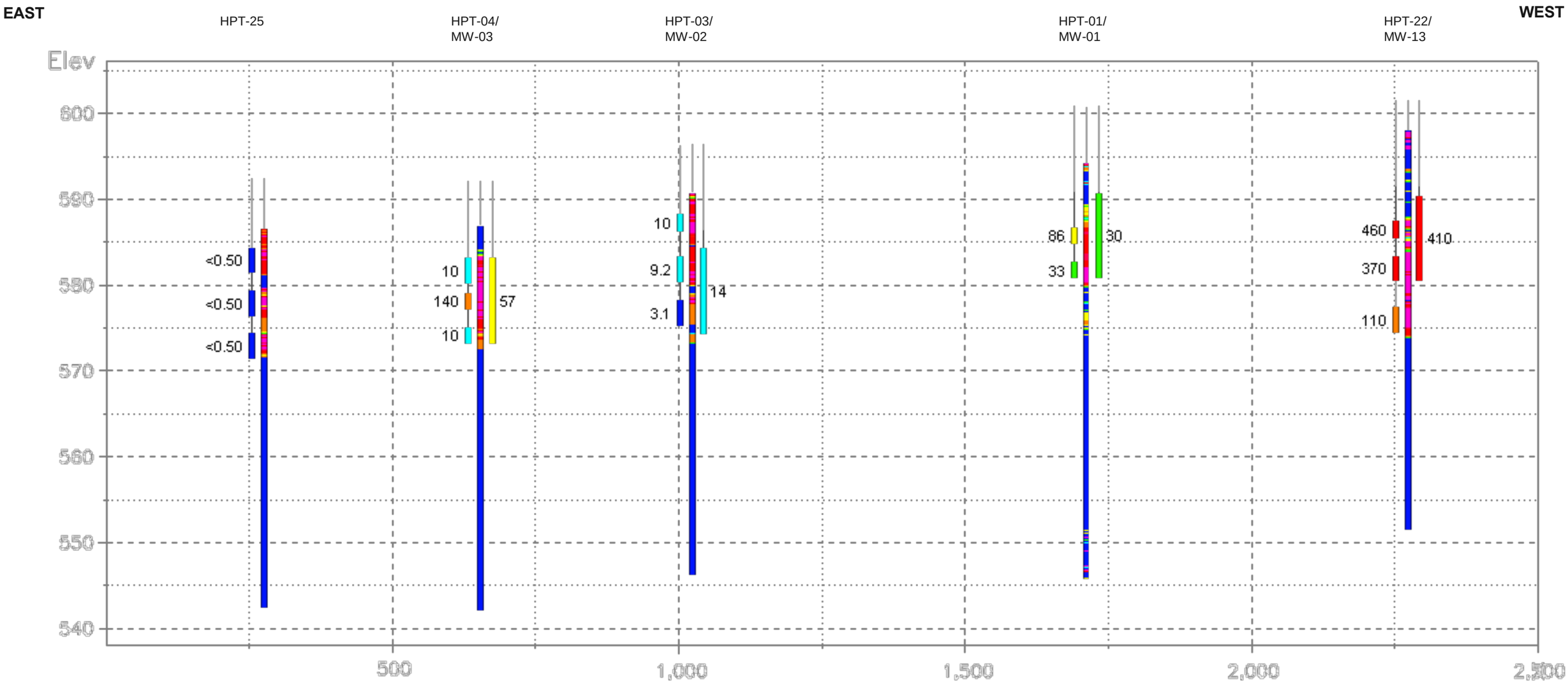
HPT Conductivity Data

NOTES:

1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Benzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

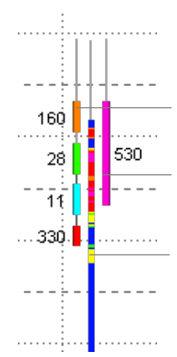


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Benzene Concentration

- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

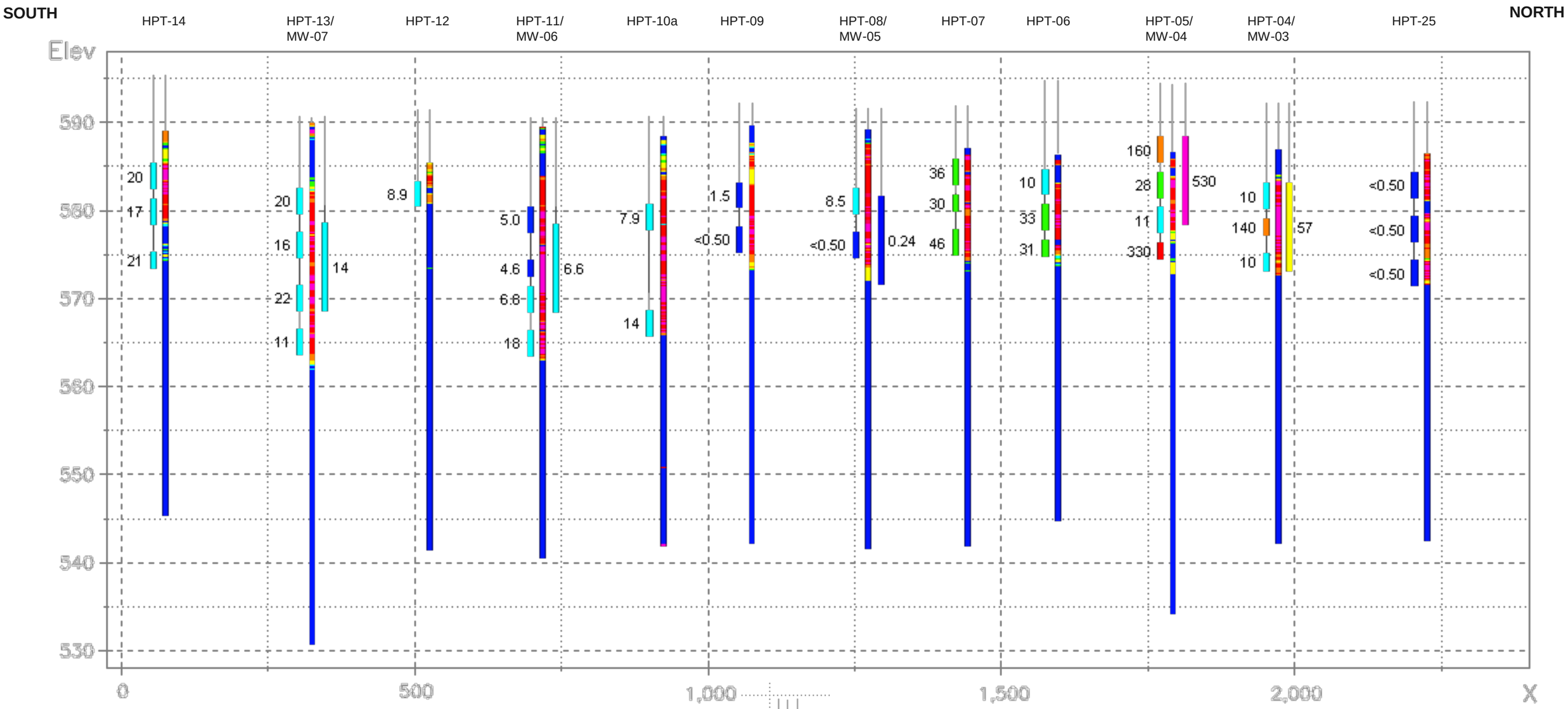
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Benzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

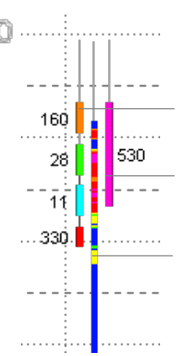


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Benzene Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

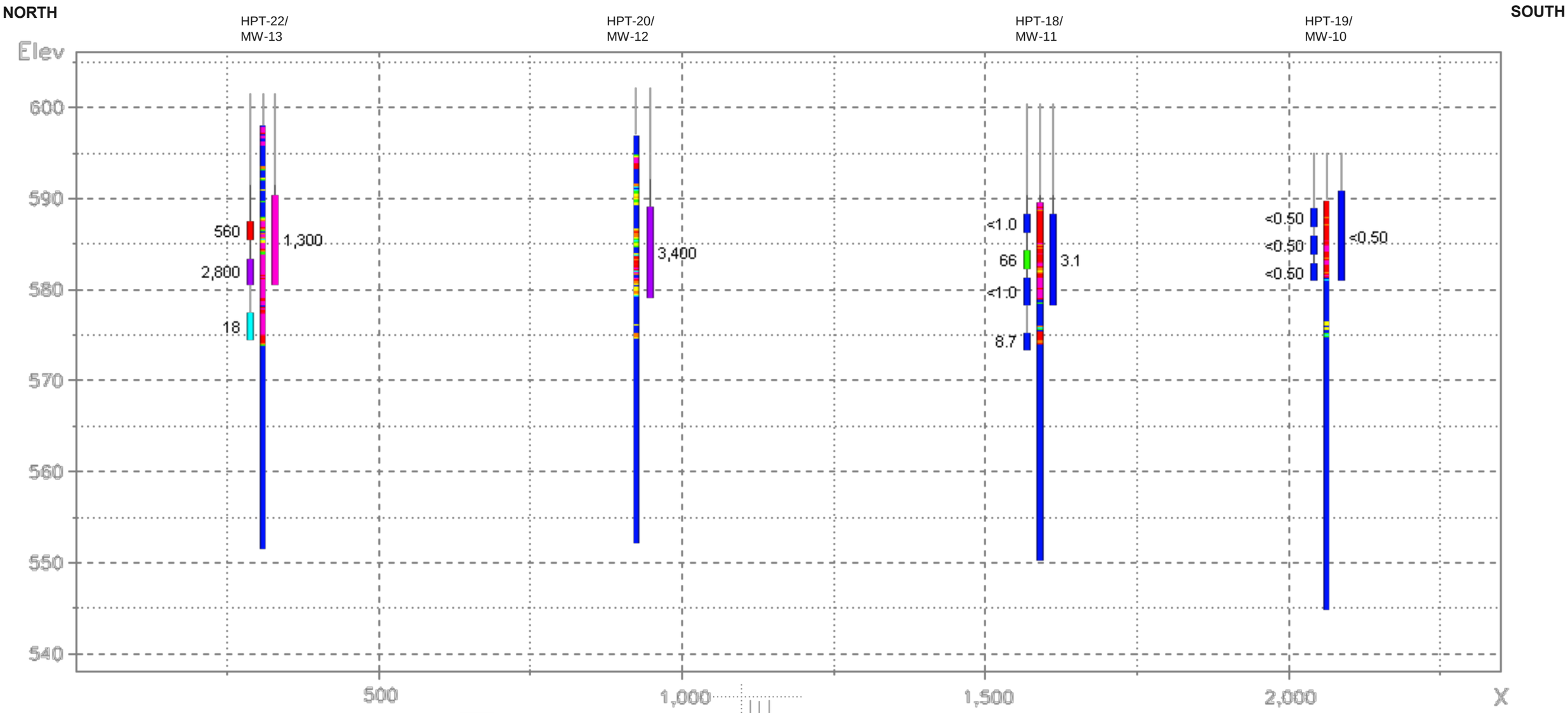
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Ethylbenzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

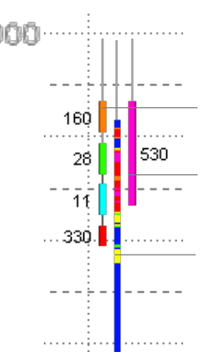


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ethylbenzene Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

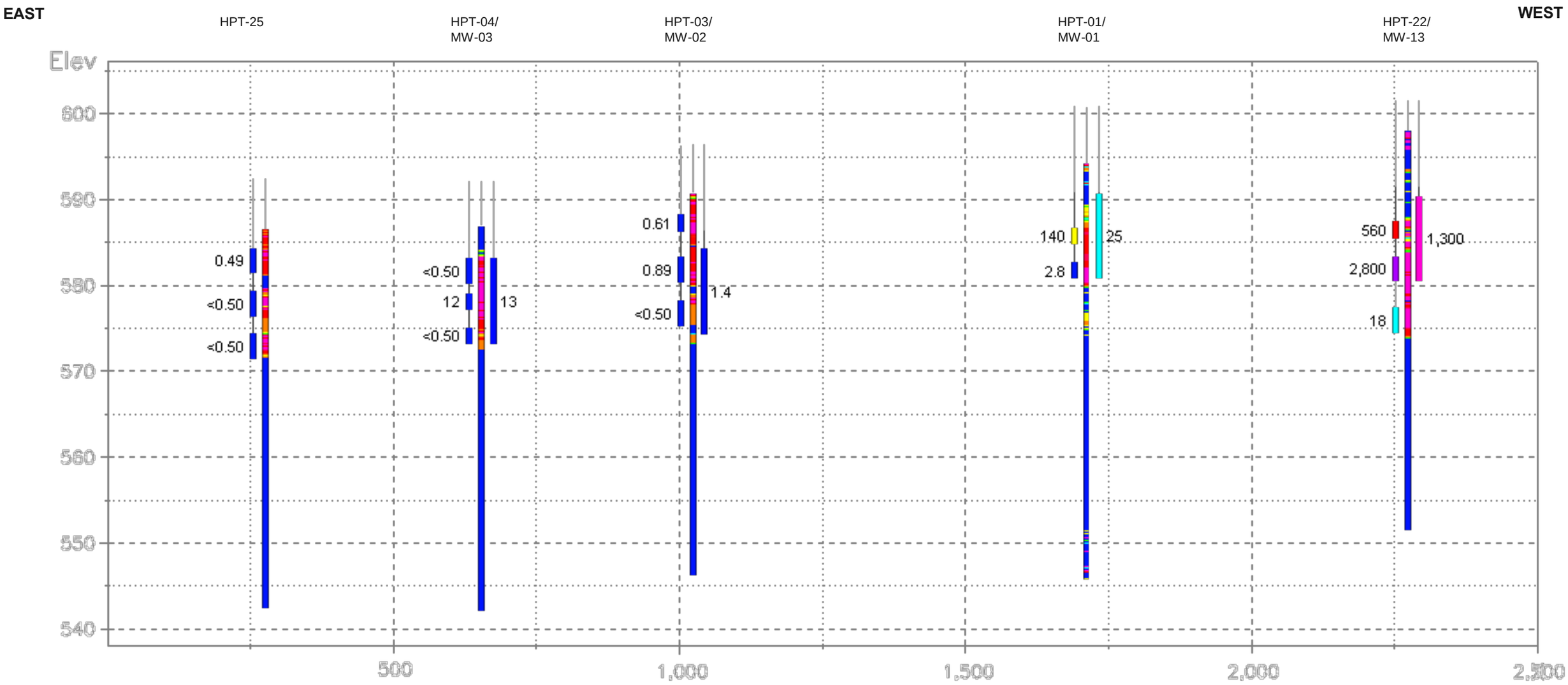
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Ethylbenzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

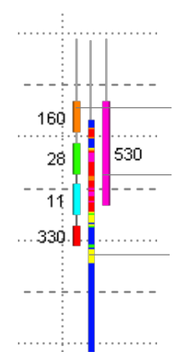


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ethylbenzene Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

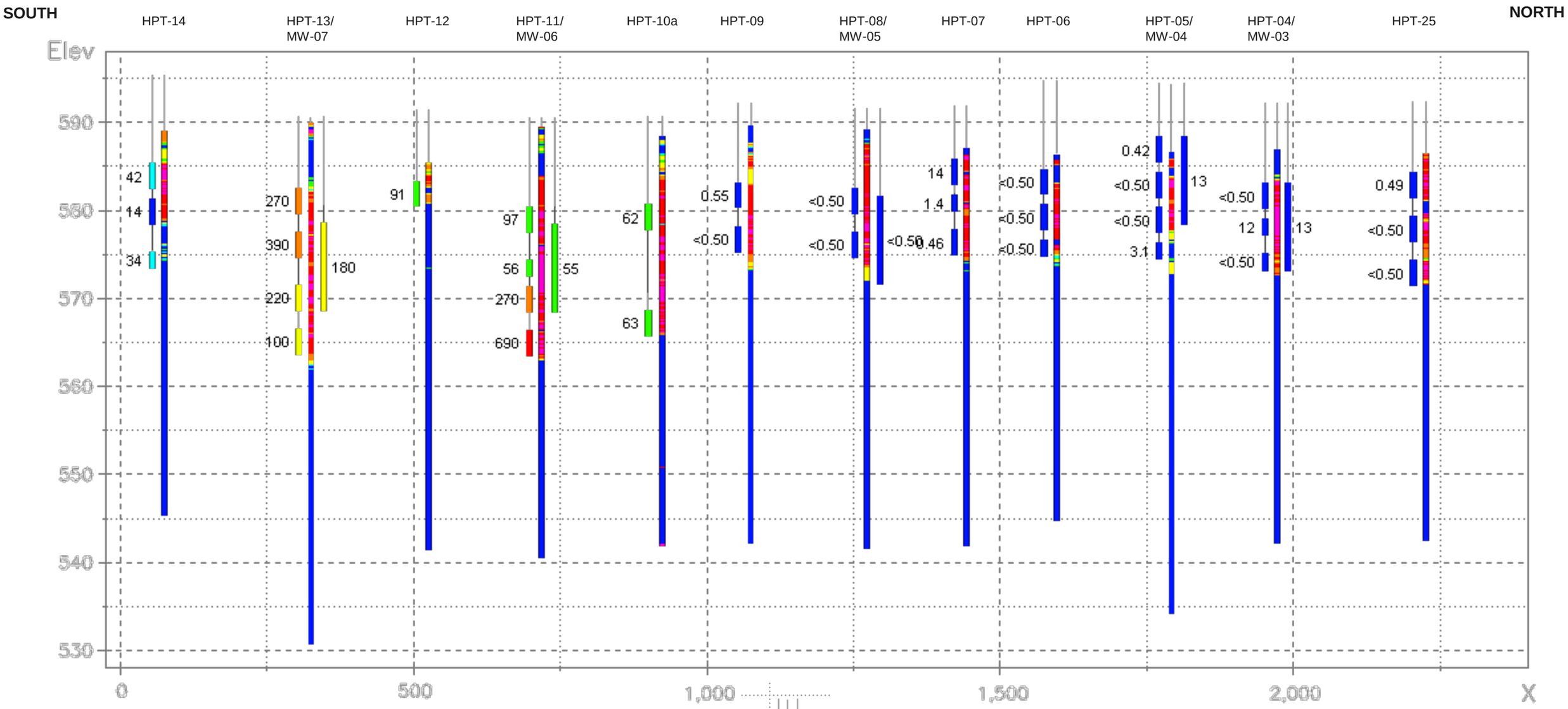
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Ethylbenzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

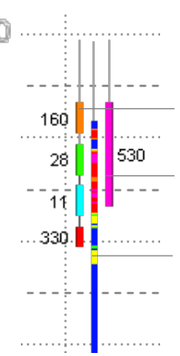


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ethylbenzene Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

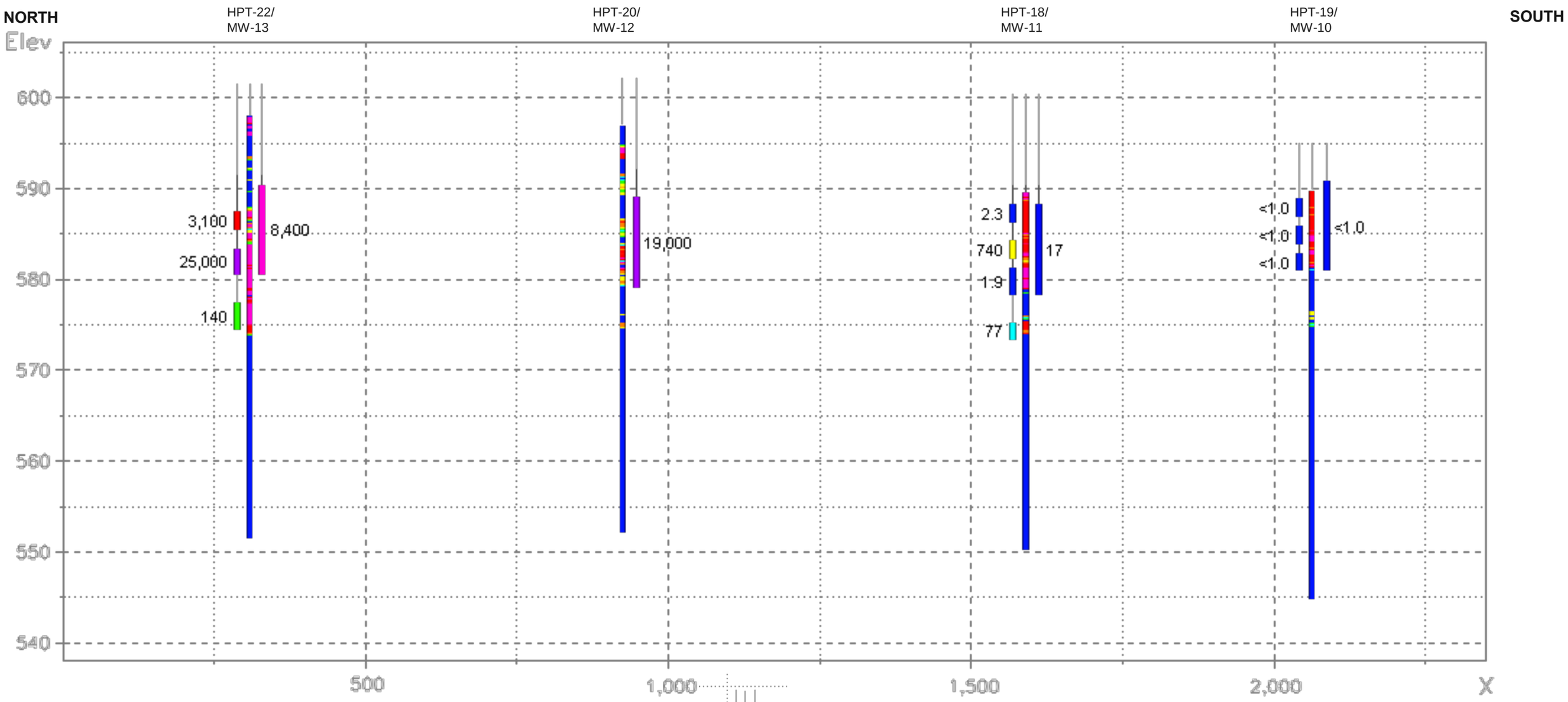
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Total Xylenes Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

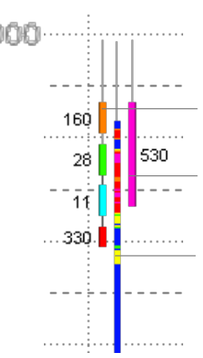


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Xylenes Concentration

- >10,000 ug/L
- >5,000 – 10,000 ug/L
- >1,500 – 5,000 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

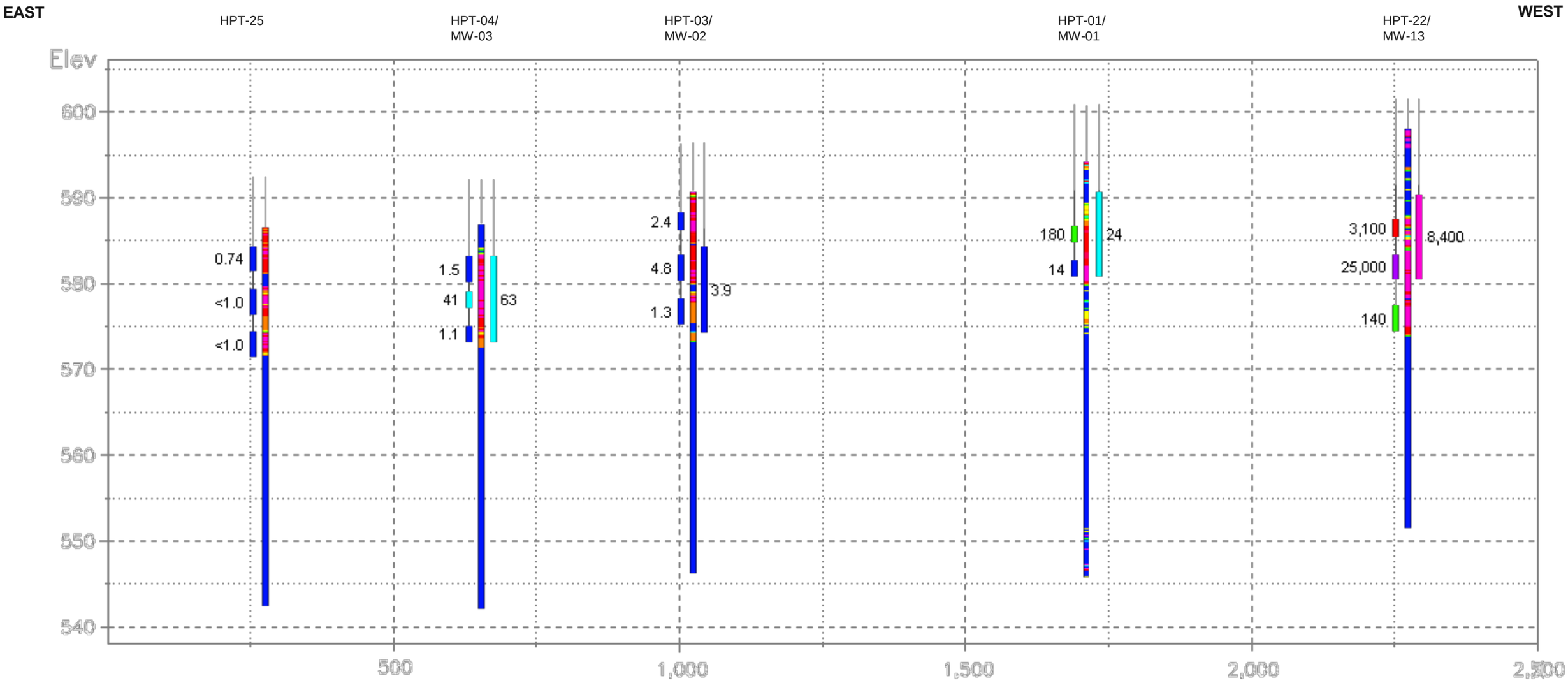
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Total Xylenes Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

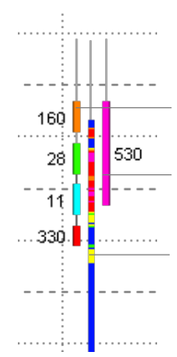


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Xylenes Concentration

- >10.000 ug/L
- >5,000 – 10.000 ug/L
- >1,500 – 5,000 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

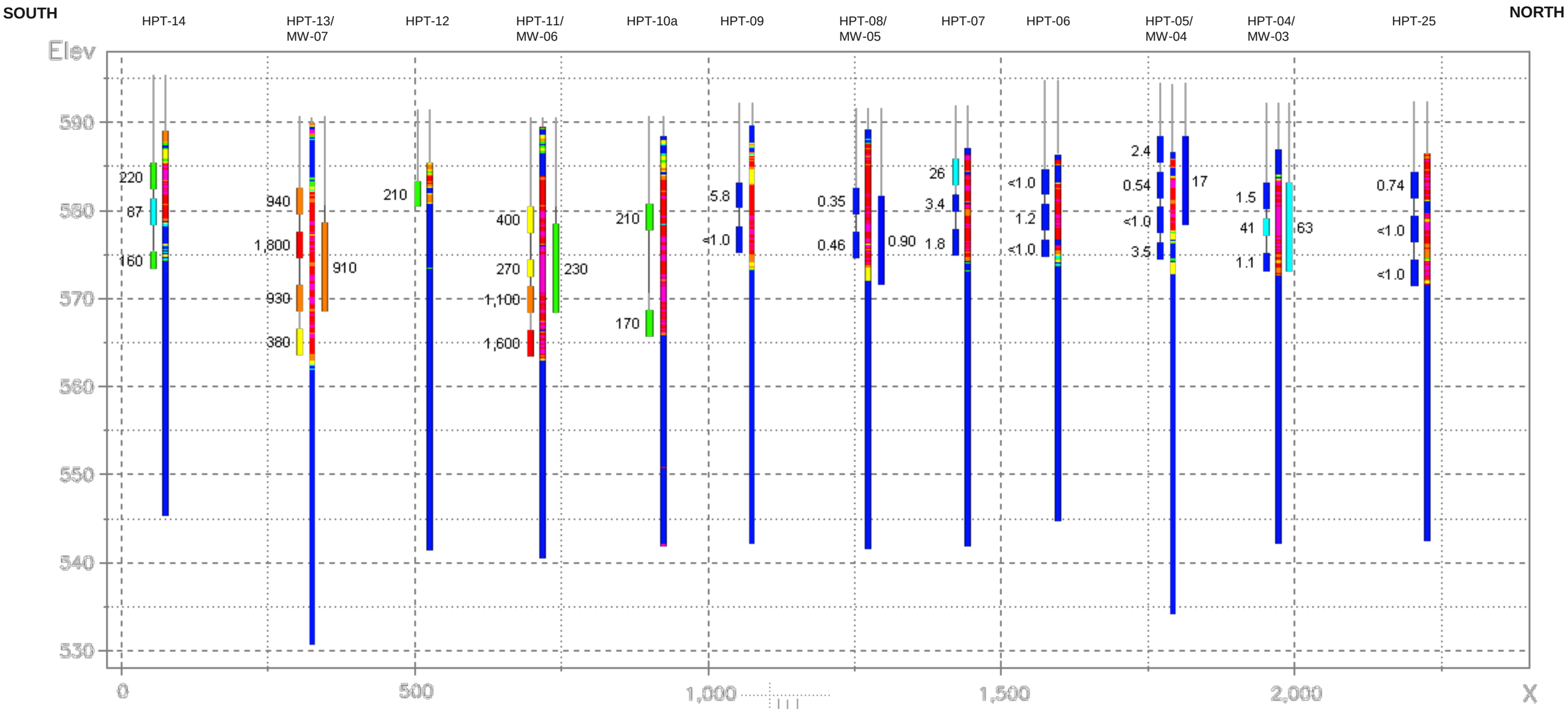
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Total Xylenes Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

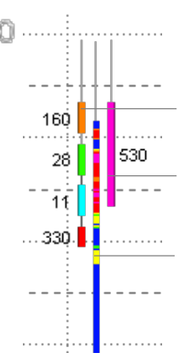


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Xylenes Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

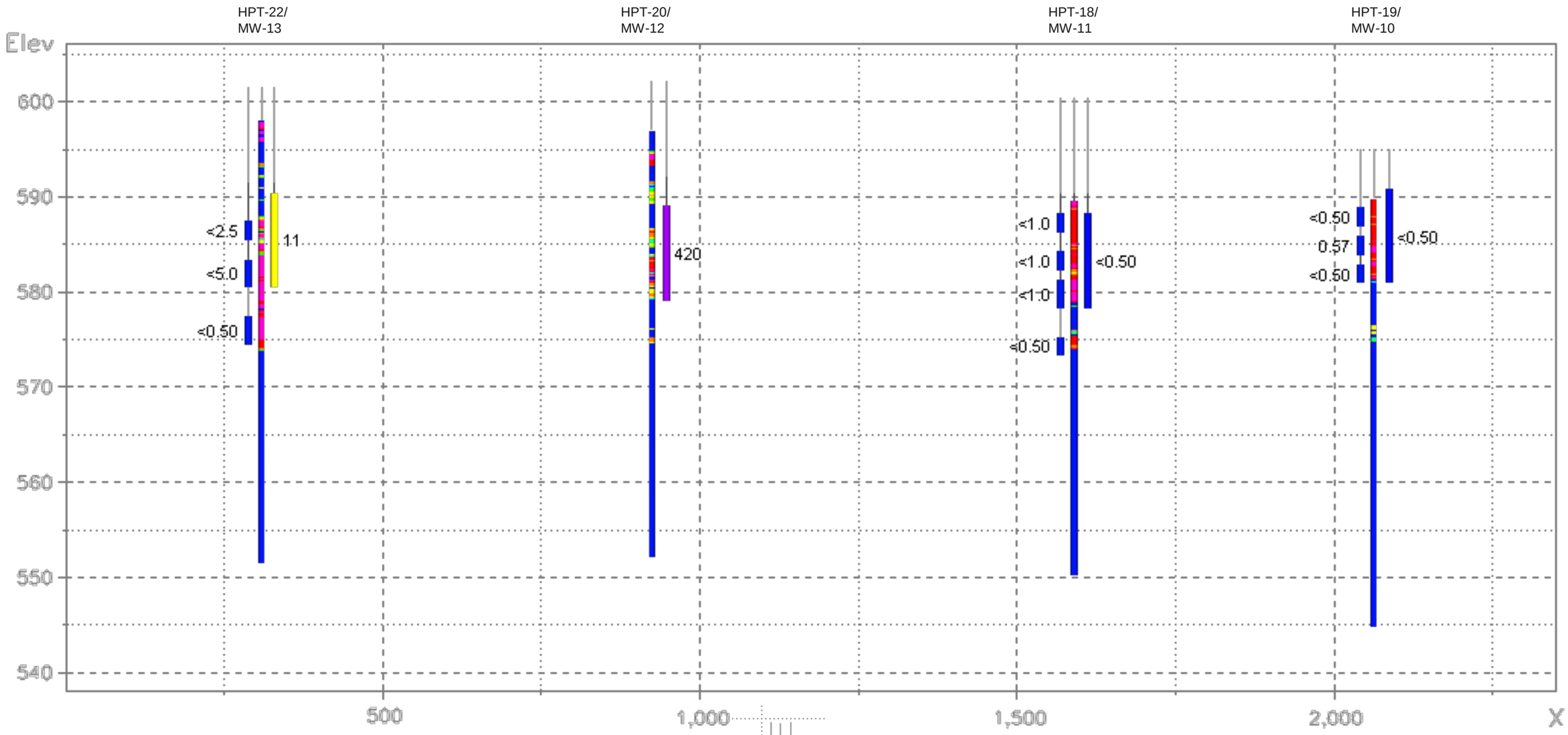
HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Vinyl Chloride Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

NORTH **SOUTH**

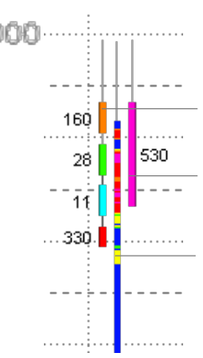


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Vinyl Chloride Concentration

- >100 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

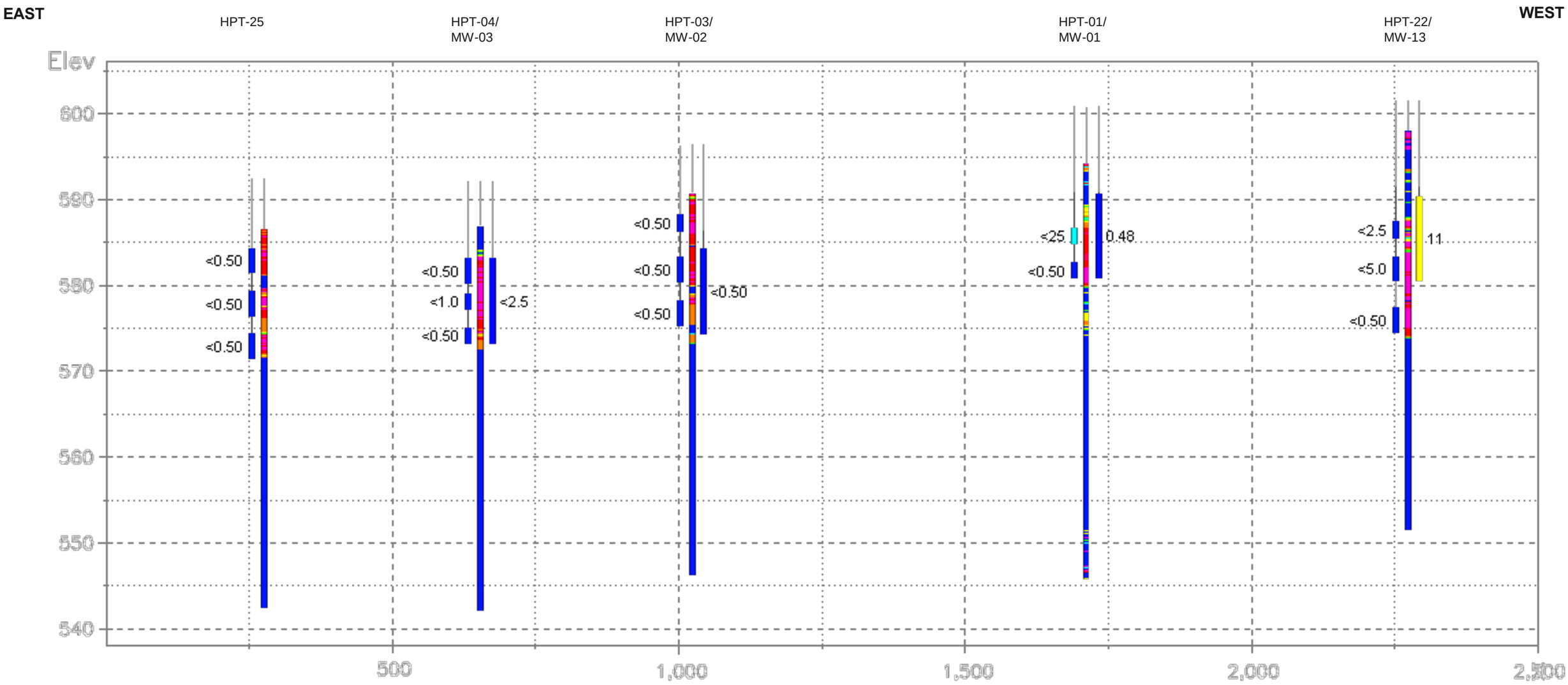
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Vinyl Chloride Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

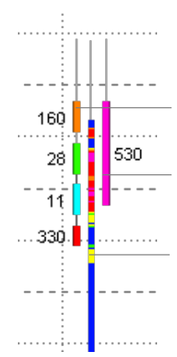


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Vinyl Chloride Concentration

- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

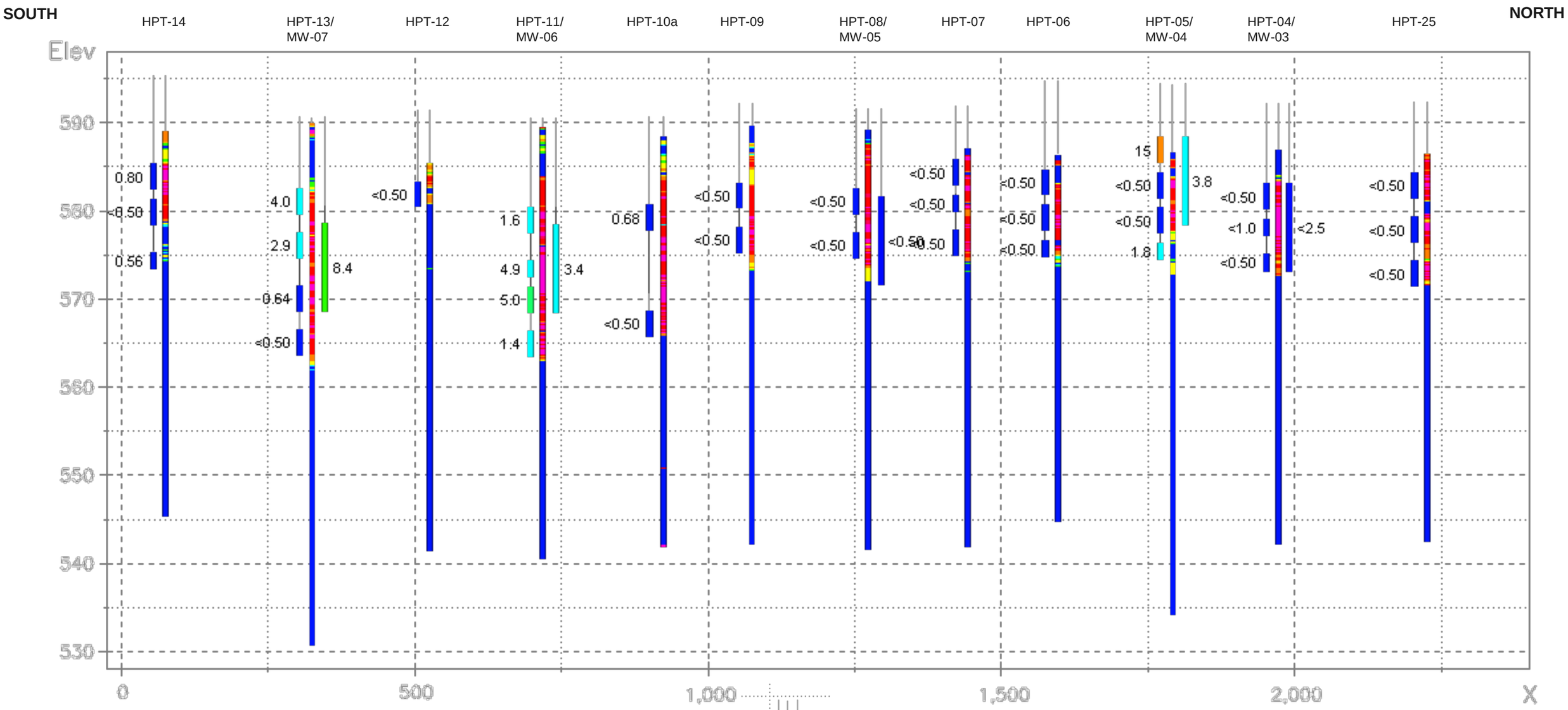
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Vinyl Chloride Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

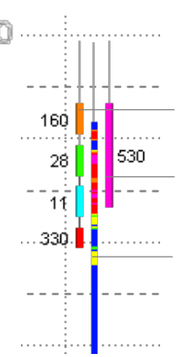


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Vinyl Chloride Concentration

- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

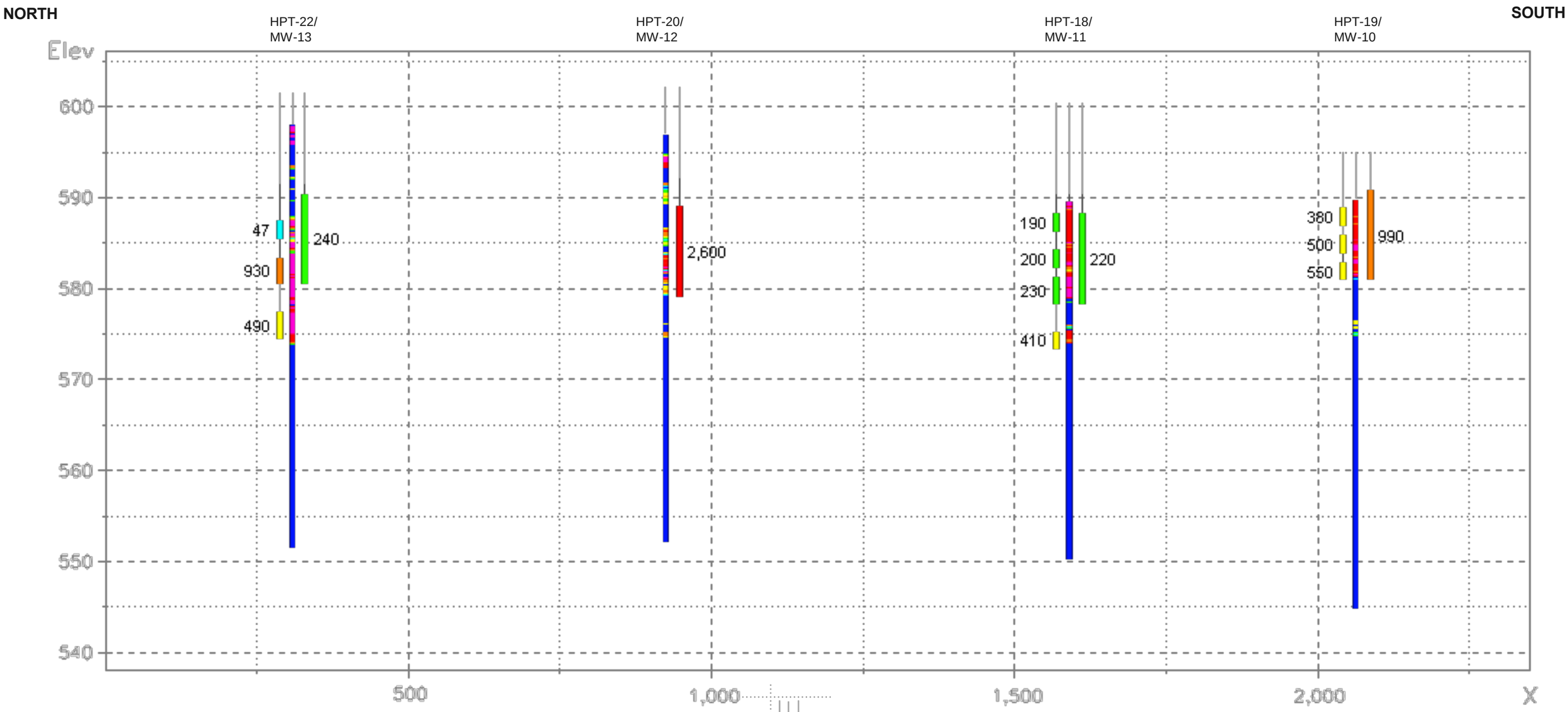
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Manganese Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

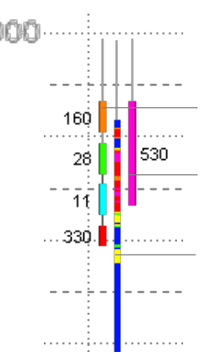


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Manganese Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

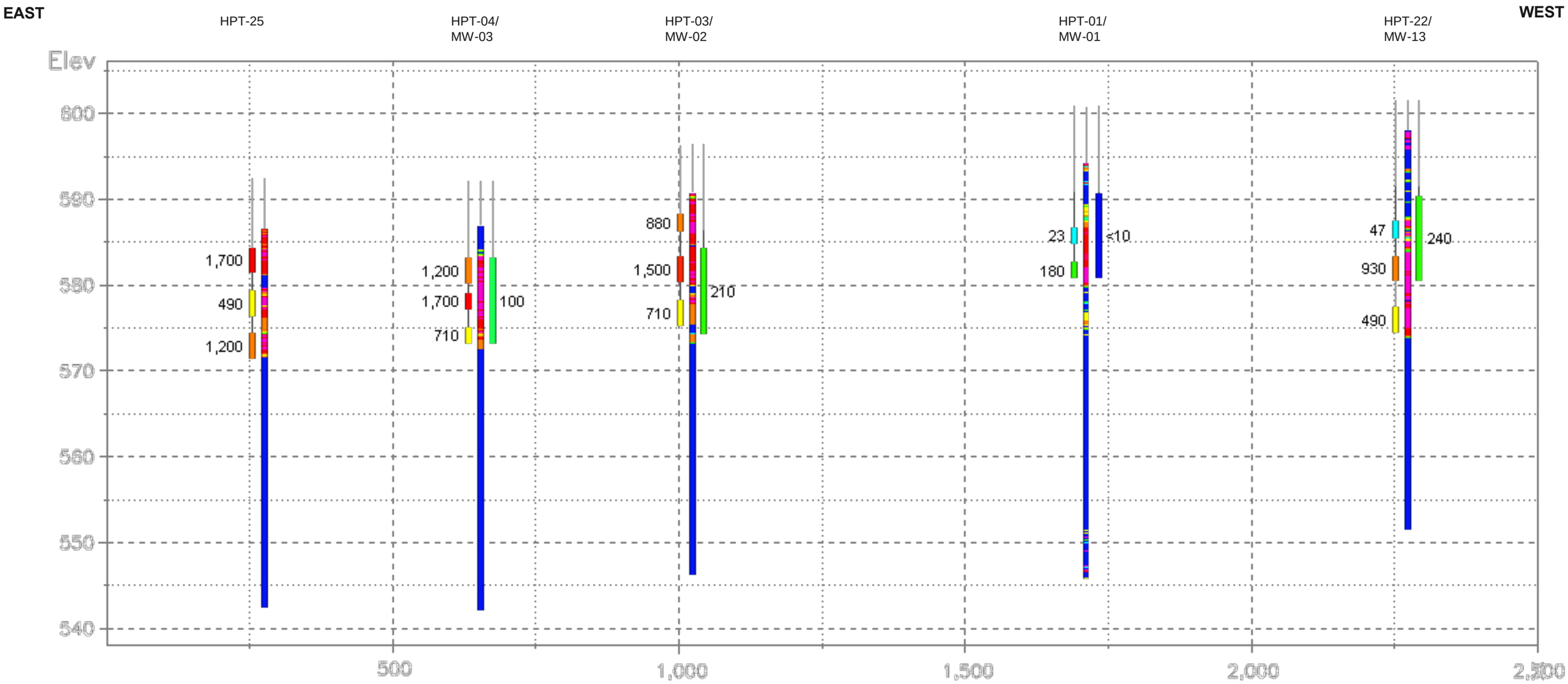
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Manganese Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

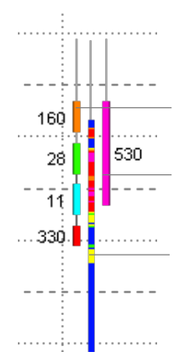


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Manganese Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

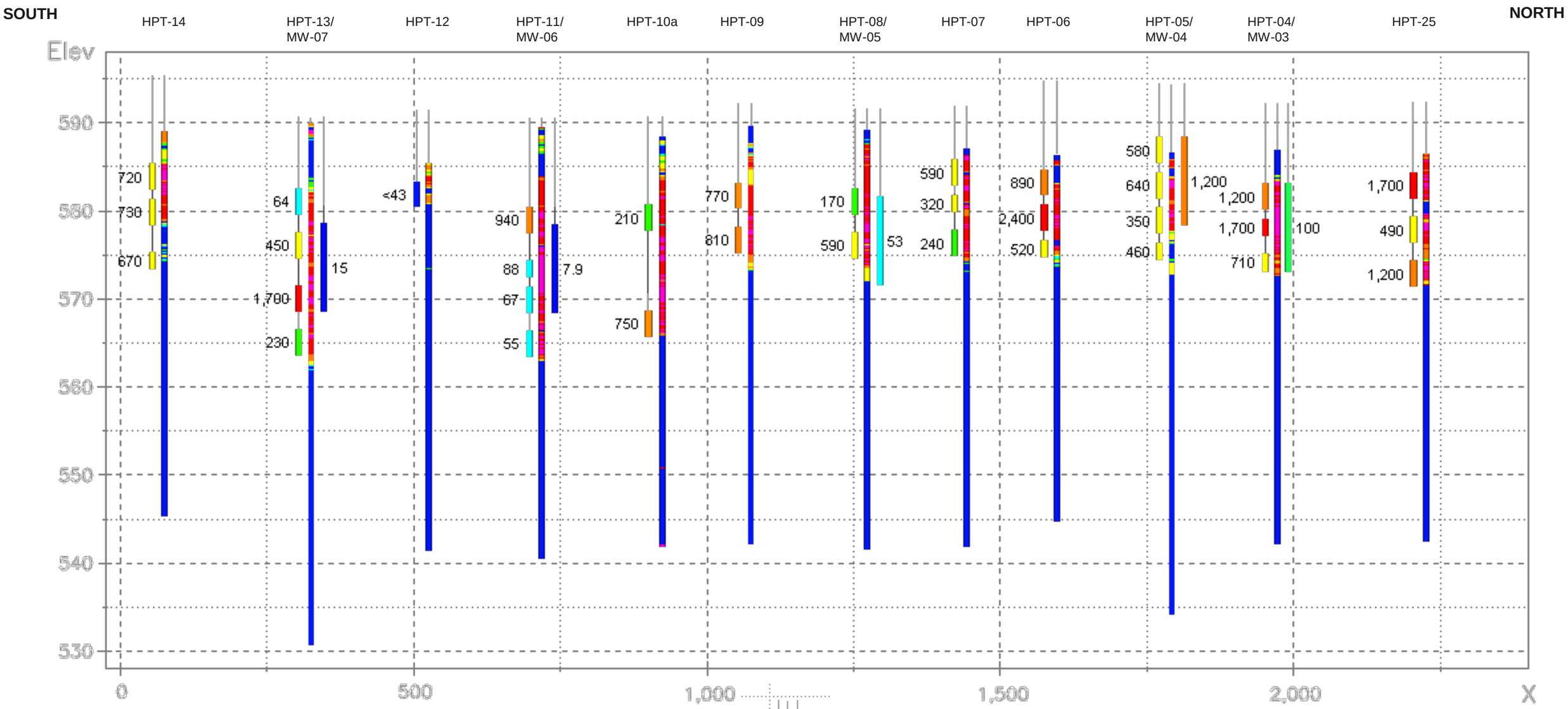
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Manganese Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

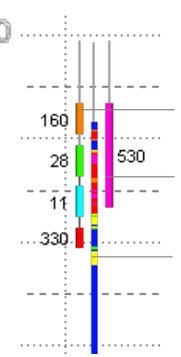


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Manganese Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

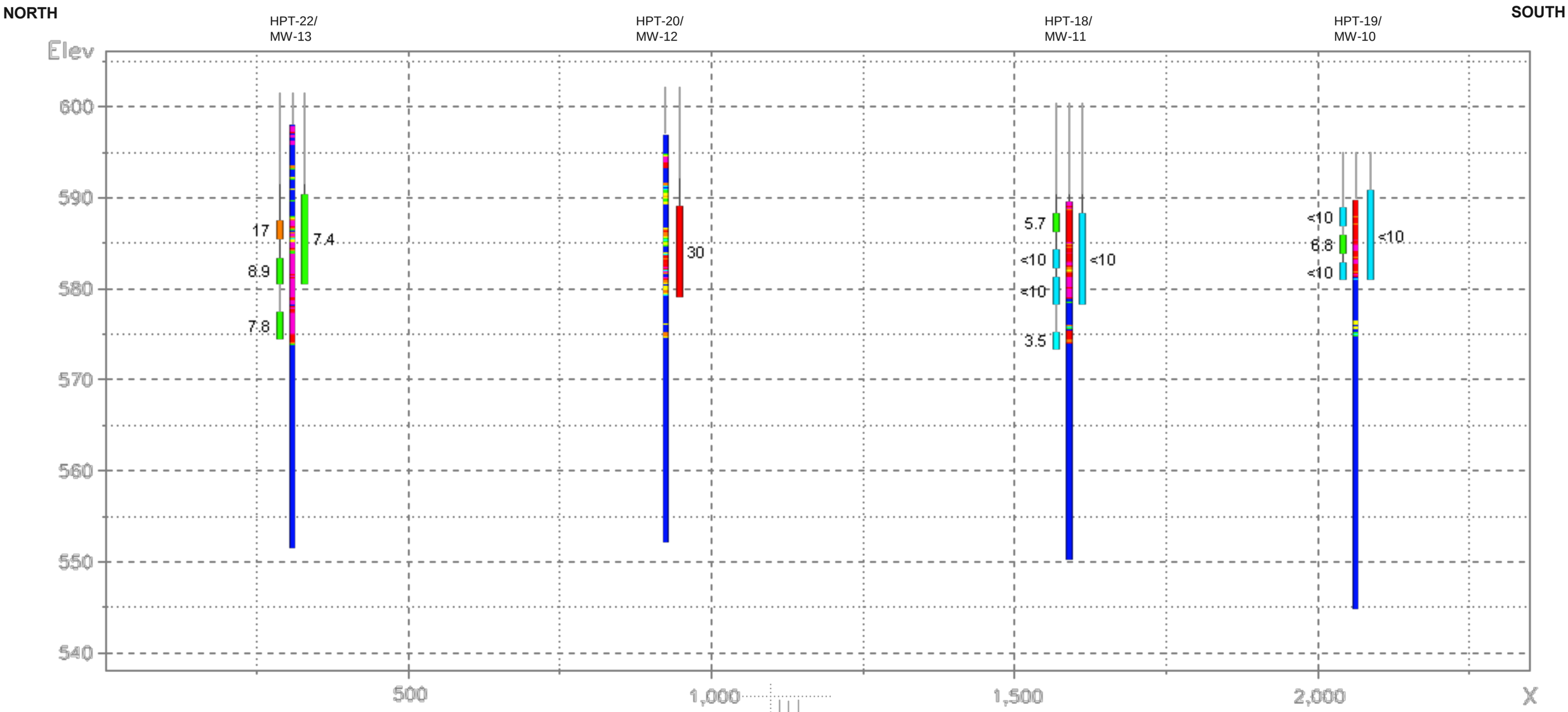
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Arsenic Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

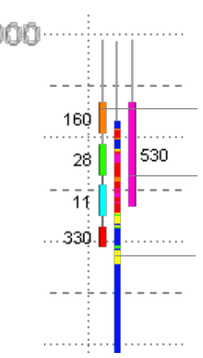


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Arsenic Concentration

- >25 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

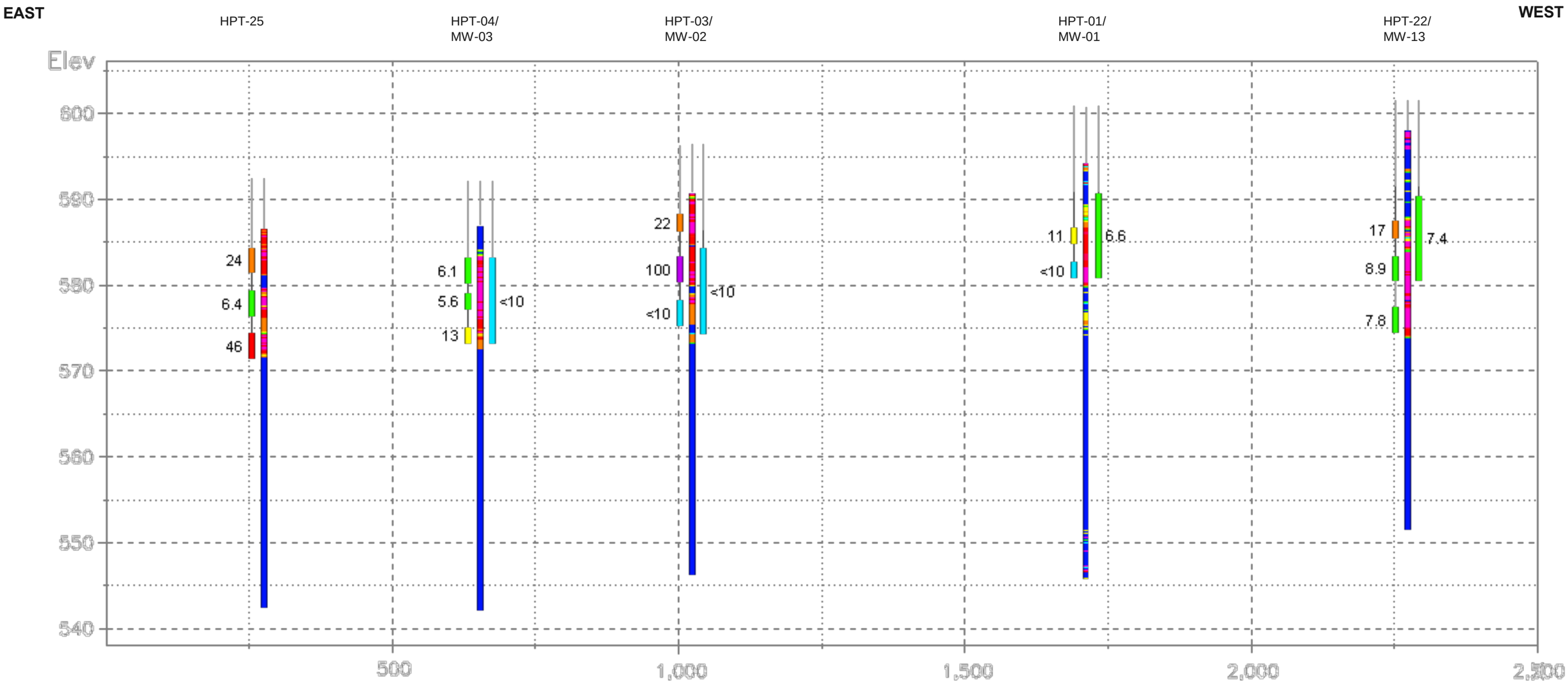
HPT Conductivity Data

NOTES:

1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Arsenic Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

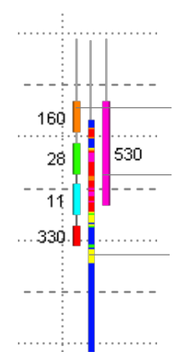


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Arsenic Concentration

- >100 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

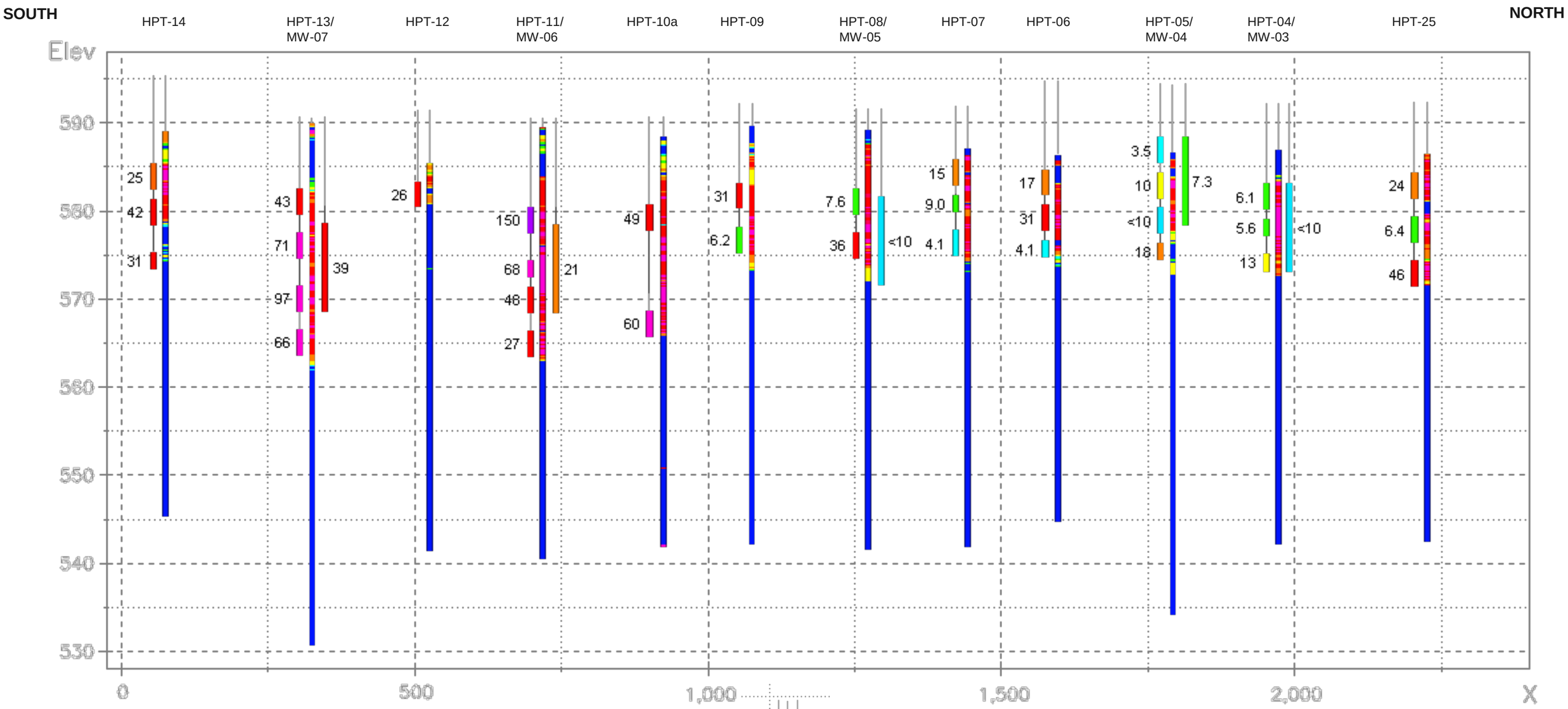
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Arsenic Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

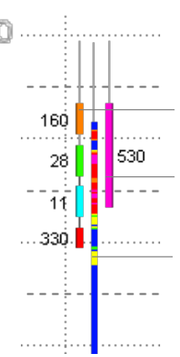


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Arsenic Concentration

- >100 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

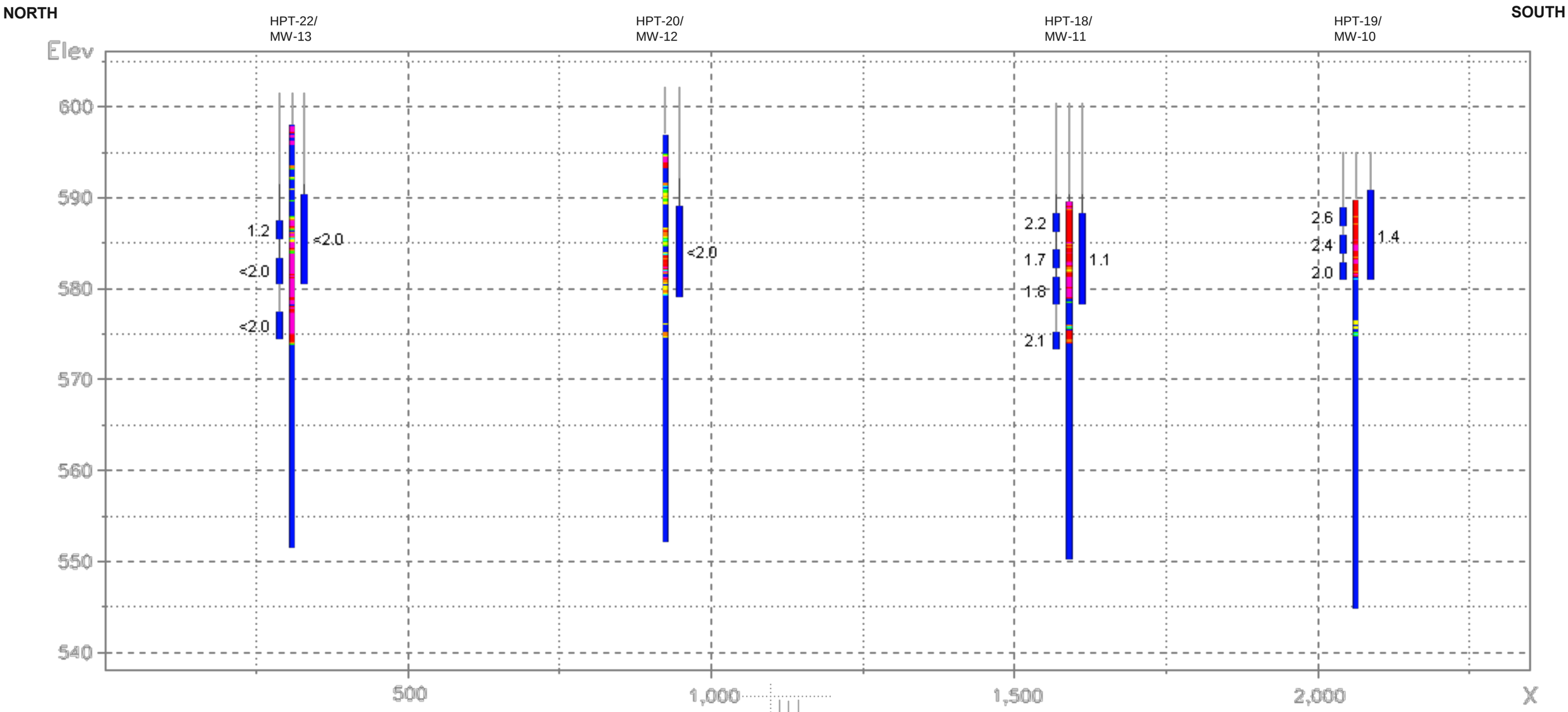
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Cadmium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

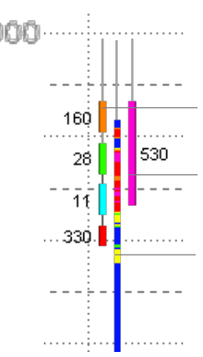


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Cadmium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

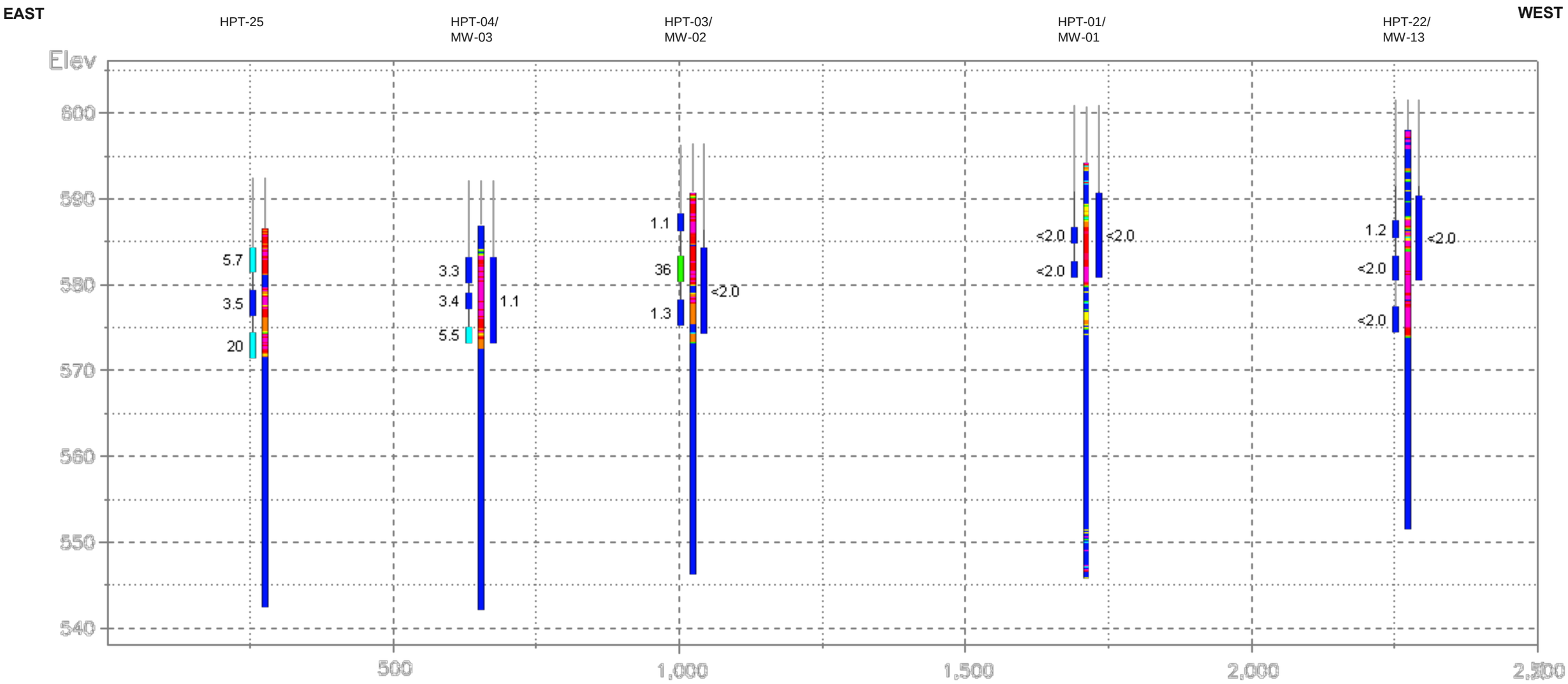
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Cadmium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

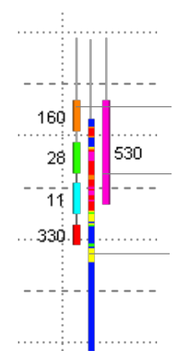


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Cadmium Concentration

- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

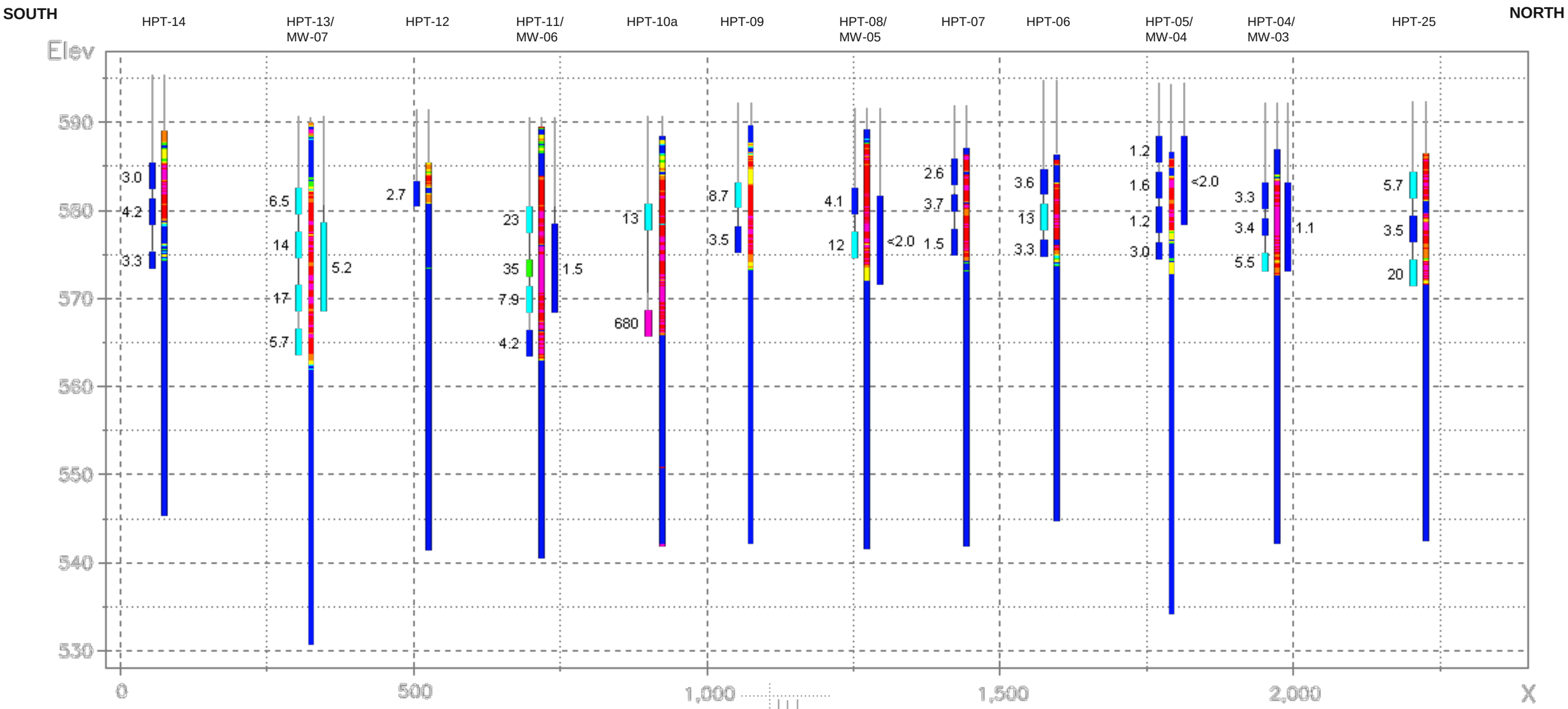
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Cadmium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

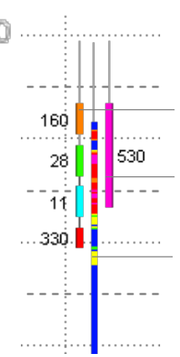


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Cadmium Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

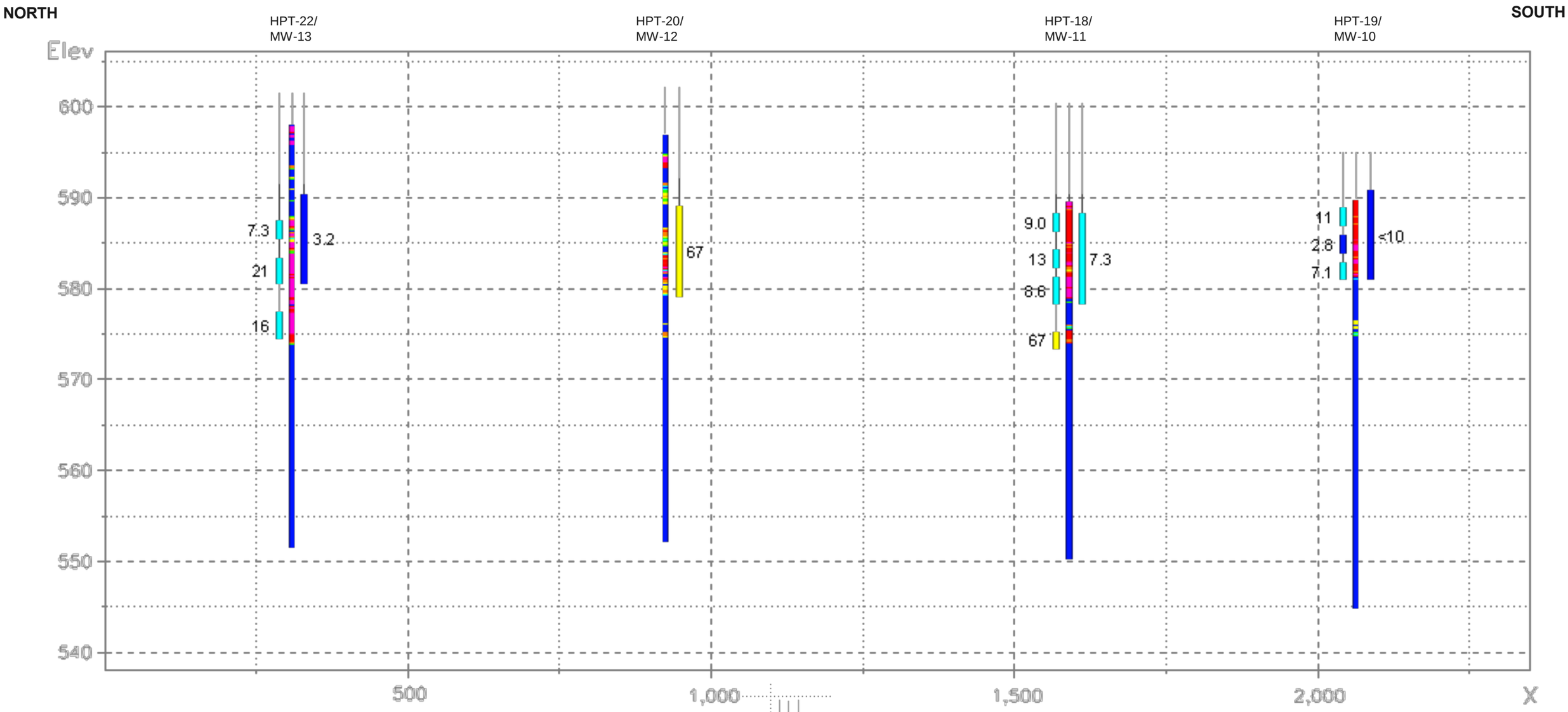
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Chromium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

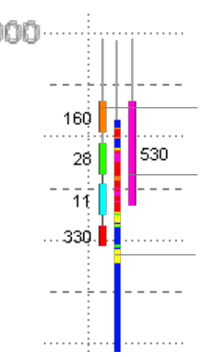


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Chromium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
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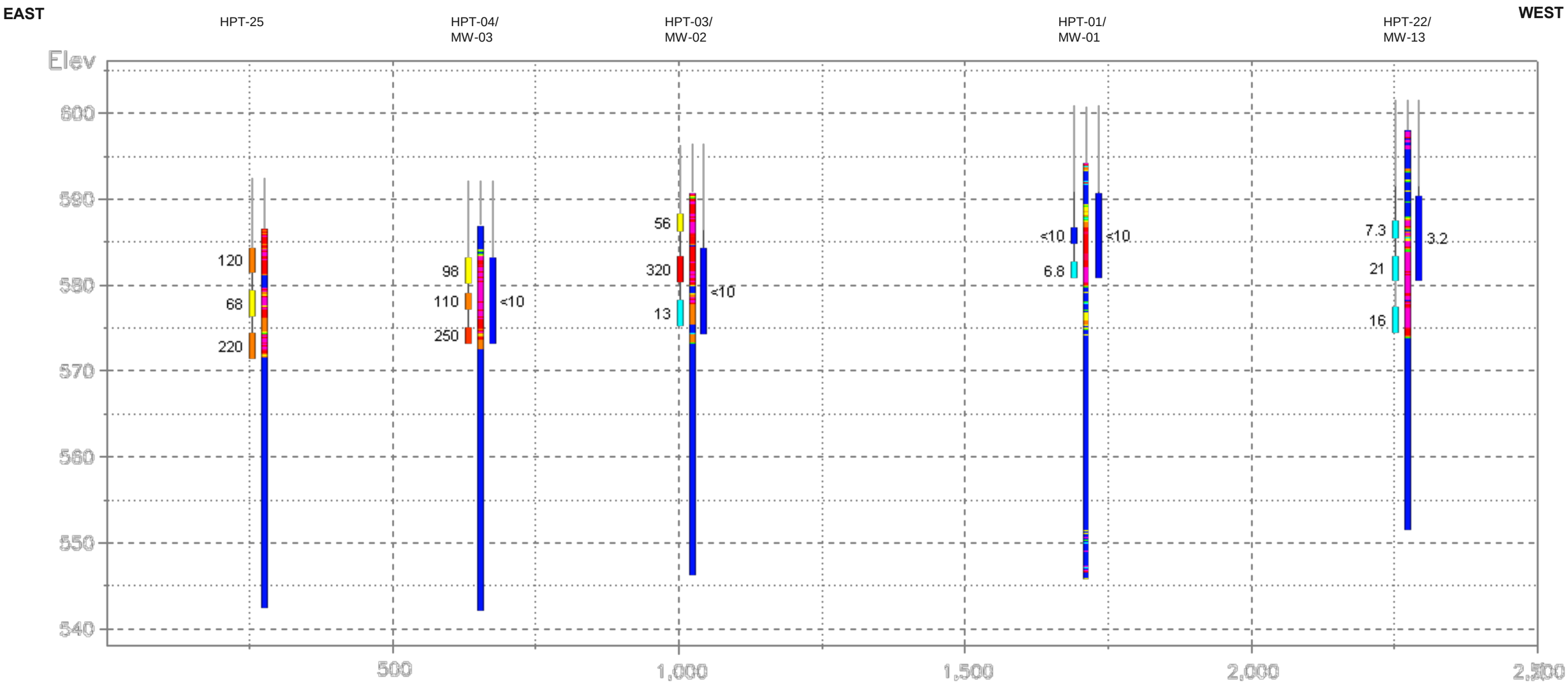
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Chromium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

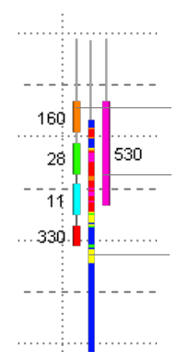


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Chromium Concentration

- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

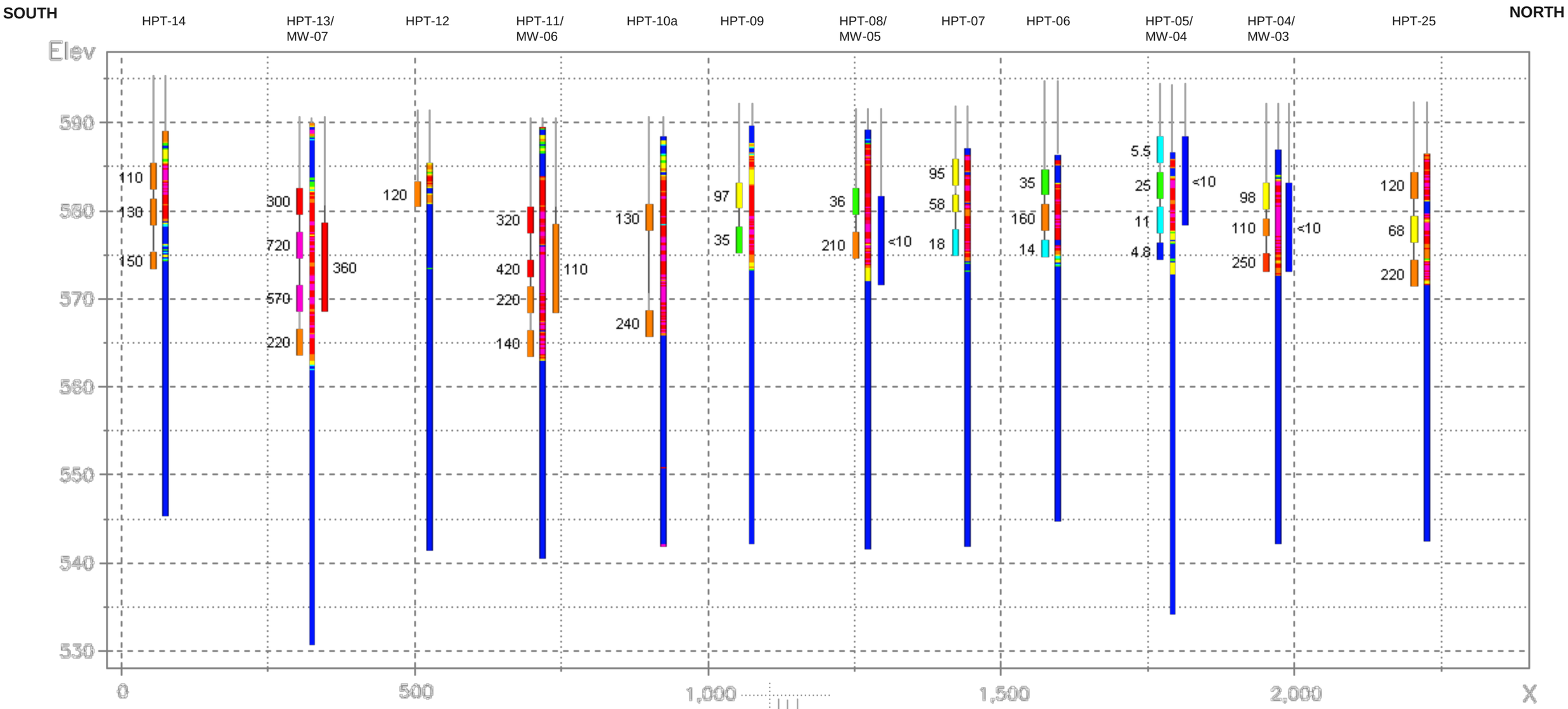
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Chromium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

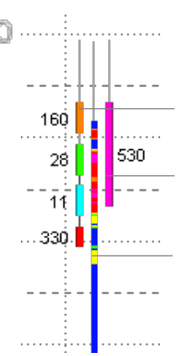


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Chromium Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

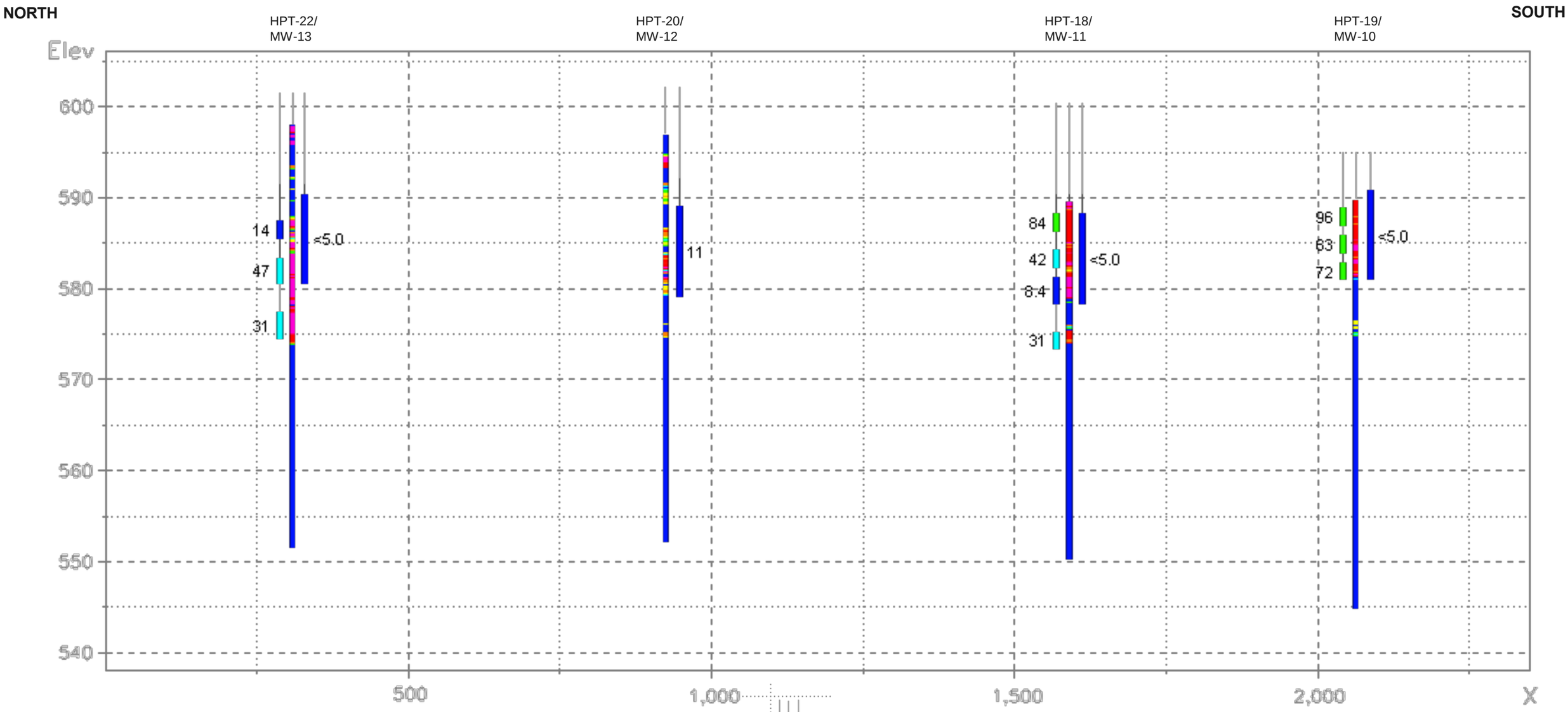
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Lead Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

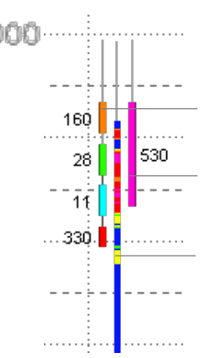


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Lead Concentration

- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
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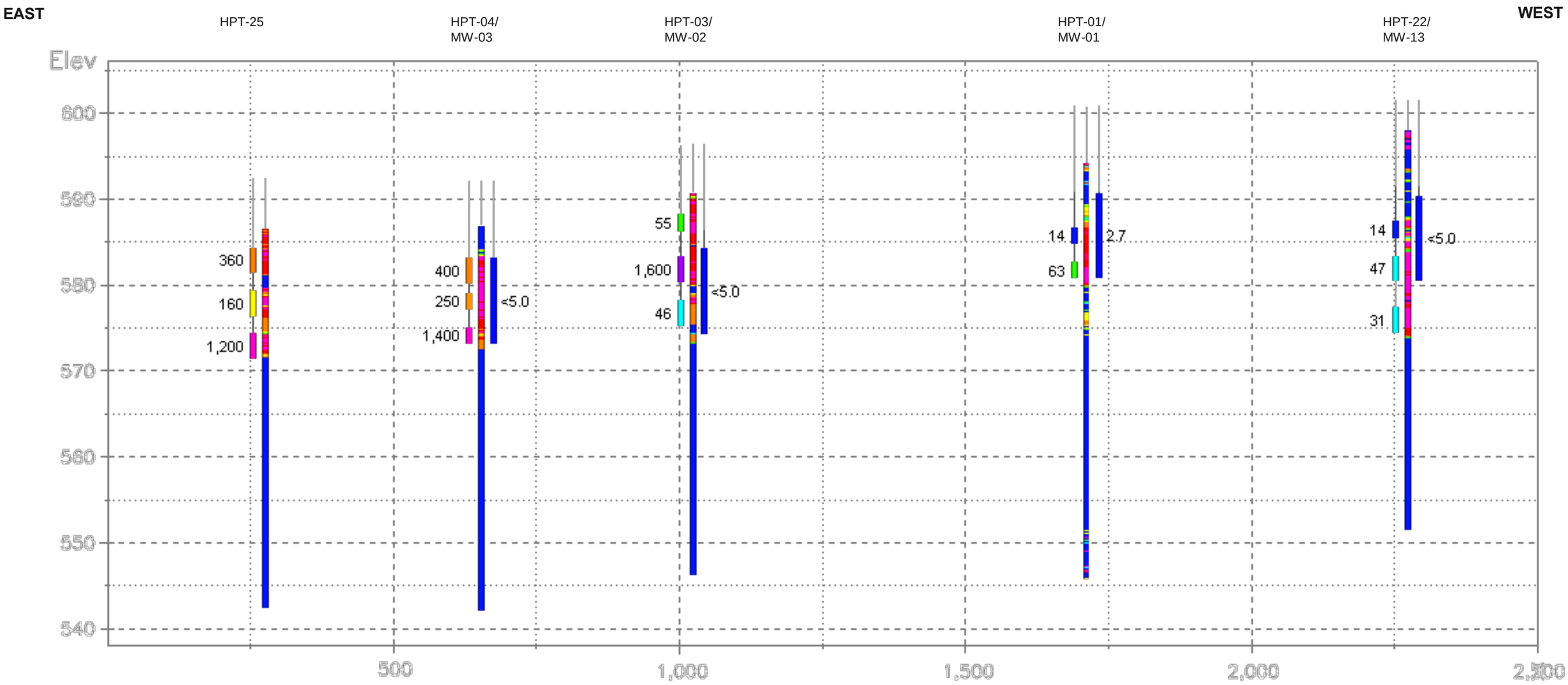
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Lead Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

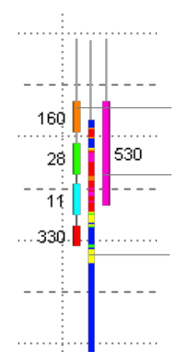


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Lead Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

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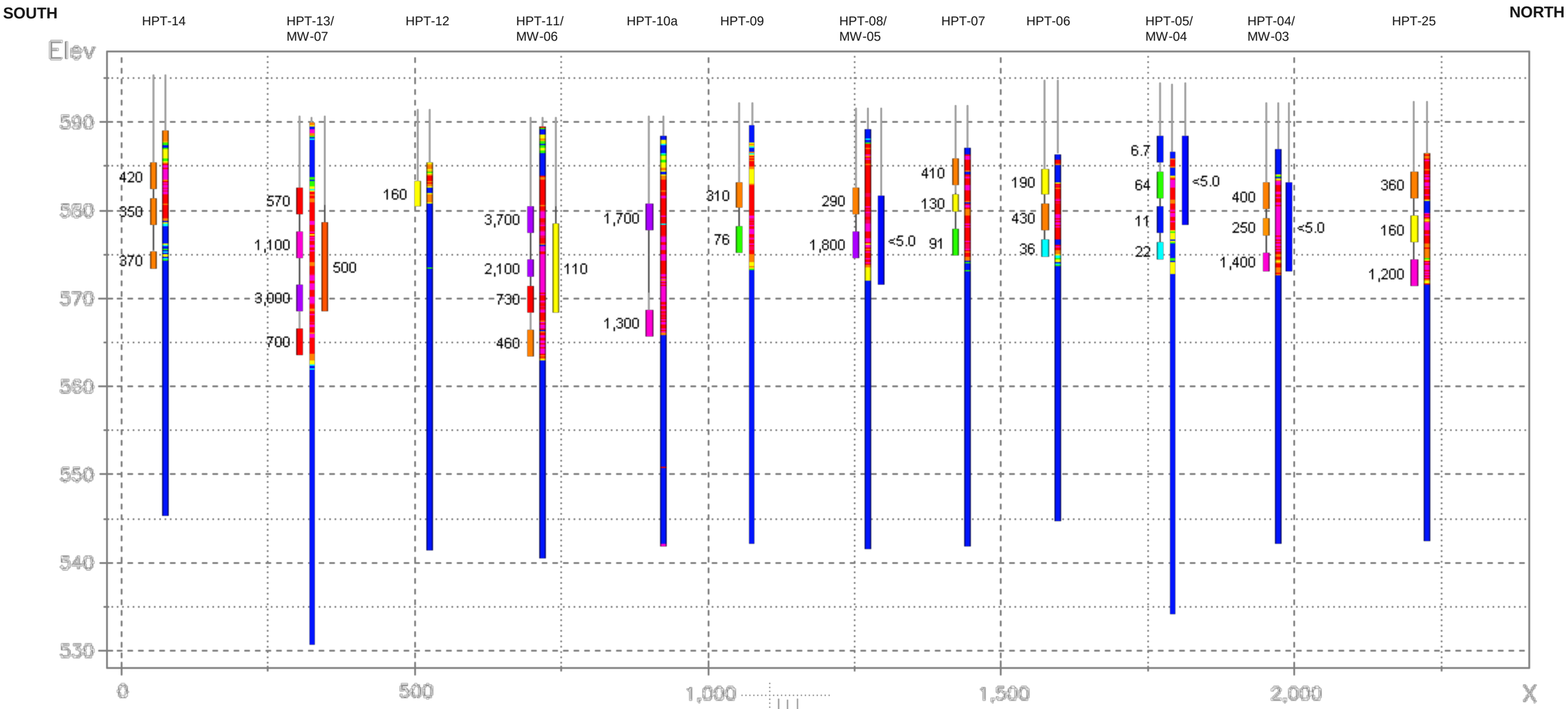
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Lead Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

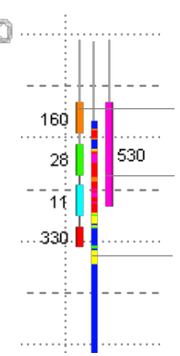


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Lead Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

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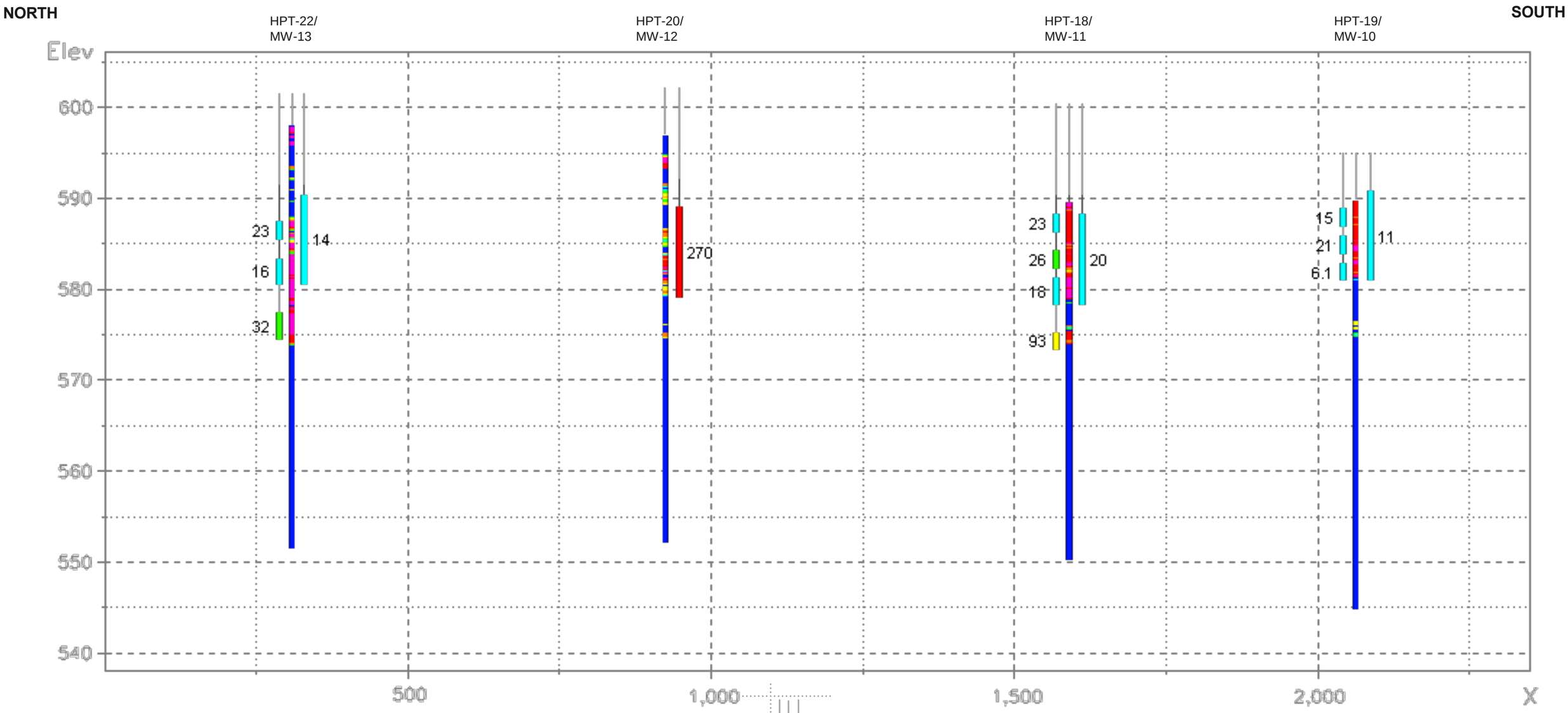
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Nickel Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

ARCADIS Design & Consultancy for natural and built assets

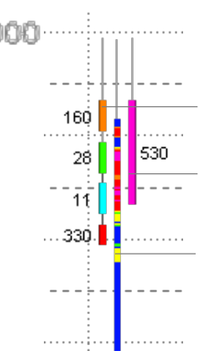


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Nickel Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
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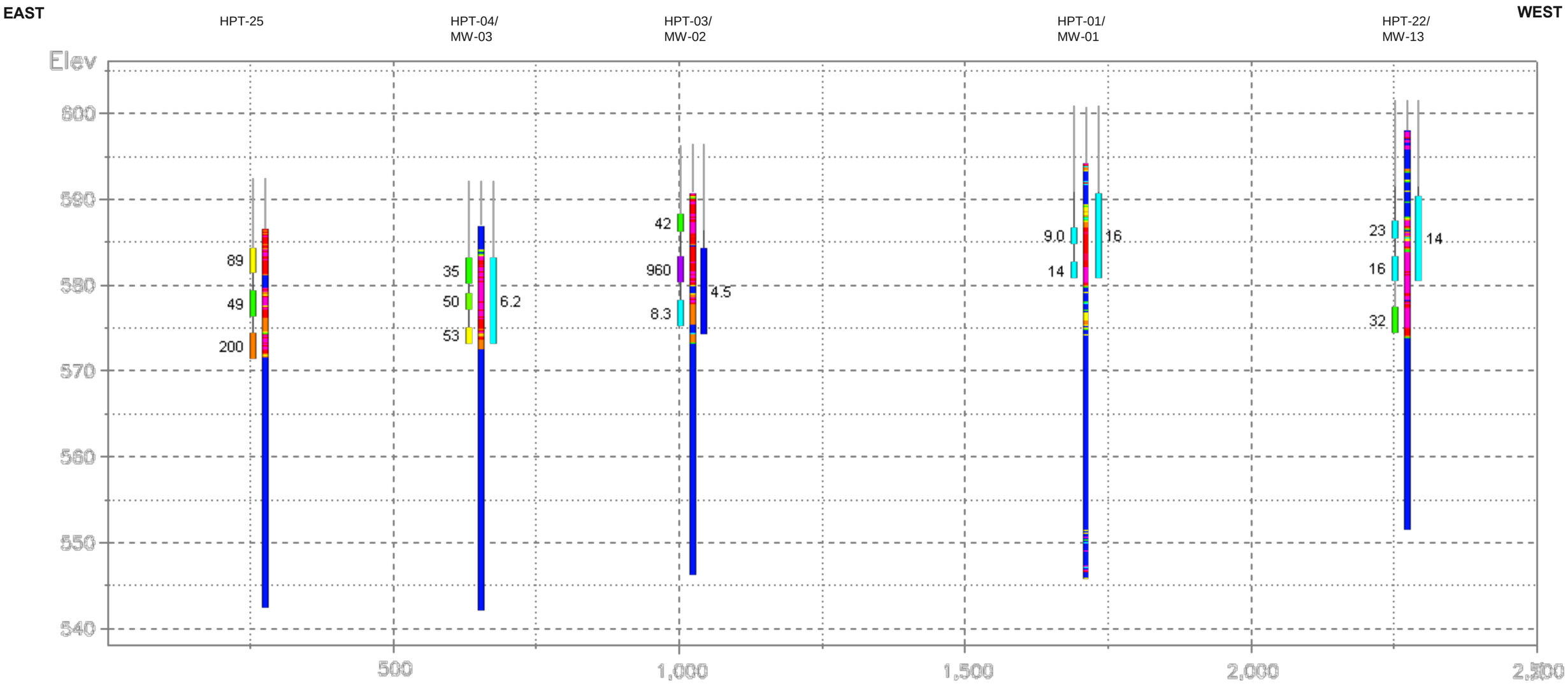
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Nickel Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois



Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Nickel Concentration

- >750 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
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- >5.0 – 25 ug/L
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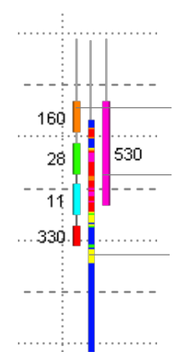

HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
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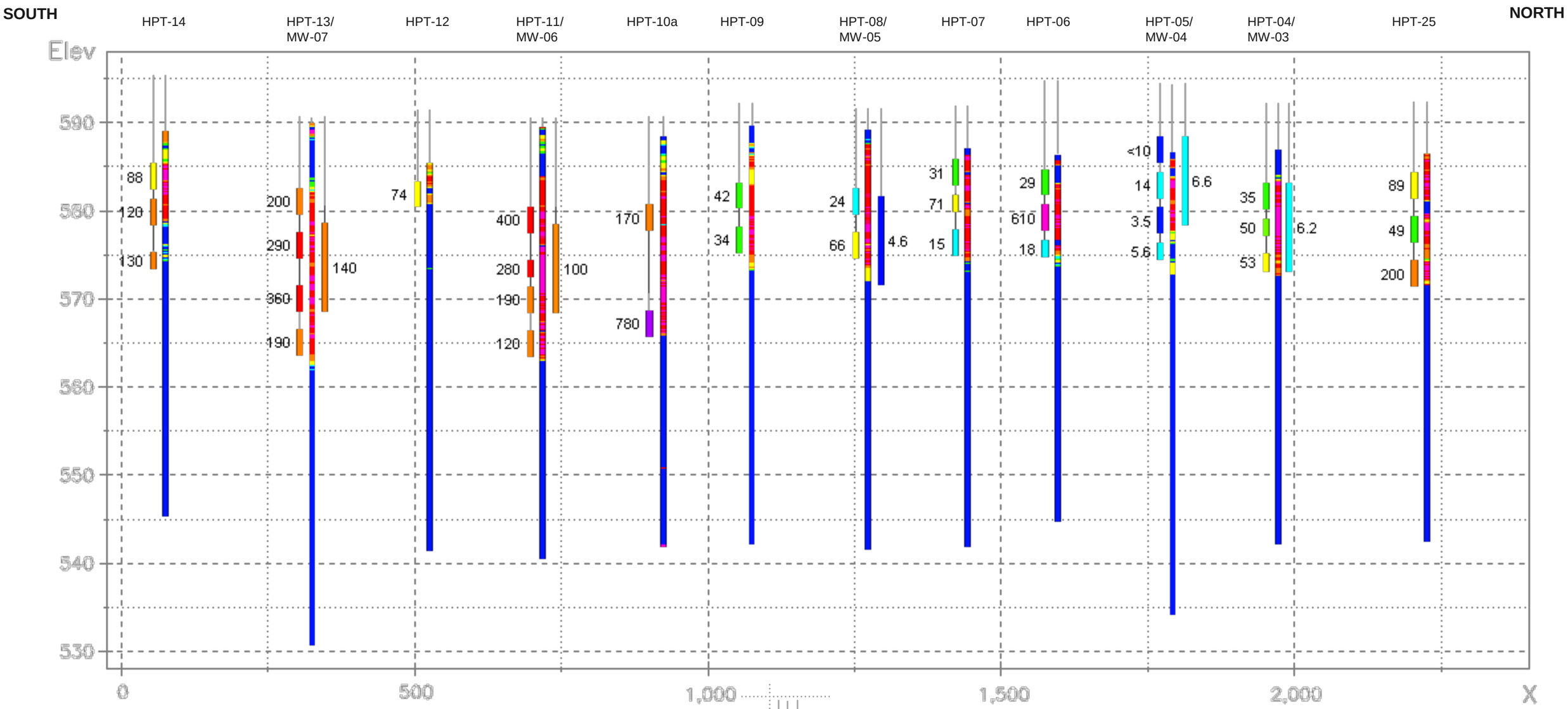
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Nickel Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

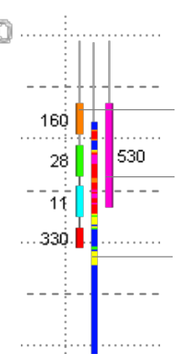


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Nickel Concentration

- >750 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
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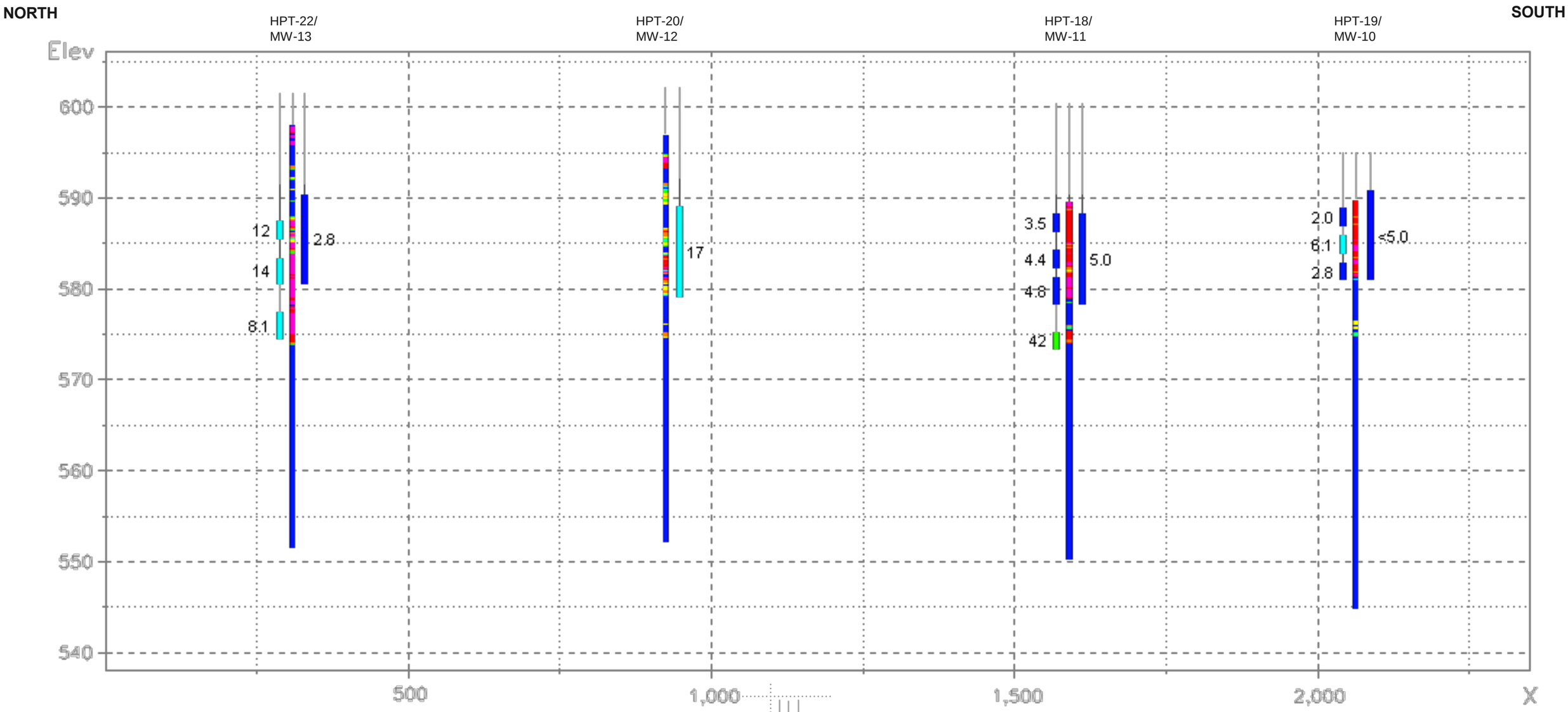
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Vanadium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

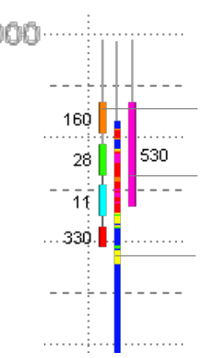


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Vanadium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
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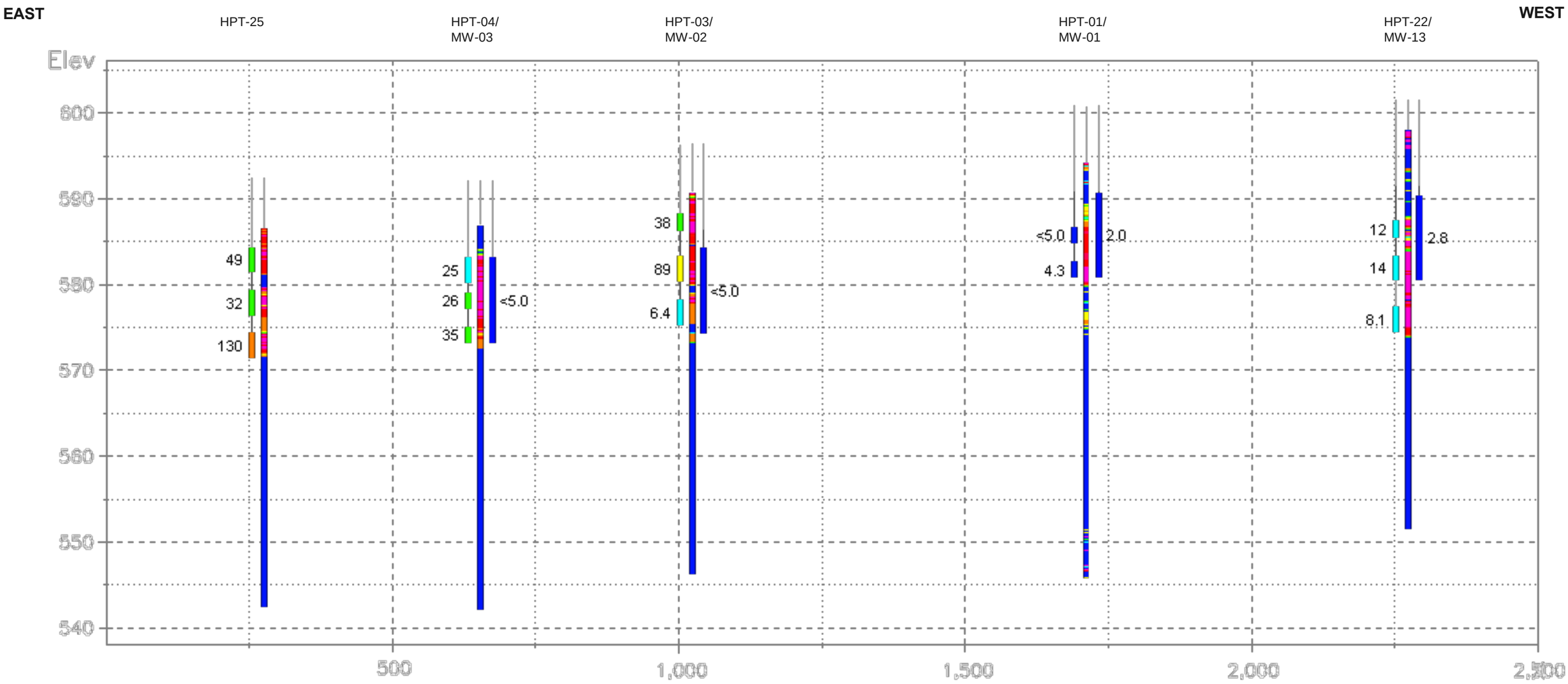
Northern Boundary – Estimated Hydraulic Conductivity and Vanadium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

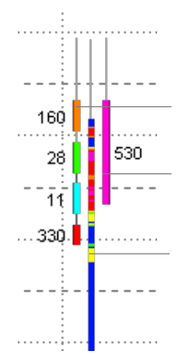


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Vanadium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
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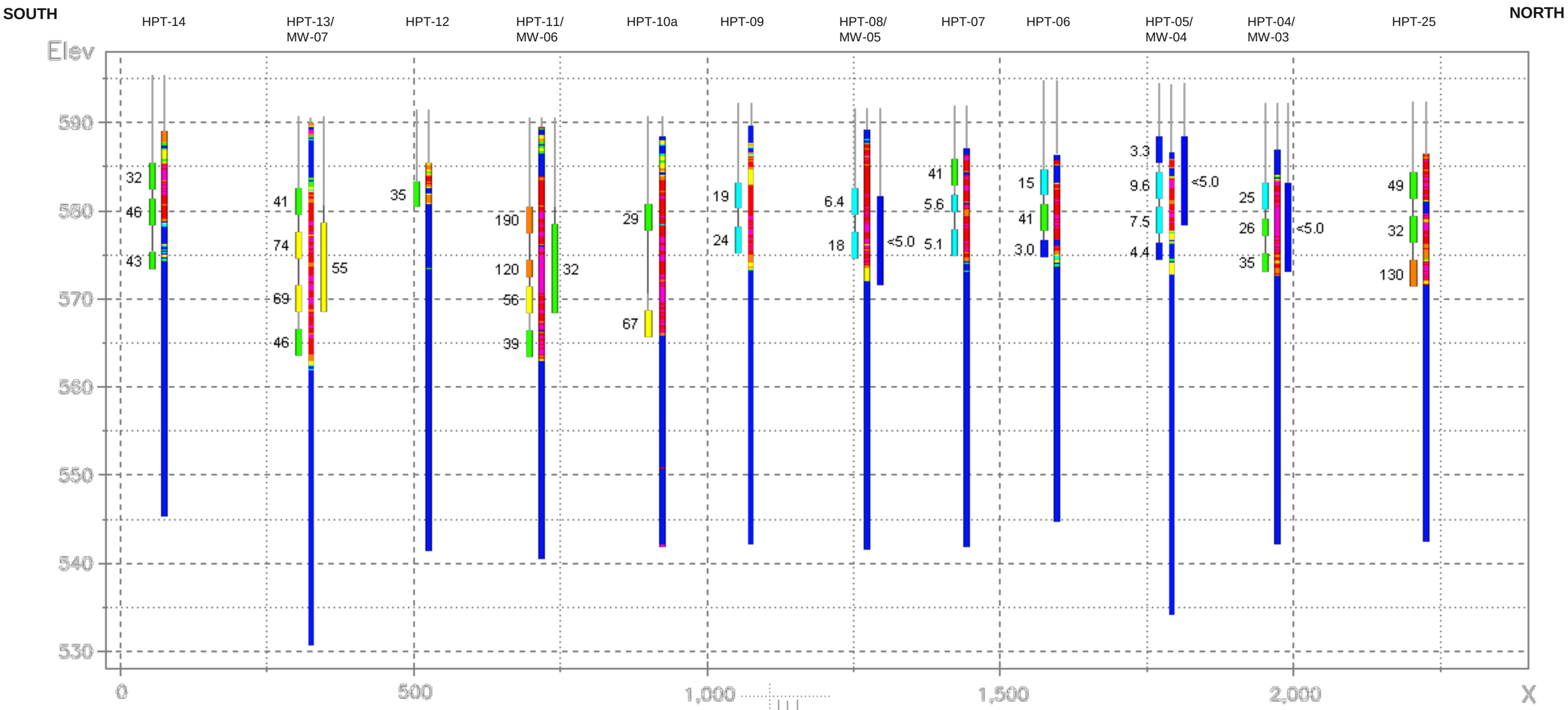
Eastern Boundary – Estimated Hydraulic Conductivity and Vanadium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois



Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Vanadium Concentration

- >250 ug/L
- >100 – 250 ug/L
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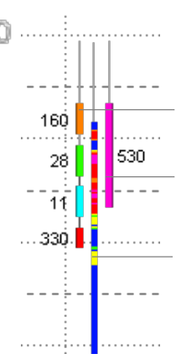

HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

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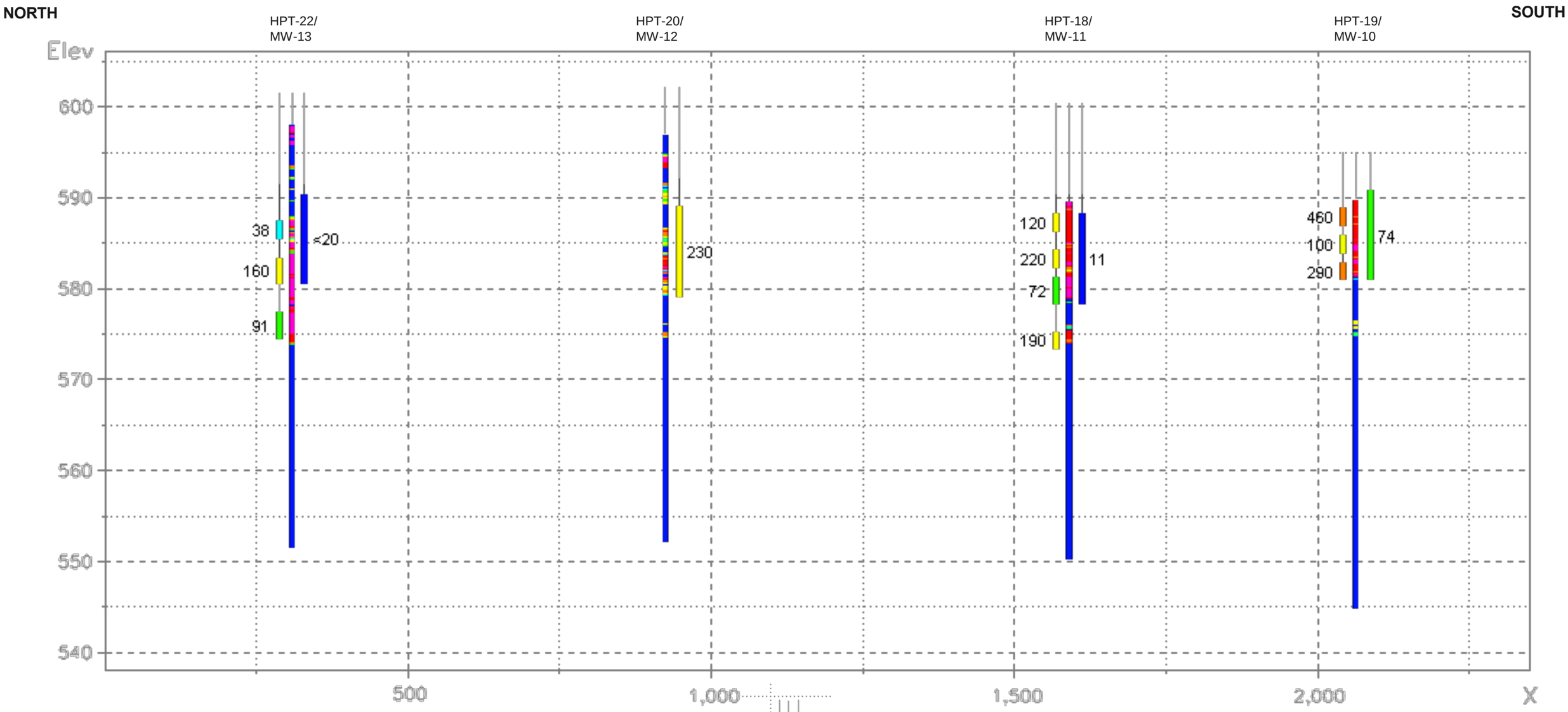
Western Boundary – Estimated Hydraulic Conductivity and Zinc Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

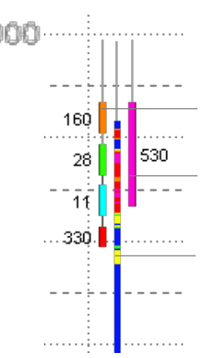


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Zinc Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

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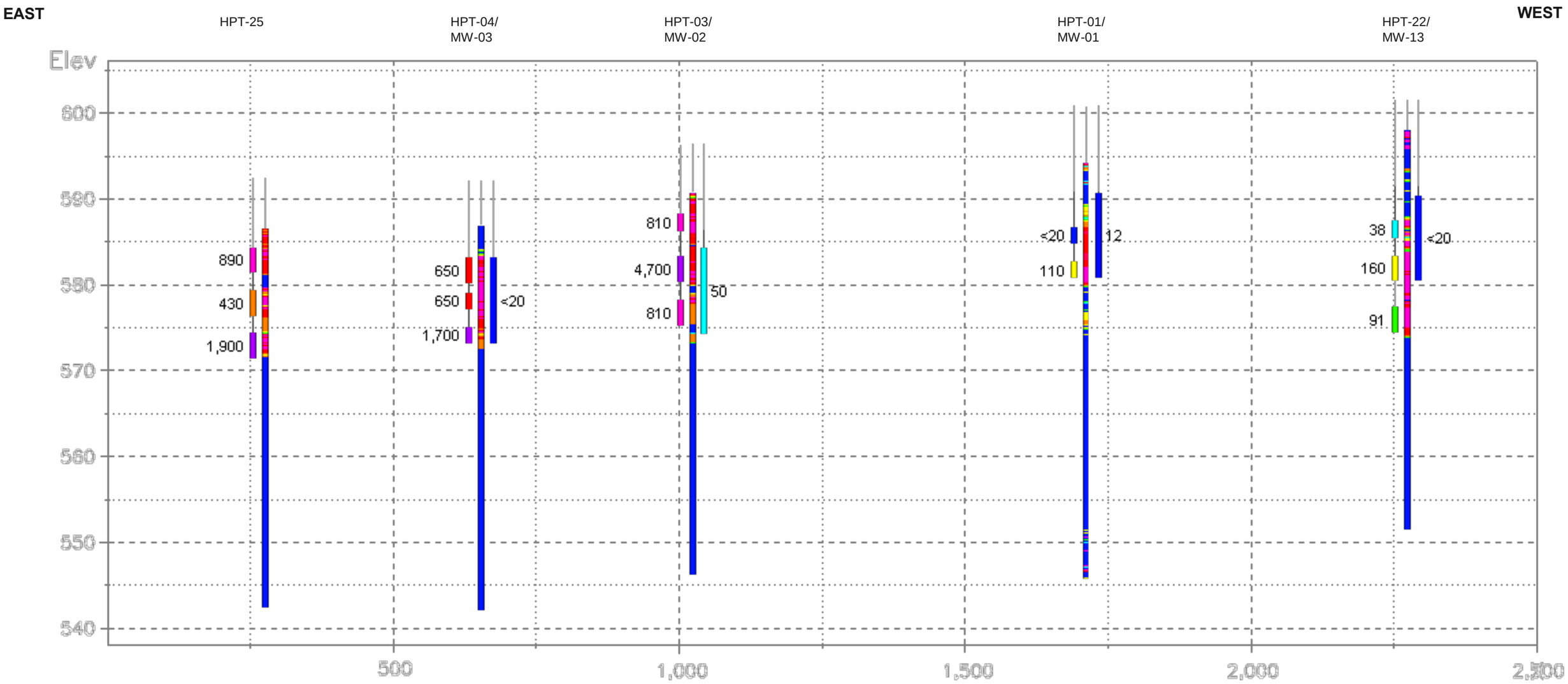
Northern Boundary – Estimated Hydraulic Conductivity and Zinc Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois



Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Zinc Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
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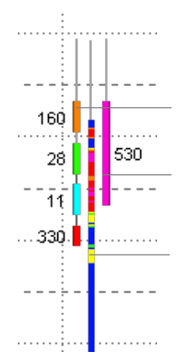
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

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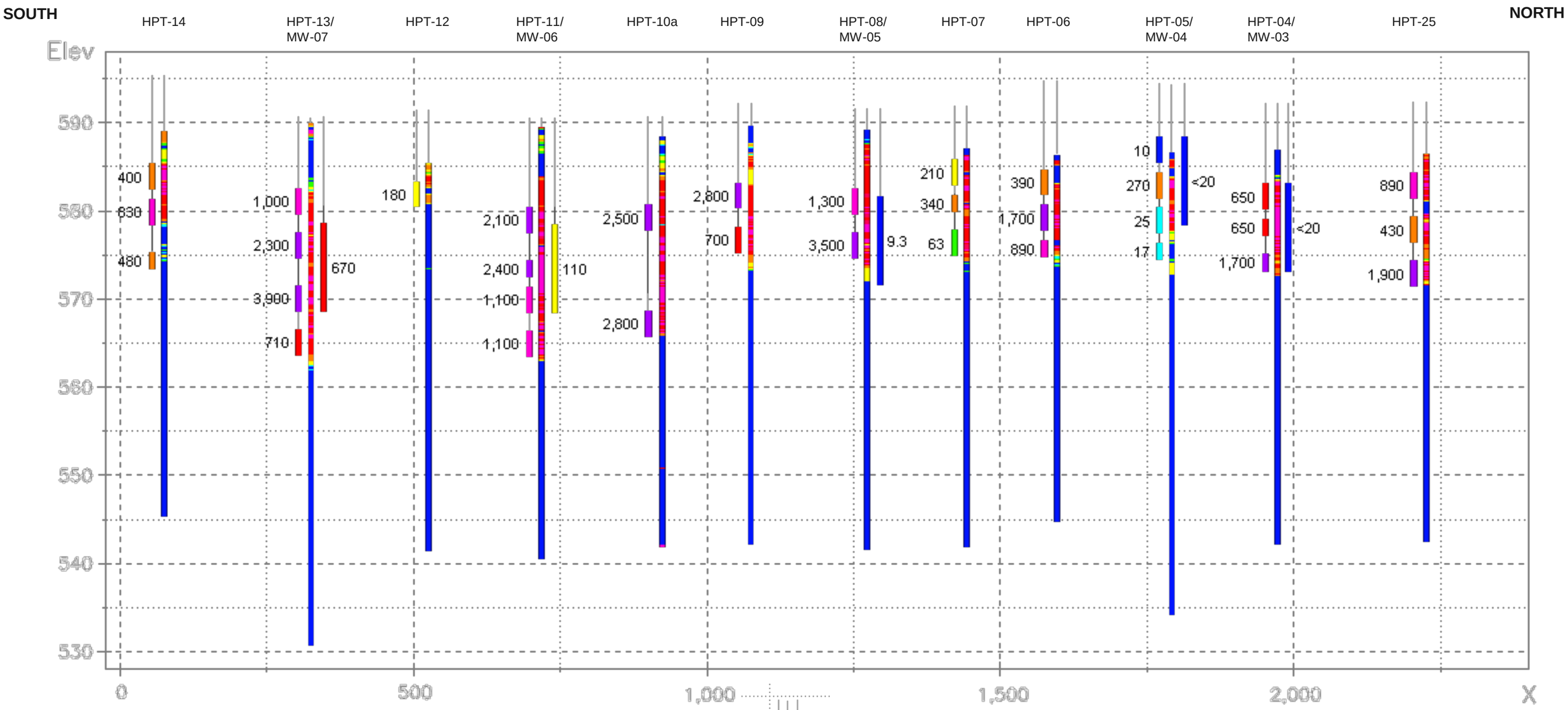
Eastern Boundary – Estimated Hydraulic Conductivity and Zinc Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois



Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
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- >50 – 100 ug/L
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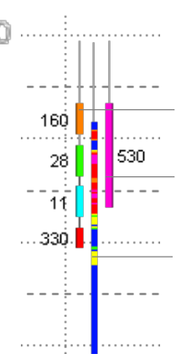
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

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APPENDIX K

Screening Tables

Table 1. Screening of LCCS Groundwater Data Against Groundwater Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, All Wells[1]	Maximum Non-Detect, All Wells[1]	Illinois Screening Criteria for Groundwater				Illiinois Tiered Approach to Corrective Action Objectives			
						Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)	Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	1.3	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	1.3	0.1	10	No	100	No	10	No	100	No
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	1600	50	400	Yes	400	Yes	400	Yes	400	Yes
Gases													
Carbon Dioxide	124-38-9	N	mg/l	450	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	29	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	140	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.012	0.1	0.006	Yes	0.024	No	0.006	Yes	0.024	No
Antimony	7440-36-0	T	mg/l	0.019	0.1	0.006	Yes	0.024	No	0.006	Yes	0.024	No
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.01	Yes	0.2	No	0.05	Yes	0.2	No
Arsenic	7440-38-2	T	mg/l	0.058	0.01	0.01	Yes	0.2	No	0.05	Yes	0.2	No
Barium	7440-39-3	D	mg/l	1.2	--	2	No	2	No	2	No	2	No
Barium	7440-39-3	T	mg/l	1.1	--	2	No	2	No	2	No	2	No
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	0.004	No	0.5	No	0.004	No	0.5	No
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	0.004	No	0.5	No	0.004	No	0.5	No
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	0.005	Yes	0.05	No	0.005	Yes	0.05	No
Cadmium	7440-43-9	T	mg/l	0.008	0.01	0.005	Yes	0.05	No	0.005	Yes	0.05	No
Calcium	7440-70-2	D	mg/l	790	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	930	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	0.1	Yes	1	No	0.1	Yes	1	No
Chromium	7440-47-3	T	mg/l	0.5	0.01	0.1	Yes	1	No	0.1	Yes	1	No
Cobalt	7440-48-4	D	mg/l	0.12	0.005	1	No	1	No	1	No	1	No
Cobalt	7440-48-4	T	mg/l	0.12	0.005	1	No	1	No	1	No	1	No
Copper	7440-50-8	D	mg/l	0.052	0.05	0.65	No	0.65	No	0.65	No	0.65	No
Copper	7440-50-8	T	mg/l	0.082	0.01	0.65	No	0.65	No	0.65	No	0.65	No
Iron	7439-89-6	D	mg/l	41	36	5	Yes	5	Yes	5	Yes	5	Yes
Iron	7439-89-6	T	mg/l	42	34	5	Yes	5	Yes	5	Yes	5	Yes
Lead	7439-92-1	D	mg/l	0.39	0.005	0.0075	Yes	0.1	Yes	0.0075	Yes	0.1	Yes
Lead	7439-92-1	T	mg/l	0.71	0.005	0.0075	Yes	0.1	Yes	0.0075	Yes	0.1	Yes
Magnesium	7439-95-4	D	mg/l	290	0.1	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	300	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.4	0.05	0.15	Yes	10	No	0.15	Yes	10	No
Manganese	7439-96-5	T	mg/l	2.6	0.05	0.15	Yes	10	No	0.15	Yes	10	No
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.002	No	0.01	No	0.002	No	0.01	No
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	0.002	No	0.01	No	0.002	No	0.01	No
Nickel	7440-02-0	D	mg/l	0.25	0.01	0.1	Yes	2	No	0.1	Yes	2	No
Nickel	7440-02-0	T	mg/l	0.27	0.01	0.1	Yes	2	No	0.1	Yes	2	No
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	0.05	No	0.05	No	0.05	No	0.05	No
Selenium	7782-49-2	T	mg/l	0.023	0.05	0.05	No	0.05	No	0.05	No	0.05	No
Silver	7440-22-4	D	mg/l	0.0016	0.025	0.05	No	--	--	0.05	No	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	0.05	No	--	--	0.05	No	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	0.002	Yes	0.02	Yes	0.002	Yes	0.02	Yes
Thallium	7440-28-0	T	mg/l	--	0.05	0.002	Yes	0.02	Yes	0.002	Yes	0.02	Yes
Vanadium	7440-62-2	D	mg/l	0.076	0.005	0.049	Yes	0.1	No	0.049	Yes	0.1	No
Vanadium	7440-62-2	T	mg/l	0.081	0.005	0.049	Yes	0.1	No	0.049	Yes	0.1	No
Zinc	7440-66-6	D	mg/l	0.67	0.02	5	No	10	No	5	No	10	No
Zinc	7440-66-6	T	mg/l	1.1	0.02	5	No	10	No	5	No	10	No
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.2	--	--	--	--	14	No	70	No
4,4-DDE	72-55-9	N	ug/l	--	0.2	--	--	--	--	10	No	50	No
4,4-DDT	50-29-3	N	ug/l	--	0.2	--	--	--	--	6	No	30	No
Aldrin	309-00-2	N	ug/l	--	0.2	--	--	--	--	14	No	70	No
Alpha-BHC	319-84-6	N	ug/l	--	0.2	0.11	Yes	0.55	No	0.11	Yes	0.55	No
Alpha-chlordane	5103-71-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.2	--	--	--	--	9	No	45	No
Endosulfan I	959-98-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.2	2	No	10	No	2	No	10	No
Endrin aldehyde	7421-93-4	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.2	--	--	--	--	0.2	No	1	No
Heptachlor	76-44-8	N	ug/l	--	0.2	0.4	No	2	No	0.4	No	2	No
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.2	0.2	No	1	No	0.2	No	1	No
Methoxychlor	72-43-5	N	ug/l	--	0.4	40	No	200	No	40	No	200	No
Toxaphene	8001-35-2	N	ug/l	--	2	3	No	15	No	3	No	15	No
trans-chlordane	5103-74-2	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	2200	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	2	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	2	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	2	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	2	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	2	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	2	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	2	--	--	--	--	--	--	--	--

Table 1. Screening of LCCS Groundwater Data Against Groundwater Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, All Wells[1]	Maximum Non-Detect, All Wells[1]	Illinois Screening Criteria for Groundwater				Illiinois Tiered Approach to Corrective Action Objectives			
						Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)	Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	38	410	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	160	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	810	--	--	--	--	700	Yes	3500	No
2,4,6-Trichlorophenol	88-06-2	N	ug/l	1.3	410	--	--	--	--	10	No	50	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	810	--	--	--	--	21	Yes	21	Yes
2,4-Dimethylphenol	105-67-9	N	ug/l	470	810	--	--	--	--	140	Yes	140	Yes
2,4-Dinitrophenol	51-28-5	N	ug/l	--	1600	--	--	--	--	14	Yes	14	Yes
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	81	0.1	Yes	0.1	Yes	0.02	Yes	0.02	Yes
2,6-Dinitrotoluene	606-20-2	N	ug/l	2.2	41	0.31	Yes	0.31	Yes	0.31	Yes	0.31	Yes
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	160	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	5.8	410	--	--	--	--	35	No	175	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	1600	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	360	7.3	28	Yes	140	Yes	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	7600	16	350	Yes	350	Yes	350	Yes	350	Yes
2-Nitroaniline	88-74-4	N	ug/l	--	410	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	810	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	410	--	--	--	--	20	Yes	100	Yes
3-Nitroaniline	99-09-2	N	ug/l	--	810	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	410	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	810	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	410	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	510000	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	810	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	1600	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	29	81	420	No	2100	No	420	No	2100	No
Acenaphthylene	208-96-8	N	ug/l	4.8	81	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	32	410	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	12	81	2100	No	10500	No	2100	No	10500	No
Atrazine	1912-24-9	N	ug/l	--	410	3	Yes	15	Yes	3	Yes	15	Yes
Benzaldehyde	100-52-7	N	ug/l	40	1600	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	16	0.13	Yes	0.65	Yes	0.13	Yes	0.65	Yes
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	16	0.2	Yes	2	Yes	0.2	Yes	2	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	16	0.18	Yes	0.9	Yes	0.18	Yes	0.9	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	81	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	16	0.17	Yes	6	No	0.17	Yes	0.85	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	3.8	160	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	1.4	160	--	--	--	--	10	No	10	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	810	--	--	--	--	6	Yes	60	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	1.3	160	--	--	--	--	1400	No	7000	No
Caprolactam	105-60-2	N	ug/l	2.9	810	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	150	410	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	41	12	No	60	No	1.5	Yes	7.5	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	24	0.3	Yes	1.5	Yes	0.3	Yes	1.5	Yes
Dibenzofuran	132-64-9	N	ug/l	56	160	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	32	160	5600	No	5600	No	5600	No	5600	No
Dimethyl phthalate	131-11-3	N	ug/l	--	160	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	5.5	410	700	No	3500	No	700	No	3500	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	810	--	--	--	--	140	Yes	700	Yes
Fluoranthene	206-44-0	N	ug/l	12	81	280	No	1400	No	280	No	1400	No
Fluorene	86-73-7	N	ug/l	83	81	280	No	1400	No	280	No	1400	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	410	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	41	--	--	--	--	0.06	Yes	0.3	Yes
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	1600	50	Yes	500	Yes	50	Yes	500	Yes
Hexachloroethane	67-72-1	N	ug/l	--	410	--	--	--	--	7	Yes	35	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	16	0.43	Yes	2.2	No	0.43	Yes	2.15	No
Isophorone	78-59-1	N	ug/l	19000	17	--	--	--	--	1400	Yes	1400	Yes
Naphthalene	91-20-3	N	ug/l	3600	3.6	140	Yes	220	Yes	140	Yes	220	Yes
Nitrobenzene	98-95-3	N	ug/l	--	81	--	--	--	--	3.5	Yes	3.5	Yes
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	41	--	--	--	--	1.8	Yes	1.8	Yes
N-Nitrosodiphenylamine	86-30-6	N	ug/l	14.5	81	--	--	--	--	3.2	Yes	16	No
p-Chloroaniline	106-47-8	N	ug/l	13	810	--	--	--	--	28	No	28	No
Pentachlorophenol	87-86-5	N	ug/l	1200	170	1	Yes	5	Yes	1	Yes	5	Yes
Phenanthrene	85-01-8	N	ug/l	69	81	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4000	42	100	Yes	100	Yes	100	Yes	100	Yes
Pyrene	129-00-0	N	ug/l	10	81	210	No	1050	No	210	No	1050	No
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	20	200	No	1000	No	200	No	1000	No
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	20	--	--	--	--	4.3	Yes	420	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	20	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	20	5	Yes	50	No	5	Yes	50	No
1,1-Dichloroethane	75-34-3	N	ug/l	3300	20	140	Yes	7000	No	700	Yes	3500	No
1,1-Dichloroethene	75-35-4	N	ug/l	10	20	7	Yes	35	No	7	Yes	35	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	20	70	No	700	No	70	No	700	No
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	100	--	--	--	--	0.2	Yes	0.2	Yes
1,2-Dibromoethane	106-93-4	N	ug/l	--	20	--	--	--	--	0.05	Yes	0.5	Yes
1,2-Dichlorobenzene	95-50-1	N	ug/l	24	20	--	--	--	--	600	No	1500	No
1,2-Dichloroethane	107-06-2	N	ug/l	58	20	--	--	--	--	5	Yes	25	Yes
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	20	5	No	25	No	5	No	25	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	5.6	20	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	23	20	--	--	--	--	75	No	375	No
2-Butanone (MEK)	78-93-3	N	ug/l	2700	100	4200	No	4200	No	4200	No	4200	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	24000	100	--	--	--	--	560	Yes	--	--
Acetone	67-64-1	N	ug/l	4800	100	6300	No	6300	No	6300	No	6300	No
Benzene	71-43-2	N	ug/l	540	0.5	5	Yes	25	Yes	5	Yes	25	Yes
Bromodichloromethane	75-27-4	N	ug/l	--	20	--	--	--	--	0.2	Yes	0.2	Yes
Bromoform	75-25-2	N	ug/l	--	20	--	--	--	--	1	Yes	1	Yes
Bromomethane	74-83-9	N	ug/l	--	40	--	--	--	--	9.8	Yes	49	No
Carbon Disulfide	75-15-0	N	ug/l	33	40	700	No	3500	No	700	No	3500	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	20	5	Yes	25	No	5	Yes	25	No
CFC-11	75-69-4	N	ug/l	--	20	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	40	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	660	20	--	--	--	--	100	Yes	500	Yes
Chlorodibromomethane	124-48-1	N	ug/l	--	20	--	--	--	--	140	No	140	No
Chloroethane	75-00-3	N	ug/l	26	20	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	20	--	--	--	--	0.2	Yes	1	No
Chloromethane	74-87-3	N	ug/l	--	20	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1100	20	70	Yes	200	Yes	70	Yes	200	Yes
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	20	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	110	20	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6300	100	5	Yes	50	Yes	5	Yes	50	Yes
Ethylbenzene	100-41-4	N	ug/l	3400	0.5	700	Yes	1000	Yes	700	Yes	1000	Yes
Isopropylbenzene	98-82-8	N	ug/l	110	20	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	100	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	100	--	--	--	--	35	Yes	--	--
Methylcyclohexane	108-87-2	N	ug/l	170	20	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	20	70	No	70	No	70	No	70	No
Styrene (Monomer)	100-42-5	N	ug/l	120	20	100	Yes	500	No	100	Yes	500	No
Tetrachloroethene	127-18-4	N	ug/l	680	20	5	Yes	25	Yes	5	Yes	25	Yes
Toluene	108-88-3	N	ug/l	11000	0.5	1000	Yes	2500	Yes	1000	Yes	2500	Yes
Total Xylenes	1330-20-7	N	ug/l	19000	1	10000	Yes	10000	Yes	10000	Yes	10000	Yes
trans-1,2-Dichloroethene	156-60-5	N	ug/l	23	20	100	No	500	No	100	No	500	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	20	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	720	10	5	Yes	25	Yes	5	Yes	25	Yes
Vinyl chloride	75-01-4	N	ug/l	420	10	2	Yes	10	Yes	2	Yes	10	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not detected in any samples), the maximum non-detect was used.

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.017	0.1	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.058	0.01	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	0.030	No	0.0024	Yes	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	1.3	No	0.44	Yes	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	0.048	Yes	0.029	Yes	--	--	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	1	Yes	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.39	0.005	0.24	Yes	0.051	Yes	--	--	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	0.21	No	0.013	Yes	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.16	0.01	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	0.30	Yes	0.079	Yes	--	--	--	--
Zinc	7440-66-6	T	mg/l	1.1	0.02	--	--	--	--	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.017	0.1	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	0.058	0.01	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	0.030	No	0.0023	Yes	--	--
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	1.4	No	0.18	Yes	--	--
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	0.040	Yes	0.024	Yes	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.39	0.005	0.24	Yes	0.051	Yes	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.17	0.01	0.21	No	0.013	Yes	--	--
Nickel	7440-02-0	T	mg/l	0.16	0.01	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	0.30	Yes	0.079	Yes	--	--
Zinc	7440-66-6	T	mg/l	1.1	0.02	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	0.017	0.1	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.058	0.01	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.39	0.005	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.16	0.01	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	--	--	--	--	0.003	Yes
Thallium	7440-28-0	T	mg/l	--	0.05	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	1.1	0.02	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	0.75	Yes	0.087	Yes
Antimony	7440-36-0	D	mg/l	0.011	0.1	0.0056	Yes	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.017	0.1	0.0056	Yes	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.058	0.01	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	--	--	--	--	0.0050	Yes	0.0016	Yes
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	--	--	--	--	1.4	No	0.18	Yes
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	D	mg/l	0.39	0.005	--	--	--	--	0.21	Yes	0.0081	Yes
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	0.05	Yes	0.1	Yes	--	--	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	0.61	No	4.6	No	1.2	No	0.13	Yes
Nickel	7440-02-0	T	mg/l	0.16	0.01	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	7.4	No	26	No	0.3	Yes	0.3	Yes
Zinc	7440-66-6	T	mg/l	1.1	0.02	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.19	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	--	0.19	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	0.008	Yes	0.014	Yes	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	Yes
Endosulfan I	959-98-8	N	ug/l	--	0.19	20	No	30	No	0.22	No	0.056	Yes
Endosulfan II	33213-65-9	N	ug/l	--	0.19	20	No	40	No	0.22	No	0.056	Yes
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	0.03	Yes	0.03	Yes	0.086	Yes	0.036	Yes
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	Yes
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	Yes
Methoxychlor	72-43-5	N	ug/l	--	0.39	0.02	Yes	0.02	Yes	--	--	0.03	Yes
Toxaphene	8001-35-2	N	ug/l	--	1.9	0.0007	Yes	0.00071	Yes	0.73	Yes	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	25	Yes	140	Yes	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	0.14	Yes	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	0.14	Yes	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	0.017	0.1	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.0025	Yes	0.048	Yes	0.34	No	0.00969	Yes
Arsenic	7440-38-2	T	mg/l	0.058	0.01	0.0025	Yes	0.048	Yes	0.34	No	0.00969	Yes
Barium	7440-39-3	D	mg/l	0.97	--	0.05	Yes	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.96	--	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	< 0.002	Yes	0.0051	Yes	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	0.008	0.01	< 0.002	Yes	0.0051	Yes	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	0.5	0.01	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	0.045	0.005	< 0.008	Yes	0.024	Yes	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	0.044	0.005	< 0.008	Yes	0.024	Yes	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.052	0.05	0.0051	Yes	0.0232	Yes	0.0364	Yes	7.22	No
Copper	7440-50-8	T	mg/l	0.082	0.01	0.0051	Yes	0.0232	Yes	0.0364	Yes	7.22	No
Iron	7439-89-6	D	mg/l	26	0.2	0.71	Yes	1	Yes	1	Yes	126	No
Iron	7439-89-6	T	mg/l	28	0.2	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	D	mg/l	0.39	0.005	< 0.002	Yes	0.0167	Yes	0.3182	Yes	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	< 0.002	Yes	0.0167	Yes	0.3182	Yes	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	0.042	Yes	1	Yes	1	Yes	1.96	Yes
Manganese	7439-96-5	T	mg/l	2.2	0.05	0.042	Yes	1	Yes	1	Yes	1.96	Yes
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.000017	Yes	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	0.000017	Yes	0.0009	Yes	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	< 0.02	Yes	0.1336	Yes	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	0.16	0.01	< 0.02	Yes	0.1336	Yes	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	< 0.002	Yes	0.005	Yes	0.01	Yes	0.903	No
Selenium	7782-49-2	T	mg/l	0.011	0.05	< 0.002	Yes	0.005	Yes	0.01	Yes	0.903	No
Silver	7440-22-4	D	mg/l	0.0016	0.025	< 0.002	No	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	0.0026	0.025	< 0.002	Yes	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	< 0.002	Yes	0.01	Yes	0.02	Yes	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	< 0.002	Yes	0.01	Yes	0.02	Yes	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	0.081	0.005	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.67	0.02	0.012	Yes	0.3039	Yes	0.3014	Yes	55.3	No
Zinc	7440-66-6	T	mg/l	1.1	0.02	0.012	Yes	0.3039	Yes	0.3014	Yes	55.3	No
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	0.06	Yes	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	0.03	Yes	0.16	Yes	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	0.004	Yes	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	0.004	Yes	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--	0.194	Yes
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--	0.194	Yes
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	3.2	8.5	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	45.5	42	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	--	--	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	4200	No	860	No	310	Yes	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	150	Yes	14	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	920	No	360	Yes	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	13	0.5	--	--	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not detected in any samples), the maximum non-detect was used.

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	3.2	8.5	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	45.5	42	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	4200	No	860	No	310	Yes
Bromodichloromethane	75-27-4	N	ug/l	--	1	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	150	Yes	14	Yes	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	920	No	360	Yes	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	13	0.5	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	2.1	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	0.66	Yes	0.53	Yes	0.035	Yes
Atrazine	1912-24-9	N	ug/l	--	42.5	82	No	9	Yes	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	180	No	14	Yes	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	--	--	0.16	Yes
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	--	--	0.16	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	76	Yes	17	Yes	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	--	17	190	No	15	Yes	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	4.3	Yes	1.8	Yes	120	No
Fluorene	86-73-7	N	ug/l	3.2	8.5	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	2.9	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	--	--	0.16	Yes
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	48	3.6	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	16	8.5	46	No	3.7	Yes	--	--
Phenol	108-95-2	N	ug/l	45.5	42	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	--	--	3500	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	25000	No	4500	No	23	Yes
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	56	5	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	530	0.5	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	200	No	20	Yes	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	--	1	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	--	1	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	13	0.5	8400	No	930	No	2	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	1.5	Yes	2.8	Yes	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	10	Yes	60	Yes	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	100	Yes	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	10	Yes	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	0.049	Yes	1.7	Yes	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	30	Yes	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	2	Yes	30	Yes	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	0.03	Yes	2.2	Yes	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	0.12	Yes	0.13	Yes	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	3.2	8.5	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	4	Yes	4	Yes	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	17	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	0.005	Yes	0.51	Yes	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	3.3	Yes	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	0.03	Yes	0.04	Yes	19	Yes	15	Yes
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	45.5	42	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	10	8.5	20	No	30	No	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	0.2	Yes	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	0.55	Yes	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	0.071	Yes	0.076	Yes	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	9.9	Yes	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	0.9	Yes	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	0.58	Yes	16	Yes	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	0.95	Yes	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	0.4	Yes	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	1	0.8	Yes	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	68	Yes	130	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	57	Yes	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	0.6	Yes	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	13	0.5	0.022	Yes	1.6	Yes	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	--	--	36.9	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--	5.8	Yes
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	3.3	8.5	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	0.03	Yes	0.2	Yes	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	7.6	Yes	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--	11	Yes
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	0.5	Yes	2.5	Yes	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	--	--	4.4	Yes	199	No	7600	No
Fluorene	86-73-7	N	ug/l	3.2	8.5	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--	43.4	Yes
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	3.7	Yes	46	No	3550	No
Phenol	108-95-2	N	ug/l	45.5	42	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	0.3	Yes	87.6	No	220	No
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	--	--	--	--	--	--	175	Yes
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	420	0.5	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	910	1	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	13	0.5	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions												
Ammonia Nitrogen	7664-41-7	T	mg/l	280	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.0796	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.0746	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0147	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	104	--	--	--	--	--	--	--	--
Gases												
Carbon Dioxide	124-38-9	N	mg/l	124	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	18400	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	9.82	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	2.29	--	--	--	--	--	--	--	--
General Chemistry												
Total Suspended Solids	ARC-TSS	T	mg/l	19.3	--	--	--	--	--	--	--	--
Metals												
Aluminum	7429-90-5	D	mg/l	0.344	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.485	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0138	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0148	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0165	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0181	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.481	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.492	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00274	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00276	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00201	0.030	No	0.0024	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.00262	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	74.4	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	72.9	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.113	1.3	No	0.44	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.121	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0162	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0163	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0105	0.048	No	0.029	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0177	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	7.43	1	Yes	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	7.72	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.0597	0.24	No	0.051	Yes	--	--	--	--
Lead	7439-92-1	T	mg/l	0.159	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	56.1	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	55.3	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.262	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.259	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000169	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.000304	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.0588	0.21	No	0.013	Yes	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.059	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	263	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	262	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.00802	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.00773	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00346	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00347	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	1490	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	1480	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.007	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.007	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0242	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0271	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.119	0.30	No	0.079	Yes	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.24	--	--	--	--	--	--	--	--
Organochlorine Pesticides												
4,4-DDD	72-54-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	0.0657	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	0.327	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Other												
Sulfide	18496-25-8	N/T	mg/l	4.36	--	--	--	--	--	--	--	--
Total Organic Carbon												
Total Organic Carbon	ARC-TOC	N	mg/l	201	--	--	--	--	--	--	--	--
Polychorinated Biphenyls												
Aroclor 1016	12674-11-2	N	ug/l	0.19	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.226	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.482	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	1.43	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.356	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.446	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	0.19	--	--	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.030	No	0.0023	No	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	1.4	No	0.18	No	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.040	No	0.024	No	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.24	No	0.051	Yes	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.21	No	0.013	Yes	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.30	No	0.079	Yes	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	0.003	Yes
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	0.75	No	0.087	Yes
Antimony	7440-36-0	D	mg/l	0.0056	Yes	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0056	Yes	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	0.0050	No	0.0016	Yes
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	1.4	No	0.18	No
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	D	mg/l	--	--	--	--	0.21	No	0.0081	Yes
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.05	Yes	0.1	Yes	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.61	No	4.6	No	1.2	No	0.13	No
Nickel	7440-02-0	T	mg/l	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	7.4	No	26	No	0.3	No	0.3	No
Zinc	7440-66-6	T	mg/l	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.008	Yes	0.014	Yes	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	No
Endosulfan I	959-98-8	N	ug/l	20	No	30	No	0.22	No	0.056	No
Endosulfan II	33213-65-9	N	ug/l	20	No	40	No	0.22	No	0.056	No
Endosulfan sulfate	1031-07-8	N	ug/l	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	0.03	Yes	0.03	Yes	0.086	No	0.036	No
Endrin aldehyde	7421-93-4	N	ug/l	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	Yes
Heptachlor epoxide	1024-57-3	N	ug/l	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	Yes
Methoxychlor	72-43-5	N	ug/l	0.02	Yes	0.02	Yes	--	--	0.03	Yes
Toxaphene	8001-35-2	N	ug/l	0.0007	Yes	0.00071	Yes	0.73	No	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	25	Yes	140	Yes	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	Yes	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.14	Yes	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.0025	Yes	0.048	No	0.34	No	0.00969	Yes
Arsenic	7440-38-2	T	mg/l	0.0025	Yes	0.048	No	0.34	No	0.00969	Yes
Barium	7440-39-3	D	mg/l	0.05	Yes	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	< 0.002	Yes	0.0051	No	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	< 0.002	Yes	0.0051	No	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	< 0.008	Yes	0.024	No	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	< 0.008	Yes	0.024	No	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Copper	7440-50-8	T	mg/l	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	D	mg/l	0.71	Yes	1	Yes	1	Yes	126	No
Iron	7439-89-6	T	mg/l	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	D	mg/l	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Lead	7439-92-1	T	mg/l	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.042	Yes	1	No	1	No	1.96	No
Manganese	7439-96-5	T	mg/l	0.042	Yes	1	No	1	No	1.96	No
Mercury	7439-97-6	D	mg/l	0.000017	Yes	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	< 0.02	Yes	0.1336	No	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	< 0.02	Yes	0.1336	No	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	< 0.002	Yes	0.005	Yes	0.01	No	0.903	No
Selenium	7782-49-2	T	mg/l	< 0.002	Yes	0.005	Yes	0.01	No	0.903	No
Silver	7440-22-4	D	mg/l	< 0.002	Yes	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	< 0.002	Yes	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	< 0.002	Yes	0.01	No	0.02	No	--	--
Thallium	7440-28-0	T	mg/l	< 0.002	Yes	0.01	No	0.02	No	--	--
Vanadium	7440-62-2	D	mg/l	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Zinc	7440-66-6	T	mg/l	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	0.06	No	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	0.03	Yes	0.16	No	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	0.004	Yes	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	0.004	Yes	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	0.194	Yes
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	0.194	Yes
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds												
1,1-Biphenyl	92-52-4	N	ug/l	7.06	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	2.82	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	14.1	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	7.06	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	14.1	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	95.8	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	28.4	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	0.997	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	2.9	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	7.06	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	28.4	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	2.42	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	19.8	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	7.06	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	14.1	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	7.06	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	14.1	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	7.06	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	16.3	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	7.06	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	64.2	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	14.1	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	28.4	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	1.6	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	1.41	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	6.32	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	1.42	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	7.06	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	46.4	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.355	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.463	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.549	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	1.52	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.314	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	2.84	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	2.84	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	65.6	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	2.84	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	14.1	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.03	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.822	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.458	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	2.84	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	2.84	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	2.84	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	7.03	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	14.1	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	2.14	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	1.48	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	7.06	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.706	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	33.5	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	7.06	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.377	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	2.84	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	11.7	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	1.41	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.706	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	1.57	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	14.1	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	28.4	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	3.24	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	10.4	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	2.47	--	--	--	--	--	--	--	--
Volatile Organic Compounds												
1,1,1-Trichloroethane	71-55-6	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	4.15	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	2.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	2.12	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	7.76	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.6	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	6.52	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	7.89	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	23.3	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	22.2	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	107	4200	No	860	No	310	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	0.5	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	1	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	4.45	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	1	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	1.32	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	0.5	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.608	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	0.5	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	3.93	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.963	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	2.72	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	48	150	No	14	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	10.5	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	7.88	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	2.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.679	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	111	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	211	920	No	360	No	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.555	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	0.5	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.419	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	4.26	--	--	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	--	--	--	--	--	--
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	4200	No	860	No	310	No
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	150	No	14	Yes	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	920	No	360	No	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	2.1	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.66	Yes	0.53	Yes	0.035	Yes
Atrazine	1912-24-9	N	ug/l	82	No	9	No	--	--
Benzaldehyde	100-52-7	N	ug/l	180	No	14	Yes	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	0.16	Yes
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	0.16	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	76	No	17	Yes	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	190	No	15	No	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	4.3	No	1.8	Yes	120	No
Fluorene	86-73-7	N	ug/l	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	2.9	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	0.16	Yes
Isophorone	78-59-1	N	ug/l	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	46	No	3.7	No	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	--	--	--	--	3500	No
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	25000	No	4500	No	23	No
1,2-Dichloropropane	78-87-5	N	ug/l	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	200	No	20	No	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	8400	No	930	No	2	Yes

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	1.5	Yes	2.8	Yes	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	10	Yes	60	No	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	100	No	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	10	Yes	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	0.049	Yes	1.7	No	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	30	No	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	2	Yes	30	No	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	0.03	Yes	2.2	Yes	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.12	Yes	0.13	Yes	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	4	Yes	4	Yes	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.005	Yes	0.51	Yes	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	3.3	No	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	0.03	Yes	0.04	Yes	19	Yes	15	Yes
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	20	No	30	No	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.2	Yes	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.55	No	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.071	Yes	0.076	Yes	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	9.9	No	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.9	No	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	0.58	Yes	16	Yes	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.95	No	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.4	Yes	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.8	No	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	68	No	130	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	57	Yes	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.6	No	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	0.022	Yes	1.6	Yes	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--	36.9	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	5.8	No
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	0.03	Yes	0.2	Yes	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	7.6	No	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--	11	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	0.5	No	2.5	No	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	4.4	No	199	No	7600	No
Fluorene	86-73-7	N	ug/l	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	43.4	No
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	--	--	3.7	No	46	No	3550	No
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	--	--	0.3	Yes	87.6	No	220	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--	175	No
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0017	0.01	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	0.030	No	0.0024	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	1.3	No	0.44	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	0.048	No	0.029	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	1	Yes	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.039	0.0005	0.24	No	0.051	No	--	--	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	0.21	No	0.013	Yes	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.016	0.001	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	0.30	No	0.079	No	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.11	0.002	--	--	--	--	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0017	0.01	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	0.030	No	0.0023	No	--	--
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	1.4	No	0.18	No	--	--
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	0.040	No	0.024	No	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.039	0.0005	0.24	No	0.051	No	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.017	0.001	0.21	No	0.013	Yes	--	--
Nickel	7440-02-0	T	mg/l	0.016	0.001	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	0.30	No	0.079	No	--	--
Zinc	7440-66-6	T	mg/l	0.11	0.002	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	0.0017	0.01	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.039	0.0005	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.016	0.001	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	--	--	--	--	0.003	Yes
Thallium	7440-28-0	T	mg/l	--	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.11	0.002	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	0.75	No	0.087	Yes
Antimony	7440-36-0	D	mg/l	0.0011	0.01	0.0056	No	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0017	0.01	0.0056	No	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	--	--	--	--	0.0050	No	0.0016	No
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	--	--	--	--	1.4	No	0.18	No
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	D	mg/l	0.039	0.0005	--	--	--	--	0.21	No	0.0081	Yes
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	0.05	Yes	0.1	Yes	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	0.61	No	4.6	No	1.2	No	0.13	No
Nickel	7440-02-0	T	mg/l	0.016	0.001	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	7.4	No	26	No	0.3	No	0.3	No
Zinc	7440-66-6	T	mg/l	0.11	0.002	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.019	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	--	0.019	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	0.008	Yes	0.014	Yes	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	No
Endosulfan I	959-98-8	N	ug/l	--	0.019	20	No	30	No	0.22	No	0.056	No
Endosulfan II	33213-65-9	N	ug/l	--	0.019	20	No	40	No	0.22	No	0.056	No
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	0.03	No	0.03	No	0.086	No	0.036	No
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	Yes
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	Yes
Methoxychlor	72-43-5	N	ug/l	--	0.039	0.02	Yes	0.02	Yes	--	--	0.03	Yes
Toxaphene	8001-35-2	N	ug/l	--	0.19	0.0007	Yes	0.00071	Yes	0.73	No	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	25	Yes	140	No	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	0.14	0.1	0.14	No	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	0.14	Yes	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	< 0.008	No	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	0.0017	0.01	< 0.008	No	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.0025	Yes	0.048	No	0.34	No	0.00969	No
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	0.0025	Yes	0.048	No	0.34	No	0.00969	No
Barium	7440-39-3	D	mg/l	0.097	--	0.05	Yes	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.096	--	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	0.05	0.001	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	< 0.008	No	0.024	No	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	< 0.008	No	0.024	No	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.0052	0.005	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Copper	7440-50-8	T	mg/l	0.0082	0.001	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	D	mg/l	2.6	0.02	0.71	Yes	1	Yes	1	Yes	126	No
Iron	7439-89-6	T	mg/l	2.8	0.02	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	D	mg/l	0.039	0.0005	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	0.042	Yes	1	No	1	No	1.96	No
Manganese	7439-96-5	T	mg/l	0.22	0.005	0.042	Yes	1	No	1	No	1.96	No
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	0.000017	Yes	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	0.016	0.001	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	< 0.002	Yes	0.005	No	0.01	No	0.903	No
Selenium	7782-49-2	T	mg/l	0.0011	0.005	< 0.002	No	0.005	No	0.01	No	0.903	No
Silver	7440-22-4	D	mg/l	0.00016	0.0025	< 0.002	No	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	0.00026	0.0025	< 0.002	No	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	< 0.002	Yes	0.01	No	0.02	No	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	< 0.002	Yes	0.01	No	0.02	No	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.067	0.002	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Zinc	7440-66-6	T	mg/l	0.11	0.002	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	0.06	No	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	0.03	No	0.16	No	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	0.004	Yes	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	0.004	Yes	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--	0.194	No
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--	0.194	Yes
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.32	0.85	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	--	--	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	4200	No	860	No	310	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	150	No	14	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	920	No	360	No	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	--	--	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not detected in any samples), the maximum non-detect was used. All concentrations divided by 10 to account for dilution.

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.32	0.85	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	4200	No	860	No	310	No
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	150	No	14	Yes	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	920	No	360	No	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	2.1	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	0.66	No	0.53	No	0.035	Yes
Atrazine	1912-24-9	N	ug/l	--	4.25	82	No	9	No	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	180	No	14	No	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	--	--	0.16	No
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	--	--	0.16	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	76	No	17	Yes	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	--	1.7	190	No	15	No	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	4.3	No	1.8	No	120	No
Fluorene	86-73-7	N	ug/l	0.32	0.85	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	2.9	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	--	--	0.16	Yes
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	4.8	0.36	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	46	No	3.7	No	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	--	--	3500	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	25000	No	4500	No	23	No
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	53	0.05	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	200	No	20	No	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	--	0.1	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	--	0.1	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	8400	No	930	No	2	No

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	1.5	Yes	2.8	Yes	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	10	No	60	No	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	100	No	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	10	Yes	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	0.049	Yes	1.7	No	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	30	No	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	2	Yes	30	No	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	0.03	Yes	2.2	No	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	0.12	Yes	0.13	Yes	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.32	0.85	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	4	Yes	4	Yes	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	1.7	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	0.005	Yes	0.51	No	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	3.3	No	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	0.03	Yes	0.04	Yes	19	No	15	Yes
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	1	0.85	20	No	30	No	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	0.2	No	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	0.55	No	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	0.071	Yes	0.076	Yes	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	9.9	No	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	0.9	No	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	0.58	Yes	16	Yes	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	0.95	No	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	0.4	No	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	0.8	No	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	68	No	130	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	57	No	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	0.6	No	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	0.022	Yes	1.6	No	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	--	--	36.9	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--	5.8	No
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	0.33	0.85	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	0.03	Yes	0.2	No	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	7.6	No	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--	11	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	0.5	No	2.5	No	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	--	--	4.4	No	199	No	7600	No
Fluorene	86-73-7	N	ug/l	0.32	0.85	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--	43.4	No
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	3.7	No	46	No	3550	No
Phenol	108-95-2	N	ug/l	4.55	4.2	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	0.3	Yes	87.6	No	220	No
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	--	--	--	--	--	--	175	No
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	42	0.05	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	91	0.1	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions												
Ammonia Nitrogen	7664-41-7	T	mg/l	28	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.00796	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.00746	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.00147	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	10.4	--	--	--	--	--	--	--	--
Gases												
Carbon Dioxide	124-38-9	N	mg/l	12.4	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	1840	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	0.982	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.229	--	--	--	--	--	--	--	--
General Chemistry												
Total Suspended Solids	ARC-TSS	T	mg/l	1.93	--	--	--	--	--	--	--	--
Metals												
Aluminum	7429-90-5	D	mg/l	0.0344	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.0485	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.00138	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.00148	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.00165	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.00181	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.0481	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.0492	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000274	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000276	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.000201	0.030	No	0.0024	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.000262	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	7.44	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	7.29	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.0113	1.3	No	0.44	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.0121	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.00162	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.00163	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.00105	0.048	No	0.029	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.00177	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	0.743	1	No	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	0.772	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.00597	0.24	No	0.051	No	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0159	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	5.61	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	5.53	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.0262	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.0259	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.0000169	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.0000304	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.00588	0.21	No	0.013	No	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.0059	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	26.3	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	26.2	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.000802	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.000773	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.000346	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.000347	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	149	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	148	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.0007	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.0007	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.00242	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.00271	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.0119	0.30	No	0.079	No	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.024	--	--	--	--	--	--	--	--
Organochlorine Pesticides												
4,4-DDD	72-54-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	0.00657	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	0.0327	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Other												
Sulfide	18496-25-8	N/T	mg/l	0.436	--	--	--	--	--	--	--	--
Total Organic Carbon												
Total Organic Carbon	ARC-TOC	N	mg/l	20.1	--	--	--	--	--	--	--	--
Polychorinated Biphenyls												
Aroclor 1016	12674-11-2	N	ug/l	0.019	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.0226	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.0482	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.143	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.0356	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.0446	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	0.019	--	--	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.030	No	0.0023	No	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	1.4	No	0.18	No	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.040	No	0.024	No	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.24	No	0.051	No	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.21	No	0.013	No	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.30	No	0.079	No	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	0.003	No
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	0.75	No	0.087	No
Antimony	7440-36-0	D	mg/l	0.0056	No	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0056	No	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	0.0050	No	0.0016	No
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	1.4	No	0.18	No
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--	1	No
Lead	7439-92-1	D	mg/l	--	--	--	--	0.21	No	0.0081	No
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.05	No	0.1	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.05	No	0.1	No	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.61	No	4.6	No	1.2	No	0.13	No
Nickel	7440-02-0	T	mg/l	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	7.4	No	26	No	0.3	No	0.3	No
Zinc	7440-66-6	T	mg/l	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.008	No	0.014	No	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	No
Endosulfan I	959-98-8	N	ug/l	20	No	30	No	0.22	No	0.056	No
Endosulfan II	33213-65-9	N	ug/l	20	No	40	No	0.22	No	0.056	No
Endosulfan sulfate	1031-07-8	N	ug/l	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	0.03	No	0.03	No	0.086	No	0.036	No
Endrin aldehyde	7421-93-4	N	ug/l	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	No
Heptachlor epoxide	1024-57-3	N	ug/l	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	No
Methoxychlor	72-43-5	N	ug/l	0.02	No	0.02	No	--	--	0.03	No
Toxaphene	8001-35-2	N	ug/l	0.0007	Yes	0.00071	Yes	0.73	No	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	25	Yes	140	No	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	No	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.14	No	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	< 0.008	No	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	< 0.008	No	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.0025	No	0.048	No	0.34	No	0.00969	No
Arsenic	7440-38-2	T	mg/l	0.0025	No	0.048	No	0.34	No	0.00969	No
Barium	7440-39-3	D	mg/l	0.05	No	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.05	No	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	< 0.008	No	0.024	No	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	< 0.008	No	0.024	No	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.0051	No	0.0232	No	0.0364	No	7.22	No
Copper	7440-50-8	T	mg/l	0.0051	No	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	D	mg/l	0.71	Yes	1	No	1	No	126	No
Iron	7439-89-6	T	mg/l	0.71	Yes	1	No	1	No	126	No
Lead	7439-92-1	D	mg/l	< 0.002	Yes	0.0167	No	0.3182	No	--	--
Lead	7439-92-1	T	mg/l	< 0.002	Yes	0.0167	No	0.3182	No	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.042	No	1	No	1	No	1.96	No
Manganese	7439-96-5	T	mg/l	0.042	No	1	No	1	No	1.96	No
Mercury	7439-97-6	D	mg/l	0.000017	No	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	< 0.002	No	0.005	No	0.01	No	0.903	No
Selenium	7782-49-2	T	mg/l	< 0.002	No	0.005	No	0.01	No	0.903	No
Silver	7440-22-4	D	mg/l	< 0.002	No	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	< 0.002	No	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	< 0.002	No	0.01	No	0.02	No	--	--
Thallium	7440-28-0	T	mg/l	< 0.002	No	0.01	No	0.02	No	--	--
Vanadium	7440-62-2	D	mg/l	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.012	No	0.3039	No	0.3014	No	55.3	No
Zinc	7440-66-6	T	mg/l	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	0.06	No	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	0.03	No	0.16	No	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	0.004	No	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	0.004	No	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	0.194	No
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	0.194	No
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds												
1,1-Biphenyl	92-52-4	N	ug/l	0.706	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.282	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	1.41	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	0.706	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	9.58	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	2.84	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	0.141	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	0.0997	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.29	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	0.706	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	2.84	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.242	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	1.98	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	0.706	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	1.41	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	0.706	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	0.706	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	1.63	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	0.706	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	6.42	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	1.41	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	2.84	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.16	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	0.141	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	0.632	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.142	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	0.706	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4.64	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.0355	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.0463	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.0549	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	0.152	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.0314	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	0.284	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	0.284	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	6.56	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	0.284	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.503	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.0822	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.0458	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	0.284	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	0.284	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	0.284	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.703	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	1.41	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	0.214	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.148	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	0.706	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.0706	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	3.35	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	0.706	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.0377	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	0.284	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	1.17	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	0.141	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.0706	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.157	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	1.41	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	2.84	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	0.324	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	1.04	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	0.247	--	--	--	--	--	--	--	--
Volatile Organic Compounds												
1,1,1-Trichloroethane	71-55-6	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	0.415	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	0.25	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.212	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	0.776	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.06	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	0.652	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	0.789	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	2.33	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	2.22	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	10.7	4200	No	860	No	310	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	0.05	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	0.1	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	0.445	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	0.1	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.132	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	0.05	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.0608	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	0.05	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	0.393	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.0963	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.272	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	4.8	150	No	14	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	1.05	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	0.788	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	0.25	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.0679	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	11.1	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	21.1	920	No	360	No	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.0555	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	0.05	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.0419	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	0.426	--	--	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations divided by 10 to account for dilution.

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	--	--	--	--	--	--
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	4200	No	860	No	310	No
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	150	No	14	No	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	920	No	360	No	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	2.1	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.66	No	0.53	No	0.035	Yes
Atrazine	1912-24-9	N	ug/l	82	No	9	No	--	--
Benzaldehyde	100-52-7	N	ug/l	180	No	14	No	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	0.16	No
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	0.16	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	76	No	17	No	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	190	No	15	No	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	4.3	No	1.8	No	120	No
Fluorene	86-73-7	N	ug/l	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	2.9	No
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	0.16	No
Isophorone	78-59-1	N	ug/l	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	46	No	3.7	No	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	--	--	--	--	3500	No
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	25000	No	4500	No	23	No
1,2-Dichloropropane	78-87-5	N	ug/l	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	200	No	20	No	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	8400	No	930	No	2	No

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	1.5	No	2.8	No	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	10	No	60	No	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	100	No	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	10	No	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	0.049	Yes	1.7	No	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	30	No	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	2	Yes	30	No	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	0.03	Yes	2.2	No	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.12	No	0.13	No	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	4	No	4	No	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.005	Yes	0.51	No	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	3.3	No	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	0.03	Yes	0.04	Yes	19	No	15	No
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	20	No	30	No	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.2	No	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.55	No	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.071	No	0.076	No	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	9.9	No	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.9	No	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	0.58	Yes	16	No	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.95	No	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.4	No	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.8	No	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	68	No	130	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	57	No	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.6	No	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	0.022	Yes	1.6	No	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--	36.9	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	5.8	No
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	0.03	Yes	0.2	No	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	7.6	No	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--	11	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	0.5	No	2.5	No	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	4.4	No	199	No	7600	No
Fluorene	86-73-7	N	ug/l	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	43.4	No
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	--	--	3.7	No	46	No	3550	No
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	--	--	0.3	No	87.6	No	220	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--	175	No
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions													
Antimony	7440-36-0	T	mg/l	0.0016	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.36	No	0.19	No	--	--	--	--
Barium	7440-39-3	T	mg/l	0.0811	--	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	40.1	No	7.6	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	0.030	No	0.0024	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.0065	--	1.349	No	0.438	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0027	0.0024	0.048	No	0.029	No	--	--	--	--
Iron	7439-89-6	T	mg/l	2.22	--	1	Yes	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0082	--	0.24	No	0.051	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	9.5	No	4.0	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	0.0022	No	0.0011	No	0.012	No	--	--
Nickel	7440-02-0	T	mg/l	0.0049	--	0.21	No	0.013	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	0.0017	1	No	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	5	No	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	0.30	No	0.079	No	--	--	--	--
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--	15	No

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Antimony	7440-36-0	T	mg/l	0.0016	--	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.34	No	0.15	No	--	--
Barium	7440-39-3	T	mg/l	0.0811	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	40.1	No	7.6	No	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	0.030	No	0.0023	No	--	--
Chromium	7440-47-3	T	mg/l	0.0065	--	1.401	No	0.182	No	--	--
Copper	7440-50-8	T	mg/l	0.0027	0.0024	0.040	No	0.024	No	--	--
Iron	7439-89-6	T	mg/l	2.22	--	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0082	--	0.24	No	0.051	No	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	9.5	No	4.0	No	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	0.0012	No	0.00065	No	0.012	No
Nickel	7440-02-0	T	mg/l	0.0049	--	0.21	No	0.013	No	--	--
Selenium	7782-49-2	T	mg/l	--	0.0017	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	0.30	No	0.079	No	--	--
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Antimony	7440-36-0	T	mg/l	0.0016	--	--	--	--	--	12000	No
Arsenic	7440-38-2	T	mg/l	0.0024	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.0811	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.0065	--	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0027	0.0024	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.22	--	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0082	--	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.0049	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	0.0017	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	--	--	--	--	0.003	No
Zinc	7440-66-6	T	mg/l	0.0224	--	--	--	--	--	--	--
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions													
Antimony	7440-36-0	T	mg/l	0.0016	--	0.0056	No	0.64	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Barium	7440-39-3	T	mg/l	0.0811	--	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	--	--	--	--	0.0050	No	0.0016	No
Chromium	7440-47-3	T	mg/l	0.0065	--	--	--	--	--	1.4	No	0.18	No
Copper	7440-50-8	T	mg/l	0.0027	0.0024	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.22	--	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	T	mg/l	0.0082	--	--	--	--	--	0.21	No	0.0081	Yes
Manganese	7439-96-5	T	mg/l	0.315	--	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	--	--	--	--	0.0014	No	0.00077	No
Nickel	7440-02-0	T	mg/l	0.0049	--	0.61	No	4.6	No	1.2	No	0.13	No
Selenium	7782-49-2	T	mg/l	--	0.0017	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	--	--	--	--	0.021	No	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	0.00024	Yes	0.00047	Yes	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	7.4	No	26	No	0.3	No	0.3	No
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions													
Antimony	7440-36-0	T	mg/l	0.0016	--	< 0.008	No	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.0025	No	0.048	No	0.34	No	0.00969	No
Barium	7440-39-3	T	mg/l	0.0811	--	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	< 0.004	No	--	--	--	--	0.0443	No
Boron	7440-42-8	T	mg/l	0.446	--	--	--	--	--	--	--	361	No
Cadmium	7440-43-9	T	mg/l	--	0.001	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Chromium	7440-47-3	T	mg/l	0.0065	--	< 0.008	No	--	--	--	--	561	No
Copper	7440-50-8	T	mg/l	0.0027	0.0024	0.0051	No	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	T	mg/l	2.22	--	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	T	mg/l	0.0082	--	< 0.002	Yes	0.0167	No	0.3182	No	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	0.042	Yes	1	No	1	No	1.96	No
Mercury	7439-97-6	T	mg/l	--	0.0002	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	T	mg/l	0.0049	--	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Selenium	7782-49-2	T	mg/l	--	0.0017	< 0.002	No	0.005	No	0.01	No	0.903	No
Silver	7440-22-4	T	mg/l	--	0.001	< 0.002	No	0.005	No	0.005	No	0.529	No
Thallium	7440-28-0	T	mg/l	0.001	--	< 0.002	No	0.01	No	0.02	No	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	25	No	140	No	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 7. Screening of IRM Sediment Data Against Human Health Benchmarks

Analyte	Units	Residential Soil SL	Recreational Sediment SL	SD-02	SD-06
Total Organic Carbon	percent	--	--	11.1	32.9
Polynuclear Aromatics					
Acenaphthene	mg/kg	360	10500	0.47 J	ND
Acenaphthylene	mg/kg	360	10500	ND	ND
Anthracene	mg/kg	1800	52300	0.57 J	ND
Benzo(a)anthracene	mg/kg	0.16	32.5	2.4	0.64 J
Benzo(a)pyrene	mg/kg	0.016	3.35	3.7	0.59 J
Benzo(b)fluoranthene	mg/kg	0.16	33.5	6.4	5.8
Benzo(g,h,i)perylene	mg/kg	1800	52300	2.8	0.5 J
Benzo(k)fluoranthene	mg/kg	1.6	335	2.2	0.51 J
Carbazole	mg/kg	240	6970	0.27 J	ND
Chrysene	mg/kg	16	3350	3.2	0.65 J
Dibenzo(a,h)anthracene	mg/kg	0.016	3.35	0.79 J	ND
Dibenzofuran	mg/kg	7.3	213	0.33 J	ND
Diethyl phthalate	mg/kg	5100	147000	ND	0.5 J
Fluoranthene	mg/kg	240	6970	3.1	0.9 J
Fluorene	mg/kg	240	6970	0.4 J	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	0.16	33.5	2.1	0.37 J
2-Methylnaphthalene	mg/kg	24	697	0.61 J	ND
Naphthalene	mg/kg	3.8	2960	0.9 J	ND
Phenanthrene	mg/kg	1800	52300	2.1	0.46 J
Pyrene	mg/kg	180	5230	3.1	0.77 J
Pesticides/PCBs					
Chlordane	mg/kg	1.7	50.6	ND	ND
4,4´-DDD	mg/kg	2.3	65.9	0.97	ND
4,4´-DDE	mg/kg	2	57.7	ND	ND
4,4´-DDT	mg/kg	1.9	55	ND	ND
Dieldrin	mg/kg	0.034	0.989	ND	ND
Endrin	mg/kg	1.9	55.3	ND	ND
Heptachlor	mg/kg	0.13	4.36	ND	ND
Heptachlor epoxide	mg/kg	0.07	2.16	ND	ND
PCBs	mg/kg	0.23	7.11	ND	ND
Metals					
Antimony	mg/kg	3.1	91.3	4.5	1.2 J
Arsenic	mg/kg	0.68	19.8	34.9	8.8
Beryllium	mg/kg	16	456	1.9	0.91 U
Cadmium	mg/kg	7.1	208	9	2.1
Chromium	mg/kg	12000	342000	157	36.8
Copper	mg/kg	310	9130	182	57.2
Lead	mg/kg	400	--	689	131
Mercury	mg/kg	1.1	1960	0.71 J	0.31 J
Nickel	mg/kg	150	4560	62.4	22.4
Selenium	mg/kg	39	1140	3.2	1.7
Silver	mg/kg	39	1140	3.2	1.1
Thallium	mg/kg	0.078	2.28	7.6 U	2.3 U
Zinc	mg/kg	2300	68400	2190	561

Notes:

Shaded values exceed residential soil SL.
Underlined values exceed recreational sediment SL.

-- = not available
mg/kg = milligrams per kilogram
ND = not detected
SL = screening level
J = estimated result
U = not detected

APPENDIX L

Site-Specific Screening Level Development

Recreator Screening Levels for Surface Water

To conduct a human health screening evaluation that better represents the potential exposures that might be associated with IRM, the concentration of each analyte detected in the surface water data set was compared to a risk-based concentration protective of recreators contacting surface water, calculated using the Regional Screening Level (RSL) calculator from the USEPA (https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search). The input parameter values used to calculate surface water screening levels are summarized in the attached **Table 1**. The resulting surface water screening levels from the RSL Calculator are shown in **Appendix I**. Analytes with concentrations above these surface water screening levels are also identified in **Appendix I**.

For some analytes for which no toxicity values are available based on the USEPA hierarchy for selecting toxicity values in risk assessment (USEPA 2003), the screening level for a structurally similar compound was used to represent the potential toxicity of that analyte solely for identifying COPCs. These representative analytes are listed in **Table 2** below.

Table 2. Structurally Similar Analytes for Surface Water Screening Levels

Analyte Without Toxicity Value	Represented by Screening Level for
Acenaphthylene	Acenaphthene
Carbazole	Fluorene
Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-
Ethyl Chloride	1,2-Dichloroethane
Methyl Isobutyl Ketone	Methyl Ethyl Ketone
Phenanthrene	Anthracene

Recreator Screening Levels for Sediment

To conduct a human health screening evaluation that better represents the potential exposures that might be associated with IRM, the concentration of each analyte detected in the sediment data set was compared to a risk-based concentration protective of recreators contacting sediment, calculated using the Regional Screening Level (RSL) calculator from the USEPA (https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search). The input parameter values used to calculate sediment screening levels are summarized in the attached **Table 3**. The resulting sediment screening levels from the RSL Calculator are shown in **Appendix I**. Analytes with concentrations above these sediment screening levels are also identified in **Appendix I**.

For some analytes for which no toxicity values are available based on the USEPA hierarchy for selecting toxicity values in risk assessment (USEPA 2003), the screening level for a structurally similar compound

was used to represent the potential toxicity of that analyte solely for identifying COPCs. These representative analytes are listed in **Table 4** below.

Table 4. Structurally Similar Analytes for Sediment Screening Levels

Analyte Without Toxicity Value	Represented by Screening Level for
Acenaphthylene	Acenaphthene
Benzo(ghi)perylene	Anthracene
Carbazole	Fluorene
Endosulfan I, II, Endosulfan Sulfate	Endosulfan
Hexachlorocyclohexane, Delta-	Hexachlorocyclohexane, Gamma-
Phenanthrene	Anthracene

1 REFERENCES

USEPA. 2003. Human Health Toxicity Values in Superfund Risk Assessments. OSWER Directive 9285.7-53. December 5.

Table 1. Recreator Equation Inputs for Surface Water Screening Levels

Site-specific Screening Levels Recreator Equation Inputs for Surface Water	
Variable	**Value**
TR (target cancer risk) unitless	0.000001
THQ (target hazard quotient) unitless	0.1
ED_{rec} (exposure duration - recreator) year	26
$ED_{rec\text{-}c}$ (exposure duration - child) year	6
$ED_{rec\text{-}a}$ (exposure duration - adult) year	20
$ED_{0\text{-}2}$ (mutagenic exposure duration) year	2
$ED_{2\text{-}6}$ (mutagenic exposure duration) year	4
$ED_{6\text{-}16}$ (mutagenic exposure duration) year	10
$ED_{16\text{-}30}$ (mutagenic exposure duration) year	10
LT (lifetime - recreator) year	70
EF (exposure frequency) day/year	12
$EF_{rec\text{-}c}$ (exposure frequency - child) day/year	12
$EF_{rec\text{-}a}$ (exposure frequency - adult) day/year	12
$EF_{0\text{-}2}$ (mutagenic exposure frequency) day/year	12
$EF_{2\text{-}6}$ (mutagenic exposure frequency) day/year	12
$EF_{6\text{-}16}$ (mutagenic exposure frequency) day/year	12
$EF_{16\text{-}30}$ (mutagenic exposure frequency) day/year	12
$ET_{rec\text{-}adj}$ (age-adjusted exposure time) hour/event	2
$ET_{rec\text{-}madj}$ (mutagenic age-adjusted exposure time) hour/event	2
$ET_{rec\text{-}c}$ (exposure time - child) hour/event	2
$ET_{rec\text{-}a}$ (exposure time - adult) hour/event	2
$ET_{0\text{-}2}$ (mutagenic exposure time) hour/event	2
$ET_{2\text{-}6}$ (mutagenic exposure time) hour/event	2
$ET_{6\text{-}16}$ (mutagenic exposure time) hour/event	2
$ET_{16\text{-}30}$ (mutagenic exposure time) hour/event	2
$EV_{rec\text{-}c}$ (child) events/day	1
$EV_{rec\text{-}a}$ (adult) events/day	1
$EV_{0\text{-}2}$ (mutagenic) events/day	1
$EV_{2\text{-}6}$ (mutagenic) events/day	1
$EV_{6\text{-}16}$ (mutagenic) events/day	1
$EV_{16\text{-}30}$ (mutagenic) events/day	1
$BW_{rec\text{-}c}$ (body weight - child) kg	15
$BW_{rec\text{-}a}$ (body weight - adult) kg	80
$BW_{0\text{-}2}$ (mutagenic body weight) kg	15
$BW_{2\text{-}6}$ (mutagenic body weight) kg	15
$BW_{6\text{-}16}$ (mutagenic body weight) kg	80
$BW_{16\text{-}30}$ (mutagenic body weight) kg	80
$SA_{rec\text{-}c}$ (skin surface area - child) cm^2	6365
$SA_{rec\text{-}a}$ (skin surface area - adult) cm^2	6365
$SA_{0\text{-}2}$ (mutagenic skin surface area) cm^2	6365
$SA_{2\text{-}6}$ (mutagenic skin surface area) cm^2	6365
$SA_{6\text{-}16}$ (mutagenic skin surface area) cm^2	19652
$SA_{16\text{-}30}$ (mutagenic skin surface area) cm^2	19652
$IFW_{rec\text{-}adj}$ (age-adjusted water intake rate) L/kg	1.578
$IFWM_{rec\text{-}adj}$ (mutagenic age-adjusted water intake rate) L/kg	6.996
$DFW_{rec\text{-}adj}$ (age-adjusted dermal factor) cm^2-event/kg	89508
$DFWM_{rec\text{-}adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	280856
$IRW_{rec\text{-}c}$ (water intake rate - child) L/hr	0.12
$IRW_{rec\text{-}a}$ (water intake rate - adult) L/hr	0.071
$IRW_{0\text{-}2}$ (mutagenic water intake rate) L/hr	0.12
$IRW_{2\text{-}6}$ (mutagenic water intake rate) L/hr	0.12
$IRW_{6\text{-}16}$ (mutagenic water intake rate) L/hr	0.071
$IRW_{16\text{-}30}$ (mutagenic water intake rate) L/hr	0.071
l_{sc} (apparent thickness of stratum corneum) cm	0.001

Table 3. Recreator Equation Inputs for Sediment Screening Levels

Site-specific Screening Levels Recreator Equation Inputs for Sediment (USEPA uses soil exposure assumptions to evaluate sediment contact by a recreator)	
Variable	**Value**
TR (target cancer risk) unitless	0.000001
THQ (target hazard quotient) unitless	0.1
SA_{rec-c} (skin surface area - child) cm^2/day	2373
SA_{rec-a} (skin surface area - adult) cm^2/day	6032
SA_{0-2} (skin surface area - mutagenic) cm^2/day	2373
SA_{2-6} (skin surface area - mutagenic) cm^2/day	2373
SA_{6-16} (skin surface area - mutagenic) cm^2/day	6032
SA_{16-30} (skin surface area - mutagenic) cm^2/day	6032
LT (lifetime - recreator) year	70
$IFS_{rec-adj}$ (age-adjusted soil ingestion factor) mg/kg	1260
$DFS_{rec-adj}$ (age-adjusted soil dermal factor) mg/kg	3544.8
$IFSM_{rec-adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg	5720
$DFSM_{rec-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg	14683.2
EF_{0-2} (exposure frequency) day/year	12
EF_{2-6} (exposure frequency) day/year	12
EF_{6-16} (exposure frequency) day/year	12
EF_{16-30} (exposure frequency) day/year	12
EF_{rec-c} (exposure frequency - child) day/year	12
EF_{rec-a} (exposure frequency - adult) day/year	12
EF_{rec} (exposure frequency - recreator) day/year	12
IRS_{0-2} (soil intake rate) mg/day	200
IRS_{2-6} (soil intake rate) mg/day	200
IRS_{6-16} (soil intake rate) mg/day	100
IRS_{16-30} (soil intake rate) mg/day	100
IRS_{rec-c} (soil intake rate - child) mg/day	200
IRS_{rec-a} (soil intake rate - adult) mg/day	100
ED_{0-2} (exposure duration) year	2
ED_{2-6} (exposure duration) year	4
ED_{6-16} (exposure duration) year	10
ED_{16-30} (exposure duration) year	10
ED_{rec-c} (exposure duration - child) year	6
ED_{rec-a} (exposure duration - adult) year	20
ED_{rec} (exposure duration - recreator) year	26
ET_{0-2} (exposure time) hr/day	2
ET_{2-6} (exposure time) hr/day	2
ET_{6-16} (exposure time) hr/day	2
ET_{16-30} (exposure time) hr/day	2
ET_{rec-c} (exposure time - child) hr/day	2
ET_{rec-a} (exposure time - adult) hr/day	2
ET_{rec} (exposure time - recreator) hr/day	2
BW_{0-2} (body weight) kg	15
BW_{2-6} (body weight) kg	15
BW_{6-16} (body weight) kg	80
BW_{16-30} (body weight) kg	80
BW_{rec-c} (body weight - child) kg	15
BW_{rec-a} (body weight - adult) kg	80
AF_{0-2} (skin adherence factor) mg/cm^2	0.2
AF_{2-6} (skin adherence factor) mg/cm^2	0.2
AF_{6-16} (skin adherence factor) mg/cm^2	0.07
AF_{16-30} (skin adherence factor) mg/cm^2	0.07
AF_{rec-c} (skin adherence factor - child) mg/cm^2	0.2
AF_{rec-a} (skin adherence factor - adult) mg/cm^2	0.07
$City_{PEF}$ (Climate Zone) Selection	Chicago, IL (7)
A_s (acres)	0.5
Q/C_{wp} (inverse of the ratio of the geometric mean air concentration to the emission flu	98.43071437
PEF (particulate emission factor) m^3/kg	1560521177
A (PEF Dispersion Constant)	16.8653
B (PEF Dispersion Constant)	18.7848
C (PEF Dispersion Constant)	215.0624
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.65
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.182
$City_{VF}$ (Climate Zone) Selection	Chicago, IL (7)
A_s (acres)	0.5
Q/C_{vol}(inverse of the ratio of the geometric mean air concentration to the emission flu	98.43071437
foc (fraction organic carbon in soil) g/g	0.006
p_b (dry soil bulk density) g/cm^3	1.5
p_s (soil particle density) g/cm^3	2.65
n (total soil porosity) L_{pore}/L_{soil}	0.43396
$_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396
$_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	819936000
A (VF Dispersion Constant)	16.8653
B (VF Dispersion Constant)	18.7848
C (VF Dispersion Constant)	215.0624
$City_{VF\ mass\text{-}loading}$ (Climate Zone) Selection	Chicago, IL (7)
VF_{ml} (volitization factor - mass-limit) m^3/kg	179348.636
Q/C_{vol} (inverse of the ratio of the geometric mean air concentration to the emission fl	98.43071437
A_s (acres)	0.5
T (exposure interval) yr	26
d_s (depth of source) m	0.3
p_b (dry soil bulk density) g/cm^3	1.5
A (VF Dispersion Constant - Mass Limit)	16.8653
B (VF Dispersion Constant - Mass Limit)	18.7848
C (VF Dispersion Constant - Mass Limit)	215.0624

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