APRIL 2018
LONG-TERM MONITORING EVENT REPORT

CHEMICAL INSECTICIDE CORPORATION SUPERFUND SITE
OPERABLE UNIT 4 – GROUNDWATER
30 WHITMAN AVENUE
EDISON TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY

Prepared for
U.S. Army Corps of Engineers
Kansas City District

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LIST OF ACRONYMS AND ABBREVIATIONS

AGI	Additional Groundwater Investigation
ARAR	Applicable or Relevant and Appropriate Requirement
BGS	below ground surface
BHC	alpha-hexachlorocyclohexane
BTOC	below top of casing
CEA	Classification Exception Area
CIC	Chemical Insecticide Corporation
CLP	Contract Laboratory Program
CM/SEC	Centimeters/second
COC	Contaminant of Concern
COV	Coefficient of Variation
CRQL	Contract Required Quantitation Limit
CTI	CTI and Associates, Inc
DESA	Division of Environmental Science and Assessment
1,2-DCA	1,2-Dichloroethane
1,2-DCP	1,2-Dichloropropane
DO	Dissolved Oxygen
DOT	Department of Transportation
DQCR	Daily Quality Control Report
EDD	Electronic Data Deliverable
FASTAC	Field and Analytical Services Technical Advisory Committee
FT	Foot
FT/YR	Feet per year
HWSB	Hazardous Waste Support Branch
I	Increasing
KCD	Kansas City District
LDC	Laboratory Data Consultants
LTM	Long-Term Monitoring
µg/L	Micrograms per Liter
MCL	Maximum Contaminant Level
ML/MIN	Milliliters/Minute
MSL	Mean Sea Level
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAPL	non-aqueous phase liquid
NJDEP	New Jersey Department of Environmental Protection
NJDOT	New Jersey Department of Transportation
NPL	National Priorities List
NT	No Trend
ORP	Oxidation Reduction Potential
OU	Operable Unit

PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCE	Tetrachloroethene
PD	Probably Decreasing
PI	Probably Increasing
PSEG	Public Service Electric and Gas
QA	Quality Assurance
QC	Quality Control
RG	Remediation Goal
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RSCC	Regional Sample Control Coordinator
S	Statistic/Stable
SDV	SDV IOI, JV
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
TOC	Top of Casing
UFP-QAPP	Uniform Federal Policy – Quality Assurance Project Plan
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds

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1.0 INTRODUCTION

This report summarizes long-term monitoring (LTM) activities performed by SDV IOI, JV (SDV) at the Chemical Insecticide Corporation (CIC) Site in Edison Township, Middlesex County, New Jersey, for the U.S. Army Corp of Engineers, Kansas City District (USACE-KCD), under Contract No. W912DQ-12-D-3012, Delivery Order 0002. USACE-KCD provides technical assistance to U.S. Environmental Protection Agency (USEPA) Region 2 at the CIC Site under the Inter-Agency Agreement.

Ongoing groundwater monitoring is being conducted at the CIC Site as part of groundwater Operable Unit (OU) 4. OU4, which consists of LTM and institutional controls, is the final remedy to address contaminated groundwater at the CIC Site. Groundwater sampling activities were conducted in accordance with the approved Project-Specific Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) completed for this project (SDV, 2016). In accordance with the SDV UFP-QAPP, a new bedrock monitoring well (BF-2BR) was installed along the northeastern property line to assess Site COCs in groundwater within the bedrock formation. Pertinent details of the monitoring well installation are outlined in Section 3.0.

1.1. PURPOSE AND SCOPE

LTM is being conducted at the CIC Site to monitor the nature and extent of contamination and assess the migration and potential attenuation of the plume over time. The sampling frequency of the LTM program is currently scheduled to occur every 15 months. This report documents the results of the April 2018 LTM Event, which is the 16th LTM Event conducted at the CIC Site since the LTM program commenced in 2007. This report also documents the installation and development of monitoring well BF-2BR in February 2018.

Groundwater samples were collected from the monitoring wells established as part of the current LTM network which consists of 22 wells (including the recently installed BF-2BR monitoring well) within the CIC Study Area. In addition, inspections were conducted and water levels were collected from four other site wells.

1.2. REPORT ORGANIZATION

Following this introduction, the remaining major sections of this LTM Report are organized as follows:

- **Section 2.0 – Site Background and Physical Setting:** This section summarizes investigation and remedial activities conducted to date and describes the physical setting of the CIC study area.
- **Section 3.0 – Monitoring Well Installation Operations:** This section summarizes the field work completed during the installation of monitoring well BF-2BR.

- **Section 4.0 – Monitoring Event Activities:** This section summarizes the field work completed during this LTM Event.
- **Section 5.0 – Monitoring Event Results:** This section summarizes the monitoring data collected and presents the groundwater analytical results.
- **Section 6.0 – Quality Assurance/Quality Control:** This section describes the QA/QC procedures conducted during this LTM event.
- **Section 7.0 – Conclusions and Recommendations:** This section discusses the conclusions based on the groundwater monitoring data and analytical results from this LTM Event and summarizes groundwater data trends for the CIC Site. This section also discusses any recommendations based on the data evaluation and recommendations to the LTM schedule for the project.

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2.0 SITE BACKGROUND AND SITE CONDITIONS

A summary of past site operations, physical setting, and previous investigation and remedial activities conducted at the CIC Site are summarized below. The CIC Study Area and location of the existing monitoring well network are presented on Figure 1.

2.1. SITE DECRIPTION AND LOCATION

The CIC Site is a fenced 5.7-acre property located at 30 Whitman Avenue in Edison Township, Middlesex County, New Jersey (see Figure 1). It is bounded on the north by Route 287, on the east by an approximate 35-foot wide Public Service Electric and Gas (PSEG) easement and active commercial properties owned by Northeast Foods (formally Metroplex) and Total TEC, on the south by a large warehouse-type structure owned by Prologis (formerly owned by Allied Chemical Company and Morris Companies), and on the west by a vacant industrial property formerly owned by Muller Machinery and a Conrail/CSX railroad right-of-way. The CIC Study Area encompasses the Site and these surrounding neighboring properties where investigations and remedial activities have been conducted, which is a total of approximately 70-acres. The fenced portion of the CIC Site is currently being operated by the City of Edison as a park which now include both a fenced dog park, an unfenced children's play area and paved parking. The CIC Site and Study Area are depicted on Figure 1.

The nearest residential properties are located approximately 300 to 400 yards away from the CIC Site and are separated from the Site by either Route 287 to the north or the railroad right-of-way to the southwest. There are no permanent surface water bodies on the CIC Site. After heavy precipitation, the surface water runoff drains toward the northeast corner of the Site where it discharges into an underground conduit, which flows into an unnamed tributary of Mill Brook. Mill Brook, in turn, flows into the Raritan River approximately four miles downstream of the Site. Both the unnamed tributary and Mill Brook run through residential areas. The residents near these tributaries and the residents directly surrounding the CIC Site all obtain potable water from a public water supply system located approximately eight miles from the Site.

2.2. ENVIRONMENTAL SETTING

2.2.1. TOPOGRAPHY

The CIC Site is situated on a flat lying property, currently used by the City of Edison as a dog park, at an elevation of approximately 115 feet relative to mean sea level (msl). As a result of the OU2 soil remedy, this area is now graded and gently slopes to the east toward the former Metroplex Corporation property. Further east, the land surface flattens out and slopes very gently to the east-southeast. A steep grade sloping down to the roadbed of Interstate 287 (approximate elevation of 92 to 94 feet msl) is located immediately north of the CIC Site. To the west, the land surface rises gradually before sloping downward to the excavated Conrail/CSX railroad grade. Directly beyond

the fence to the south is an excavated railroad bed which was filled in during the OU2 remedy, and separates the CIC property from the former Morris Companies property.

2.2.2. HYDROLOGY

On a regional scale, the CIC Site occupies a high point in the northwest portion of the Mill Brook drainage basin. The ultimate receiving water body from Mill Brook is the Raritan River located approximately four miles southwest of the Site. Historical topographic maps and aerial photographs indicate that the Mill Brook watershed has undergone tremendous change over the past 50 years, experiencing a combination of expressway construction, business office, manufacturing, industrial, and residential development. In general, the CIC Study Area was once wetlands and substantial filling of the CIC Site is evident as early as 1939 (USEPA, 2009).

In the 1940's and 1950's, surface water originating on the CIC Site drained by overland runoff through several distinctly observable drainage ditches eastward through the unnamed tributary to Mill Brook. Prior to the installation of the interim cap in 1994, surface conditions at the CIC Site included puddles, ruts, and sumps in which standing water accumulated, particularly after heavy or persistent precipitation. Runoff from precipitation that did not infiltrate into CIC Site soils flowed to the unnamed tributary via a drainage ditch.

The average annual yearly precipitation total (May 2017 through April 2018) in New Brunswick is 52.88 inches, with August 2017 (7.63 inches) the wettest month, and September 2017 (1.78 inches) the driest. Precipitation is generally well distributed throughout the year. However, some year-to-year variation in amounts recorded in late summer and early autumn may result from the northward passage of storms originating in the tropics. During years in which these seasonal storms occur, annual precipitation totals tend to be higher than normal and intense rain for short periods increases. Based on rainfall-intensity return periods from 1913 through 1951 for Trenton, New Jersey, approximately 30 miles south of the CIC site, a rainfall intensity of 1 inch per hour for a duration of 2 hours may be expected once every 5 years (USEPA, 2009).

Currently, there is no uncontrolled drainage from the CIC Site and there has been no evidence of flooding observed during previous groundwater sampling events (SDV, 2016). Prior to the 2018 LTM Event, significate rain fall occurred. During the SDV Site reconnaissance for the BF-2BR well installation, no flooding or riling was overserved at the Site. As part of the restoration phase of the OU2 remedy, a headwall and culvert drainage structure were engineered and installed in the northeast portion of the property to direct storm water to the existing storm sewer line running along Interstate 287. This allows storm water to flow into the drainage swale adjacent to the southbound lane of Interstate 287. A riprap swale was constructed on Site to direct storm water to the drainage structure. A grass-lined drainage swale was also constructed to drain storm water to the riprap swale from the southern portion of the CIC Site. These surface drainage features are presented on Figure 1.

2.2.3. GEOLOGY

The CIC Study Area lies on the approximate boundary between the Atlantic Coastal Plain physiographic province and the Triassic Lowlands in the southeastern portion of the Piedmont physiographic province. Regionally, the Triassic Lowlands are characterized by underlying bedrock of northwestward sloping sedimentary bedrock deposits of shale, siltstone, and sandstone expressed at the surface by gently rolling lowlands. The sedimentary deposits are occasionally interrupted by basaltic lava flows and diabase intrusions which are more resistant to weathering than the sedimentary deposits and are subsequently expressed as topographic ridges. The Watchung Mountains, located approximately seven miles to the northwest, are the closest of these ridges. The coastal plain sediments consist in part of alternating layers of unconsolidated sands and clays, dipping gently toward the southeast (USEPA, 2009).

In the vicinity of the CIC Study Area, bedrock consists of the Brunswick Formation of the Triassic age Newark group. The Brunswick Formation typically consists of soft, reddish-brown shale with some interbedded siltstone and sandstone. The formation is often highly fractured and easily weathered to reddish-brown clay. There is typically a layer of weathered or fragmented shale overlying more competent bedrock. In the Coastal Plain province, bedrock is overlain by alternating layers of unconsolidated sands, gravels, and clays, which regionally include the Raritan and Magothy Formations. The Raritan and Magothy deposits mapped in the vicinity of the Site are very thin to absent and are not easily differentiated from overlying fluvio-glacial deposits (USGS, 2007).

Based on historical lithologic data, the geology below the CIC Study Area consists of the following:

- **Fill Materials** – Unconsolidated fill material, predominantly composed of medium to course sand, with gravel, silt and clay, is present in the upper 2 to 12 feet. A portion of the fill material within the source area was removed and replaced during the previous remedial excavation activities. Remedial excavation backfill consisted of common fill above the water table and New Jersey Department of Transportation (NJDOT) I-9 coarse sand material below the water table, between approximately 5 and 20 feet below ground surface (bgs).
- **Fluvio-glacial Unit** – Clays, silts, and gravel deposits of the Pennsauken Formation are present below the fill material from between 2 to 35 feet thick.
- **Weathered Bedrock** – Below the fluvio-glacial deposits are between 4 to 45 feet of clays and silts, which appears to be a weathering product of the underlying bedrock (Brunswick Formation). In general, this unit is approximately 15 feet thick below the CIC Study Area, and appears to function as a semi-confining layer.

- **Brunswick Formation** – Bedrock of the Brunswick Formation occurs between approximately 15 to 65 feet below grade with the CIC Study Area.

A geologic cross-section is presented on Figure 2.

2.2.4. HYDROGEOLOGY

Based on historical data, groundwater appears to occur in two separate water-bearing zones: An unconfined zone within the fill/fluvio-glacial units; and a partially confined zone within the bedrock formation; separated by the semi-confining weathered bedrock transition zone. Overall horizontal groundwater flow is generally to the southeast, with a localized northeast flow direction within the CIC Study Area, with a horizontal gradient typically ranging between 0.02 to 0.04 feet/feet. Groundwater flow within the shallow bedrock (upper 20 to 50 feet) appears to behave similarly to that of the overburden unconfined aquifer. The overall hydraulic gradient within the overburden aquifer for the CIC Study Area does not appear to have been affected by the OU2 remedial excavation (CTI, 2015).

Groundwater flow within the deeper bedrock aquifer is expected to behave more consistent with regional hydraulic flow, which is generally to the southeast. Vertical hydraulic gradient data for the April 2018 LTM Event is summarized in Section 5.2.

2.3. SITE HISTORY

CIC owned and operated the Site from 1954 to 1970. The Site was used for the formulating of, and possibly the manufacturing of, insecticides, fungicides, rodenticides, and herbicides. These formulating activities, combined with poor housekeeping, led to widespread chemical contamination at the Site, as well as migration of contaminants to offsite areas. At one time, the property consisted of approximately seven buildings used for the formulation/storage of pesticides and herbicides. Additionally, four lagoons existed along the eastern property boundary and were reportedly used to hold some of the facility's wastewater (USEPA, 2009).

In the mid-1960's, the Edison Department of Health and Human Resources became concerned about activity onsite due to numerous complaints from surrounding neighbors. In June 1966, the Edison Township Health Officer ordered the facility to stop discharging wastewater, oversaw disposal of leaking drums to eliminate an odor problem, and ordered the closing of the onsite lagoons. In August 1970, CIC declared bankruptcy. Subsequently, Piscataway Associates purchased the property and demolished the production facilities by 1975.

In 1983, the former CIC facility was included in a USEPA/NJDEP dioxin-screening program that identified and sampled potential dioxin-contaminated sites. Sampling revealed low-level dioxin contamination in some of the former process areas, while results from neighboring properties did not show any evidence of dioxin contamination. While conducting the sampling at the Site,

USEPA also collected additional samples for other commonly found pollutants. Data indicated widespread contamination onsite and limited contamination offsite (USEPA, 2009).

Based on the results of these investigations, USEPA initiated a remedial investigation (RI) at the Site in July 1987. In August 1990, USEPA included the CIC Site on the National Priorities List (NPL). Concurrent with the RI/FS, USEPA conducted several removal actions to mitigate risks associated with contaminated soil and surface water runoff from the Site. Additionally, while working on the Site-wide removal actions and investigations, USEPA selected and implemented an interim onsite remedy (OU1) and a final offsite remedy (OU3).

In September 1989, USEPA issued a ROD for OU1, selecting an interim remedial action to control contaminated runoff from the CIC Site. The remedy consisted of installing a fence around the Site, clearing and grading the Site, covering the Site with a high-density polyethylene surficial geo-cap liner to prevent infiltration of precipitation, and constructing a surface water runoff diversion system to collect uncontaminated surface water runoff from the cap and channel it to a drainage system. Construction of the interim remedy was completed in September 1994.

In March 1995, USEPA issued a ROD for OU3, selecting a remedy to address arsenic-contaminated soil and sediment in offsite creek areas. The remedy consisted of the excavation and offsite disposal of contaminated soil and sediment followed by restoration of offsite areas, stream beds, and wetlands. The OU3 remedy was completed in April 1997.

While proceeding with the OU1 and OU3 remedies, USEPA continued the RI/FS work for OU2 and OU4, collecting additional samples at the CIC Site and surrounding neighboring properties (the CIC Study Area) and evaluating alternatives for contaminated soil and groundwater. USEPA and NJDEP elected to proceed with the Site soil remedy (OU2) independent of the groundwater remedy (OU4) since the interim cap was approaching the end of its projected life span and additional work remained to complete the groundwater RI/FS.

In September 2000, USEPA issued a ROD for OU2, selecting a remedy to address contaminated soil for the CIC and Muller properties and portions of the former Metroplex and Morris Companies properties (the CIC Study Area). The remedy consisted of the excavation and offsite disposal of contaminated soil followed by restoration of the affected areas. The major objectives of the OU2 remedy were to reduce and eliminate the direct contact pathway for human exposure and the source of groundwater contamination. The excavation of contaminated on-Site and off-Site soils and sediments was expected to decrease the amount of contamination reaching groundwater and surface water over time. The OU2 remedy was completed in May 2005.

In December 2003, following completion of groundwater investigation work, USEPA issued a ROD for OU4, selecting a remedy to address groundwater contamination associated with the CIC Study Area. The remedy consists of a long-term groundwater monitoring plan and the

implementation of institutional controls. EPA invoked an Applicable or Relevant and Appropriate Requirements (ARARs) waiver due to technical impracticability. The basis for EPA's determination of technical impracticability are stated in the ROD. Usage of the groundwater within the approximate 50-acre area is restricted through institutional controls, preventing exposure to contamination in excess of State and Federal drinking water standards. Long-term groundwater monitoring is being conducted to evaluate the extent of the contaminant plume, evaluate reductions in contaminant concentrations, if any, and assure that the groundwater conditions that served as the basis for the selected remedy do not change over time.

A number of soil, sediment, surface water, groundwater, and air investigations have been conducted at the CIC Study Area, dating from 1983. Investigations have included the following:

- 1983 investigation of the Site as part of a State-wide dioxin screening program;
- 1984 investigation by NJDEP in support of ranking the Site with the Hazard Ranking System;
- 1985 investigation by NUS Corporation as the USEPA Field Investigation Team;
- 1992 and 1993 investigations by USEPA at offsite locations;
- Four phases of RI/FS work beginning in 1987 and concluding in 1999;
- 1994 interim remedial action for OU1 (contaminated surface water runoff);
- 1997 remedial action for OU3 (contaminated offsite soil and sediment);
- 1998 post-cap sampling by USEPA;
- 2003 OU2 baseline groundwater sampling event by TAMS, under contract to USEPA;
- 2005 remedial action for OU2 (Site soils and source materials);
- 2005 OU2 post-remediation groundwater sampling event by USEPA;
- 2006 well inventory/usability survey by O'Brien & Gere;
- 2006 baseline monitoring event and 2007 well abandonment/rehabilitation by O'Brien & Gere;
- 2007 AGI/1st Quarter LTM Event by O'Brien & Gere;
- 2007 geologic evaluation of the CIC Site by the U.S. Geological Survey;
- 2007 2nd Quarter LTM Event and 2008 slug testing by O'Brien & Gere;
- 2008 3rd Quarter LTM Event by O'Brien & Gere;
- 2008 4th Quarter LTM Event by O'Brien & Gere;
- 2008 5th Quarter LTM Event by O'Brien & Gere;
- 2009 6th LTM Event by O'Brien & Gere;
- 2009 7th LTM Event by O'Brien & Gere;
- 2010 8th LTM Event by CTI;
- 2011 9th LTM Event by CTI;
- 2012 10th LTM Event by CTI;
- 2013 11th LTM Event by CTI;
- 2013 12th LTM Event by CTI;

- 2014 13th LTM Event by CTI;
- 2015 14th LTM Event by CTI;
- 2016 15th LTM Event by SDV; and
- 2018 16th LTM Event and Monitoring Well Installation by SDV (the subject of this report).

2.4. NATURE AND EXTENT OF GROUNDWATER CONTAMINATION

Based on LTM data collected to date, both the overburden and bedrock groundwater within the CIC Study Area is impacted with COCs above the established site-specific remediation goals (RGs). The principal sources appear to have been the overlying contaminated soil and/or contaminant residuals from the former septic pit, process lagoons, and buried drum areas at the site. The sources to groundwater contamination have been removed. Historically, metals (arsenic), BHC pesticides, herbicides (dinoseb), VOCs (benzene and chlorinated solvents), and SVOCs and been reported in groundwater at concentrations exceeding the RGs. The widest variety of contaminants has been detected in the deeper overburden and bedrock wells in the northeastern portion of the Site (where bedrock was encountered at a shallower depth than in other portions of the CIC Study Area). There was also contamination in the southern portion of the CIC Site within the deeper overburden and bedrock aquifers that appears to be specifically related to historic elevated concentrations of herbicides in this area. Notable decreases in some COC concentrations have been observed between 2003 and 2018; indicating the OU2 soil remedial action is beneficially effecting groundwater concentrations.

It has been determined by previous contractors and concurred to by both USEPA and NJDEP that elevated levels of TCE east of the former Metroplex Corporation building area (i.e., monitoring well BF-5) are from an unidentified local source, and are not CIC Site-related. Information regarding the potential up-gradient source was previously provided to NJDEP (CTI, 2015). While BF-5 remains part of the CIC sampling regime it serves as a sentinel well for the contamination determined to be associated with CIC. Well BF-5 analytical results are provided in report tables and figures however, the results will not be discussed in the nature and extent or recommendations sections of this report.

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3.0 BEDROCK MONITORING WELL INSTALLATION ACTIVITIES

In accordance with the SDV UFP-QAPP, one additional bedrock monitoring well was installed to further assess Site COCs in groundwater within the bedrock formation below the source area. Prior to the installation of the new bedrock monitoring well, BF-2D was the deepest bedrock monitoring well within the source area at a depth of approximately 90-ftbgs. Historically BF-2D has yielded Arsenic, alpha-BHC and beta-BHC above the Site remediation goals. The newly installed monitoring well was installed to assess potential COC migration in groundwater within the bedrock aquifer, below the former source area.

During drilling efforts, the project geologist noted encountering weathered bedrock consistent with at approximately 35 feet bgs and competent bedrock at approximately 42 feet bgs. Bedrock was observed as consistent with the generalized description of the Brunswick Formation, including a red color and observable fractures in the cores and alternating layers of mudstone, siltstone and sandstone. As stated above, the objective was to set the well in a zone with the highest potential for COC migration within the bedrock aquifer. The SDV site geologist and USACE project geologist observed a zone of highly fractured formation rock from approximately 100ft bgs to 130 ft bgs. It was determined in the field to install the well screening this highly fractured zone because of the likely high transmissivity of the observed fractures.

The installation of a new bedrock monitoring well (BF-2BR) was conducted by SDV from February 19th through February 23rd, 2018. The monitoring well was constructed in the northeast corner of the CIC property near the BF-2, BF-2D and MW-5BR cluster. BF-2BR was constructed with 2" PVC and installed to a total depth of 130-feet bgs (screened from 120-feet to 130-feet bgs). Site geologists field documentation along with daily QC reports, soil boring logs and well completion form can be found in Appendix A.

3.1. SITE RECONNAISSANCE AND PRE-FIELDWORK ACTIVITIES

Due to recent Site redevelopment operations (dog park and playground construction) at the township owned property, SDV and EPA notified the Town of Edison of our upcoming drilling operations at the Site. Proper permits were obtained prior to any Site operations. Well installation operations did not impact the function of the community dog park/playground and proper precautions were made to keep the community safe from the laydown area, equipment and work area. SDV also notified the local property owners surrounding the Site of the drilling operations.

Prior to monitoring well installation, a Site reconnaissance was conduct by SDV and SDV sub-contractors Tetra-Tech and Summit Drilling. The purpose of the Site visit was to evaluate overall Site conditions, to mark-out the monitoring well location and to discuss drilling rig access. Due to recent Site development (completed dog-park and playground) and overall Site conditions (recent heavy rain/snow storms and saturated soils), it was determined additional equipment was needed to safety access the monitoring well location.

On February 12th, 2018 a sub-surface utility locate was conducted by a private company, Master Locators, to scan for underground utilities and/or anomalies within the drilling area. Master Locators used Ground Penetrating Radar (GPR) and Electromagnetic (EM) scanning techniques

to locate any subsurface utilities or anomalies. A storm sewer pipe was located northwest of the drilling area, the only underground utility identified during the utility scan. However, an anomaly was also found within the drilling area. The located anomaly did not change the installed location of the monitoring well since it was located north of the proposed location. Field documentation and a field sketch of the underground utility locate can be found in Appendix A.

In addition to a private utility locate, Summit Drilling ordered a New Jersey OneCall for public utilities. New Jersey OneCall marks out public utilities only, therefore the private utility locate was needed to provide additional documentation of any existing utilities. All drilling operations were conducted after the OneCall was cleared and affected parties reviewed the findings from the private utility locate.

3.2. BEDROCK MONITORING WELL INSTALLATION

Following all pre-fieldwork activities, Summit Drilling mobilized to the Site on February 19th, 2018 with direct oversight by Tetra-Tech to install the new bedrock monitoring well BF-2BR. BF-2BR was advanced with a Roto-Sonic drilling rig to final depth to approximately 130-feet (final depth was based on field observations). A track mounted support vehicle was used to mobilize supplies from the staging area to the well location due to saturated Site conditions. Continuous soil cores were collected every 10-feet to final depth to evaluate bedrock and bedrock fractures to verify the screening interval. Weathered bedrock (siltstone with red sandstone fragments) was located at approximately 30-feet bgs followed by competent bedrock (red siltstone/shale) at approximately 42.5-feet bgs.

On February 21st, 2018, Gregory Hattan (USACE) mobilized to the Site to assist with the screen interval determination. Based on the presence of highly fractured bedrock (inter-bedding of siltstone and sandstone) from 100-feet to 120-feet, SDV decided to drill an additional 10-feet to 130-feet bgs to further evaluate the competency of the bedrock. The additional 10-feet yielded highly fractured bedrock (inter-bedding of siltstone/mudstone and sandstone), similar to the fractures seen from 100-feet to 120-feet bgs. It was determined in the field via team conference call that the well would be set from 120-ft bgs to 130-ft bgs to best isolate and capture groundwater from the highly fractured bedrock zone.

On February 22nd, 2018, Summit constructed BF-2BR with 2” PVC and set at 130-feet bgs. BR-2BR was constructed with 120-ft of 2” PVC riser and 10-ft of 2” 0.010 slotted PVC screen. The PVC was centralized within the bedrock core and backfilled with #1 sand to 117-ft bgs, followed by a 2-ft bentonite seal (117-ft bgs to 115-ft bgs) and a cement/bentonite grout mixture from 115-ft bgs to 0.5-ft bgs. BF-2BR was finished with a flush mount cover with a 2-ft by 2-ft concrete pad.

On February 23rd, 2018, BF-2BR was developed by Summit utilizing an over pumping and surging technique to remove approximately 4 well volumes to evacuate fines from the well. BF-2BR was pumped continuously at approximately 1-gallon/minute while surging the well screen 3-times every half hour. Development water was monitored with water quality meters to determine stable conditions. BF-2BR was developed for approximately 2.5 hours and yielded approximately 80 gallons. Water levels stabilized within BF-2BR after 2.5 hours at approximately 67-ft btoc with turbidity below 50 NTU. All development water was discharge to the ground surface (to on-Site

vegetated swale) through a 5-micro filter bag following the IDW handling procedures in the project QAPP.

After survey activities were completed Summit drilling registered the new well with NJDEP.

3.3. WASTE CHARACTERIZATION AND DISPOSAL OF SOLID WASTE

A total of six 55-gallon drums of soil cuttings and cores were generated during the installation of BF-2BR. A waste characterization sample was collected on February 19th, 2018 and submitted to Test America in Denver, CO under a standard turnaround time. Analytical results determined that the soil cuttings/cores were non-hazardous yielding on two detections (Barium at an estimated value of 0.45 mg/L and pH at a value of 7.1 SU).

SDV sub-contracted American Waste Management Services (AWMS) to coordinate the disposal of the solid waste. AWMS contracted Environmental Recovery Corporation (ERC) to transport and dispose of the drums to their facility in Lancaster, PA. Prior to the disposal effort SDV and EPA completed the off-site rule authorization for the disposal of the drummed material. On April 3rd, 2018 ERC mobilized to the Site to pick-up, transport and dispose of the drums. SDV was on-Site to sign the disposal manifest of behalf of the EPA Region 2. The completed disposal manifest can be found in Appendix A.

3.4. BEDROCK MONITORING WELL SURVEY

SDV sub-contracted Dennis W. Sklar, Inc. (DWS) to conduct the vertical and horizontal survey of BF-2BR. On April 2nd, 2018, DWS mobilized to the Site with direct oversight of SDV for the field survey. DWS used the existing monitoring wells BF-2D and MW-5BR to tie in BF-2BR to provide accurate differential elevations. Elevations were checked against monument "NJTP" (NGS CORStation) published by the National Geodetic Survey. DWS provided the horizontal datum in New Jersey State Plane Coordinate, North American Datum (NAD83) and the vertical datum in North American Vertical Datum (NAVD 83). The completed New Jersey Department of Environmental Protection (NJDEP) Monitoring Well Certification Form B – Location Certification can be found in Appendix A.

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4.0 MONITORING EVENT ACTIVITIES

The Spring 2018 Long Term Monitoring (LTM) Event was conducted by SDV from April 23rd through April 26th, 2018. Four sequential heavy snow storms delayed the LTM Event that was initially scheduled for March 12th, 2018 into April 2018 due to well accessibility issues. The current LTM well network is depicted on Figure 1 (with the addition of BF-2BR). Groundwater samples were collected from the monitoring wells established as part of the LTM network which consisted of the following 22 wells in the CIC Study Area:

BF-2	FU	MW-3BR	MW-5BR	NUS-3D
BF-2D	GU	MW-3S	MW-6BR	NUS-3S
BF-2BR	MW-1BRD	MW-4BR	MW-7BR	QD
BF-4	MW-2I	MW-4S	NUS-2D	UU
BF-5	MW-2S			

In addition, inspections were conducted and water levels were collected from five other site wells (MW-1BRS, MW-1S, MW-2BR, MW-8BR and OU). An inspection, water level and sampling was not conducted at MW-6BR during this LTM Event due to inaccessibility (soil stock-pile over-top the well from Northeast Foods (former Metroplex property) property construction work). A total of 21 monitoring wells were sampled during this LTM Event. Well MW-6BR, which is located off site on neighboring property was buried by construction debris from on-site activities. The soil mound in the area of MW-6BR is approximately 6-8 feet high. SDV has communicated with the property owner and has been notified that there are no plans to move the debris from the site. SDV notified USACE and EPA and discussions with the property owner are ongoing.

4.1. GROUNDWATER LEVEL MEASUREMENTS

On April 23rd, 2018, SDV collected a synoptic round of water level measurements from 26 (out of 27) site groundwater monitoring wells. Water levels were measured using an electronic water level indicator with an accuracy of ±0.01 feet from a consistent surveyed point at the top of the inner well casing. A water level was not collected from MW-6BR due to inaccessibility. The stabilized water level and the calculated groundwater elevation based on the surveyed elevation of the inner well casing are presented on Table 1.

4.2. MONITORING WELL INSPECTIONS

A well inventory and inspection of the monitoring wells was conducted to evaluate the present condition of each well in the LTM monitoring well network. The USEPA Region 2 Superfund Well Assessment Checklist was completed for each monitoring well. An inspection was not conducted on MW-6BR due to inaccessibility. The well inspection identified three wells (GU, MW-7BR and FU) which are at risk of water intrusion into the flush-mount well boxes (see Table 2). The well inspection also identified one well (OU) whose measured depth not match the installed depth, indicating an accumulation of sediment in the well. Wells GU, MW-7BR, FU and OU are

boundary wells for the monitoring network and are eligible for either repair or discontinuation of sampling efforts. A statistical evaluation of sampling frequency/need is presented in section seven. Field repairs were made to two wells, MW-5BR (labeled well) and BF-2D (new lock installed). The USEPA Well Assessment Checklist Forms are presented in Appendix B.

4.3. GROUNDWATER SAMPLING

The monitoring wells were purged and sampled in general accordance with USEPA Region II's *Ground Water Sampling Procedure – Low Stress (Low Flow) Purging and Sampling* dated March 1998 and as the primary guidance for low flow sampling, NJDEP's *Field Sampling Procedures Manual* (Section 6.9.2.2), dated August 2005. Groundwater sampling was conducted April 23rd through April 26th, 2018.

Initially, the static water level was measured in the monitoring well with an electronic water level indicator. The wells were then sampled using low-flow methodology. For low-flow sampling, a 1.75" QED Sample Pro™ submersible bladder pump and attached Teflon™-lined polyethylene tubing was then carefully lowered to the designated sample depth interval within each well screen (approximate midpoint of screen interval) and secured. When starting the purge process, the groundwater was purged at a rate of between approximately 75 to 400 milliliters/minute (mL/min) while monitoring drawdown and was adjusted according to drawdown during purging. Purge water was discharged to the ground surface. Field parameters were monitored with a Horiba U-52 meter in a flow-through cell. The Horiba U-52 was a substitution water quality meter to the YSI water quality meter specified in the QAPP. The Horiba U-52 satisfies the DQO as indicated within the QAPP. Field parameter measurements of pH, conductivity, temperature, dissolved oxygen (DO), oxidation reduction potential (ORP), and turbidity along with water level measurements were recorded at approximate 5-minute intervals during purging. Purging continued until these field parameters stabilized. Upon stabilization of the field parameters, the flow-through cell was disconnected, the purge flow rate was maintained, and a groundwater sample was collected for laboratory analysis.

Field parameter measurements at the time of sample collection are presented in Table 3. Groundwater sample logs are provided in Appendix C.

4.4. MONITORING WELL PERFORMANCE

During groundwater purging, seven monitoring wells (MW-3S, MW-1BRD, MW-7BR, BF-2BR, GU, NUS-3S and NUS-2D) were found to recharge at a rate insufficient to support purge rates of approximately 100 to 200 ml/min and exhibited drawdown during well purging. When purging, the water level in the monitoring well casings dropped to a level significantly greater than the 0.3 foot limit specified in the applicable guidance documents. In accordance with the USEPA Region II *Ground Water Sampling Procedure* for wells with insufficient yield, the groundwater purge rate and the water level were monitored to ensure dewatering of the well below the level of the pump intake did not occur. Purging continued until the field parameters became stabilized.

4.5. ANALYTICAL METHODS

The EPA Region 2 Field and Analytical Services Technical Advisory Committee (FASTAC) procedures were followed for requesting analytical services for this event. An Analytical Services Request Form was submitted to the EPA Region 2 Regional Sample Control Coordinator (RSCC) prior to the event. Based on direction from the RSCC, laboratory analytical service providers were selected as follows:

- National Analytical Services Contract Laboratory: Chemtech Consulting Group – Target Analyte List (TAL) Metals analysis (reporting arsenic only);
- National Analytical Services Contract Laboratory: Shealy Environmental Services – Target Compound List (TCL) Volatile Organic Compound (VOC) analysis and Pesticides analysis (reporting alpha-hexachlorocyclohexane [BHC], beta-BHC, delta-BHC, and gamma-BHC [Lindane] only)
- Subcontract Laboratory: Test America – Herbicides (reporting dinoseb only).

Groundwater samples and associated QC samples were shipped via Federal Express to Test America in Denver, Colorado, Shealy Environmental Services (Shealy) in West Columbia, South Carolina and Chemtech Consulting Group (Chemtech) in Mountainside, New Jersey between April 24th through April 26th, 2018.

Table 4 presents a summary of sample preparation and analytical methods utilized during the April 2018 LTM Event. Chain-of-custody records for the samples submitted for laboratory analysis are included as Appendix D.

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5.0 QUALITY ASSURANCE/QUALITY CONTROL

The overall QA/QC objective was to develop and implement procedures for field sampling, chain-of-custody, laboratory analyses, and reporting so that data was collected in a uniform manner, and that data is of consistently high quality. To collect and record data in a uniform manner, the November 2016 Project-Specific Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP) was prepared which describes and specifies the QA/QC procedures for the LTM program.

5.1. EQUIPMENT DECONTAMINATION

To reduce the possibility of cross-contamination, reusable sampling equipment that came in contact with groundwater was decontaminated prior to use at each well location. Where possible, dedicated disposable items were utilized (i.e., tubing) to reduce the potential for cross-contamination. Equipment was decontaminated near the monitoring well location with the spent solution and rinse water discharged to the ground surface (away from the well location).

5.2. EQUIPMENT CALIBRATION

The equipment used to monitor the water quality indicator parameters was properly calibrated with reference standards at the start of each day of sampling. In addition, the photoionization detector (PID) used for health and safety monitoring was calibrated at the start of the sampling event. Equipment calibration information was recorded on calibration logs presented in Appendix E.

5.3. FIELD QUALITY CONTROL

Field QC samples collected during the April 2018 LTM Event included field duplicates, equipment (rinsate) blanks, trip blanks, and matrix spike/matrix spike duplicate (MS/MSD) samples. Analytical results for equipment blanks, trip blanks, and field duplicate samples (provided with the actual sample results as sample pairs) are presented in Section 4.0.

Two field duplicate samples were collected as a measure of the precision of the sample collection process and analytical reproducibility. Duplicates were collected at the same time, using the same procedures, the same equipment, and the same type of containers as the parent samples. Field duplicate samples were collected at BF-5 and QD (samples DUP1-04242018 and DUP2-04262018, respectively) during this LTM Event.

Two equipment rinsate sample were collected and analyzed to examine the effectiveness of equipment decontamination procedures. A sample from the submersible pump and tubing was collected using high-grade deionized water. The field equipment (rinsate) blank was identified as "FB" and the date of collection (Samples FB-04242018 and FB-04252018, respectively).

Trip blanks were prepared and accompanied each cooler with a VOC sample. The trip blanks served as an evaluation of contamination generated from sample containers or contamination occurring during the sample transport and laboratory storage processes. Three trip blanks were

submitted (one per VOC sample shipment) and labeled "TB" and the date of collection (Samples TB-04232018, TB-04252018 and TB-04262018, submitted on 04/23/18, 04/25/2018 and 04/26/2018, respectively).

Two MS/MSD samples were collected at locations suspected of minimal to no contamination, but representative of different groundwater conditions to confirm the accuracy of the laboratory analysis. The MS/MSD is used to measure and evaluate method performance as a function of sample matrix and potential matrix interferences. The MS/MSD samples were collected from monitoring wells MW-3S and BF-4 during this LTM Event.

5.4. SAMPLE DELIVERY AND CUSTODY

Samples were shipped via Federal Express to Test America (herbicides), Shealy (VOCs and pesticides) and Chemtech (metals) during this sampling event. All samples were packaged for shipment in accordance with USEPA Contract Laboratory Program (CLP) procedures, Department of Transportation (DOT) requirements, and chain-of-custody procedures. Chain of custody records are presented in Appendix D.

5.5. FIELD DOCUMENTATION

Chain-of-custody records, groundwater sampling logs, and equipment calibration logs were used as a means of recording the data collection activities performed each day onsite. Additionally, for each day of sampling, a daily quality control report (DQCR) was completed (see Appendix F).

5.6. DATA VALIDATION

The purpose of validating data is to allow the data user to interpret and use the data with varying degrees of confidence, depending on how the data are qualified (i.e., unqualified, estimated, or rejected).

Groundwater samples collected during the April 2018 LTM Event for analysis of TCL VOCs and pesticides (reporting alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC [Lindane] only) were submitted to Shealy through the USEPA CLP. Due to a SDV sample submission error Shealy was unable to run samples for both TCL VOCs 8260 as well as for TV-SIM analysis. Shealy noted this error after all samples had been collected and indicated that samples would be run first through standard 8260 methods and then, if sufficient sample volume was available a TV-SIM analysis would also be performed. Based on the documentation provided by DESA SDV is unable to confirm if any reported values were through the use of TV-SIM analysis. However, laboratory detection limits are indicative of standard 8260 analysis and not TV-SIM analysis. SDV submitted a request for the full laboratory report to support this determination to the DESA project manager, however to date DESA has not provided the supporting files. Per contract agreements SDV cannot directly contact Shealy for this information because it would create a conflict of interest for the government. Validation of these samples were performed by USEPA Region 2 Division of

Environmental Sciences and Assessment (DESA)/Hazardous Waste Support Branch (HWSB) personnel. The validation report for the volatile organic constituents is provided in Appendix G.

Groundwater samples collected during the April 2018 LTM Event for analysis of herbicides (reporting dinoseb only) were submitted to Test America. These samples underwent validation at Level III guidelines, which was conducted by Laboratory Data Consultants, Inc. (LDC) of Carlsbad, California. The validation report for herbicides is provided in Appendix G.

Groundwater samples collected during the April 2018 LTM Event for analysis of metals (reporting for arsenic only) were submitted to Chemtech through the USEPA CLP. Validation of these samples was performed by USEPA Region 2 Division of Environmental Sciences and Assessment (DESA)/Hazardous Waste Support Branch (HWSB) personnel. Appendix G contains the validation reports for the metals assessment.

All analytical results for the April 2018 sampling event were reviewed and found to be generated in compliance with the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) requirements listed in the UFP-QAPP and good analytical practices. Some discrepancies were noted in the QC elements associated with project samples, and the appropriate data qualifier was applied to the affected results. Although some results required qualification, no significant QC deficiencies were noted. All samples were judged to be usable as a result of the data validation process. A summary of pertinent findings related to data validation follows:

- **TCL VOCs**

  Validation Report Case No. 47571 / SDG No. BE908

  - The validation report indicated for TVOA analysis non-detected results for sample BF-2BR (BE928) should be rejected (i.e., R-qualified) because the sample was analyzed outside of unpreserved container holding times (i.e., > 7 days) and the cooler temp upon receipt by the lab exceeded 6 ºC (6.9 ºC). However, the CoC and the validation table associated with sample BF-2BR indicates the VOA containers were preserved with HCl. Therefore, the validation table has been revised such that the non-detected results have been UJ-qualified (and not R-qualified).
  - The validation report indicated that due to the cooler temperature exceeding 6 ºC (6.9 ºC) detected results were J-qualified and non-detected results were UJ-qualified for the following samples for TVOA analysis: Field Blank (BE921), GU (BE922), MW-5BR (BE923), BF-2D (BE924), Field Blank (BE925), BF-2 (BE926), and BF-2BR (BE928). However, for the samples in question the validation table lists several detected parameters which were not qualified (and have now been J-qualified in the validation table) and several non-detected parameters which were U-qualified (and have now been UJ-qualified in the validation table). Note the NJ-qualifiers were left unchanged.

- The validation report indicated that for TV-SIM analysis results for samples Field Blank (BE921), GU (BE922), MW-5BR (BE923), BF-2D (BE924), Field Blank (BE925), BF-2 (BE926), and BF-2BR (BE928) should be rejected (i.e., R-qualified) because the sample was analyzed outside of unpreserved container holding times (i.e., > 7 days) and the cooler temp upon receipt by the lab exceeded 6 ºC (6.9 ºC). It is presumed by the validation report that this data was rejected and not reported however, the electronic data deliverable did not include the rejected results in its report per industry standard. A request for the laboratory data was made to DESA but not received. Based on the detection limits of the data associated with the above mentioned samples it is inferred that the TV-SIM results were rejected and removed prior to delivery to SDV.
- The validation report indicated that for TVOA analysis for samples MW-5BR (BE923), BF-2D (BE924), BF-2 (BE926), and BF-2BR (BE928) the samples and the associated field blanks (Field Blank [BE918] and Field Blank [BE925]) contain acetone at less than 2 times the CRQL and therefore detected results should be U-qualified at the detected concentrations. However, in the validation table the acetone results for these four samples were either J-qualified or had no qualifier. Therefore the validation table has been revised such that these acetone results have been U-qualified at the detected concentrations. (Please note the validation report referred to the QC samples BE918 and BE925 as trip blanks. However, since the validation table and the CoC referred to these two samples as field blanks, this report considers them field blanks.)
- The validation report indicated that for TVOA analysis for samples MW-5BR (BE923) and BF-2 (BE926) the samples and the associated trip blanks (Trip Blank [BE908] and Trip Blank [BE921]) contain methylene chloride at less than 2 times the CRQL and therefore detected results should be U-qualified at the detected concentrations. However, in the validation table the acetone results for these two samples were J-qualified. Therefore the validation table has been revised such that these methylene chloride results have been U-qualified at the detected concentrations.

<u>Validation Report Case No. 47571 / SDG No. BE927</u>

- The validation report indicated that due to the cooler temperature exceeding 6 ºC (6.9 ºC) detected results were J-qualified and non-detected results were UJ-qualified for the following sample for TVOA and TVOA-SIM analysis: BF-4 (BE927). However, for the sample in question the validation table lists several non-detected detected parameters which were U-qualified (and have now been UJ-qualified in the validation table).

- **Pesticides**

Validation Report Case No. 47571 / SDG No. BE908

- The validation report indicated that due to the cooler temperature exceeding 6 ºC (6.9 ºC) detected results were J-qualified and non-detected results were UJ-qualified for the following samples: MW-2I (BE910), MW-2S (BE911), MW-4S (BE912), NUS-3D (BE913), GU (BE922), Field Blank (BE925), BF-2 (BE926), and BF-2BR (BE928). However, the validation table shows the following detected results which were not J-qualified:
  - BE926 – alpha-BHC: 0.53 µg/L
  - BE926 – beta-BHC: 0.24 µg/L
  - BE926 – delta-BHC: 1.1 µg/L
  - BE926 – endrin: 0.053 µg/L

  These four results have been J-qualified in the validation table.
- The validation report indicated that for samples FU (BE917), MW-5BR (BE923), BF-2D (BE924), and BF-2 (BE926) the samples and the associated field blanks (Field Blank [BE918] and Field Blank [BE925]) contain endosulfan sulfate at less than the CRQL and therefore detected results should be U-qualified at the detected concentrations. However, in the validation table the endosulfan sulfate results for these samples were J-qualified. Therefore the validation table has been revised such that these endosulfan sulfate results have been U-qualified at the detected concentrations.
- The validation report indicated that for sample NUS-3D (BE913) the sample and the associated field blanks (Field Blank [BE918] and Field Blank [BE925]) contain methoxychlor at less than the CRQL and therefore detected results should be U-qualified at the detected concentrations. However, in the validation table the methoxychlor result for this sample was J-qualified. Therefore the validation table has been revised such that this methoxychlor result has been U-qualified at the detected concentration.
- The validation report indicated that for samples MW-2I (BE910), MW-2S (BE911), NUS-3D (BE913), MW-3BR (BE914), MW-7BR (BE920), MW-5BR (BE923), BF-2D (BE924), BF-2 (BE926), and BF-2BR (BE928) the samples and the associated field blanks (Field Blank [BE918] and Field Blank [BE925]) contain dieldrin at less than the CRQL and therefore detected results should be U-qualified at the detected concentrations. However, in the validation table the dieldrin results for these samples were J-qualified. Therefore the validation table has been revised such that these dieldrin results have been U-qualified at the detected concentrations.

- The validation report indicated that for samples MW-2I (BE910), MW-2S (BE911), MW-5BR (BE923), BF-2D (BE924), BF-2 (BE926), and BF-2BR (BE928) the samples and the associated field blanks (Field Blank [BE918] and Field Blank [BE925]) contain trans-chlordane at less than the CRQL and therefore detected results should be U-qualified at the detected concentrations. However, in the validation table the trans-chlordane results for these samples were J-qualified. Therefore the validation table has been revised such that these trans-chlordane results have been U-qualified at the detected concentrations.
- The validation report indicated that for samples MW-1RD (BE909), MW-2I (BE910), MW-2S (BE911), NUS-3D (BE913), MW-3BR (BE914), BF-5 (BE919), MW-7BR (BE920), MW-5BR (BE923), BF-2D (BE924), BF-2 (BE926), and BF-2BR (BE928) the samples and the associated field blanks (Field Blank [BE918] and Field Blank [BE925]) contain 4,4-DDT' at less than the CRQL and therefore detected results should be U-qualified at the detected concentrations. However, in the validation table the 4,4-DDT' results for these samples were J-qualified. Therefore the validation table has been revised such that these 4, 4-DDT' results have been U-qualified at the detected concentrations.
- The validation report indicates samples MW-1RD (BE909), MW-2I (BE910), MW-2S (BE911), NUS-3D (BE913), MW-3S (BE915), FU (BE917), BF-5 (BE919), MW-7BR (BE920), GU (BE922RX), MW-5BR (BE923), BF-2D (BE924), Field Blank (BF-925), and BF-2 (BE926) were qualified for "% difference on the two columns." However, the finding doesn't indicate which of the four percent difference categories and therefore which qualifiers (if any) are applicable to the samples listed herein. Therefore, there is insufficient information to reconcile any differences between the validation report and the validation table and no changes to the validation table were made as a result of this finding.

<u>Validation Report Case No. 47571 / SDG No. BE927</u>

- The validation report indicated that the "following Pest water samples were outside primarily holding time criteria": BF-4 (BE927RX), DUP2 (BE929RX), UU (BE930RX), QD (BE931RX), NUS-3S (BE933RX), NUS-2D (BE934RX), and MW-4BR (BE935RX). However, the validation table indicated the samples in question were collected on April 25, 2018, or April 26, 2018, extracted on April 30, 2018, and analyzed on May 8, 2018. Aqueous samples for pesticides must be extracted within seven days of collection and analyzed within 40 days after extraction to be in compliance with holding times requirements. Therefore, the samples in question were in compliance with holding time criteria and no changes to the validation table were made as a result of this finding.
- The validation report indicates samples BF-4 (BE927), DUP2 (BE929), UU (BE930), QD (BE931), NUS-3S (BE933), NUS-2D (BE934), and MW-4BR (BE935).were qualified for "% difference on the two columns." However, the

finding doesn't indicate which of the four percent difference categories and therefore which qualifiers (if any) are applicable to the samples listed herein. Therefore, there is insufficient information to reconcile any differences between the validation report and the validation table and no changes to the validation table were made as a result of this finding.

- **METALS ICP-MS**

  Validation Report Case No. 47571 / SDG No. BE909

  - The validation report indicated for Metals analysis for the parameter cobalt that the "following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs:" MW-2S (MBE911), MW-4S (MBE912), MW-3BR (MBE914), DUP1 (MBE916), BF-5 (MBE919), and MW-7BR (MBE920). However, the validation table did not include a U-qualifier for these samples. The U-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter zinc that the "following sample has analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Field Blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs:" MW-3BR (MBE914). However, the validation table did not include a U-qualifier for this sample. The U-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter aluminum that the "following sample has analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Field Blank analyte results are greater than CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs:" MW-4S (MBE912). However, the validation table did not include a U-qualifier for this sample. The U-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter aluminum that the "following samples have analyte results greater than Field Blank Results, but less than 10x the Field Blank Results. The associated Field Blank analyte results are greater than CRQL. Detected analytes are qualified J:" MW-2S (MBE911), NUS-3D (MBE913), MW-3BR (MBE914), DUP1 (MBE916), BF-5 (MBE919), and MW-7BR (MBE920). However, the validation table did not include a J-qualifier for these samples. The J-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter manganese that the "following Duplicate and original water sample results are greater than or equal to 5x the CRQL and RPD is greater than 20%" and detected analytes are qualified J: DUP1 (MBE916) and BF-5 (MBE919). However, the validation table

did not include a J-qualifier for these samples. The J-qualifier has been added to the validation table.

- The validation report indicated for Metals analysis for the parameters copper, lead, and zinc that the "following Duplicate and/or original water sample results are less than 5x the CRQL and absolute difference between duplicate and original samples are greater than the CRQL. Detected analytes are qualified J. Non-detected analytes are qualified UJ:" DUP1 (MBE916) and BF-5 (MBE919). However, the validation table did not include a J-qualifier for these samples. The J-qualifier has been added to the validation table.

- Validation Report Case No. 47571 / SDG No. BE922
  - The validation report indicated for Metals analysis for the parameter aluminum that the "following sample has analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Field Blank analyte results are greater than CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs:" BF-4 (MBE927) and NUS-2D (MBE934). However, the validation table did not include a U-qualifier for these samples. The U-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter zinc that the "following sample has analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Field Blank analyte results are greater than CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs:" BF-2BR (MBE928). However, the validation table did not include a U-qualifier for this sample. The U-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter zinc that the "The following samples have analyte results greater than CRQLs but less than the field blank. The associated Field Blank analyte results are greater than CRQLs. The sample results are raised to the field blank and qualified U:" BF-2D (MBE924) and NUS-2D (MBE934). However, the validation table did not include a U-qualifier for these samples. The U-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter aluminum that the "following samples have analyte results greater than Field Blank Results, but less than 10x the Field Blank Results. The associated Field Blank analyte results are greater than CRQL. Detected analytes are qualified J:" MW-5R (MBE923), BF-2 (MBE926), BF-2BR (MBE928), UU (MBE930), and QD (MBE931). However, the validation table did not include a J-qualifier for these samples. The J-qualifier has been added to the validation table.
  - The validation report indicated for Metals analysis for the parameter zinc that the "following samples have analyte results greater than Field Blank Results, but less than 10x the Field Blank Results. The associated Field Blank analyte results are

greater than CRQL. Detected analytes are qualified J:" GU (MBE922), MW-5R (MBE923), BF-2 (MBE926), BF-4 (MBE927), UU (MBE930), and MW-4BR (MBE935). However, the validation table did not include a J-qualifier for these samples. The J-qualifier has been added to the validation table.

- **Dinoseb –** The continuing calibration verification (CCV) percent difference (%D) exceeded the 20% criterion for dinoseb, resulting in all detected results being J-flagged and non-detected results being UJ-flagged.

5.7. ELECTRONIC DATA DELIVERABLES

The analytical data from this sample event will be submitted electronically to USEPA in the electronic data deliverable (EDD) required format as part of the submission of this report.

5.8. NON-CONFORMANCE REPORT

A non-conformance report was created to address the sample volume delivery issue noted by Shealy. During the analytical request phase of the project SDV requested additional SIM analysis be performed to achieve the lower project quantitation limits identified in the QAPP. During previous sampling events it was common for laboratory assignments to be finalized with the exception of the additional SIM analysis. The SDV project team failed to note that the additional SIM analysis was accepted during this request and as a result did not purchase adequate VOA vials for sample collection or notify the field team of the expanded requirement. Additionally, it has been determined that the existing QAPP worksheet for bottle requirements did not address the one additional VOA vial required for each SIM analysis. Because only three VOA vials were submitted for each sample to the CLP laboratory and insufficient VOAs were available in the field the CLP laboratory was only able to perform SIM analysis on select samples. The non-conformance report completed during the sampling event is included in Appendix G.

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6.0 MONITORING EVENT RESULTS

The results of the April 2018 LTM Event conducted at the CIC Site are discussed in the following subsections. The purpose of this LTM event was to collect groundwater samples and assess data from the current LTM well network to monitor contaminant concentrations, evaluate groundwater flow direction, and continue monitoring the effectiveness of the OU2 remedial action.

6.1. CONDITIONS OF MONITORING WELLS

During the synoptic round of water level measurements, the condition of each monitoring well was noted and well repairs associated with securing the covers on the flush-mount protective casings was performed at several well locations at the completion of the sample event. Well deficiencies are presented in Table 2. The USEPA Well Assessment Checklist Forms are presented in Appendix B.

6.2. SUMMARY OF HYDROGEOLOGIC RESULTS

Based on the results of the synoptic round of water level measurements, potentiometric surface (groundwater contour) maps were developed for the overburden and bedrock aquifers, and are presented on Figures 3 and 4, respectively. Groundwater flow direction in the overburden and bedrock aquifers within the CIC Study Area is generally to the east and southeast. Groundwater flow at the CIC site is influenced by lower topography and the excavation of bedrock for the construction of the highway and the associated stormwater sewer system, creating localized flow to the north and northeast. A geologic cross-section depicting geologic units and groundwater elevation is presented on Figure 2.

The bedrock aquifer is isolated from the overburden groundwater across the CIC Study Area by the weathered bedrock (saprolite) which acts as semi-confining layer and is considered an aquitard. The vertical hydraulic gradient between the overburden and bedrock aquifers included both upward and downward gradients, with 0.001 ft/ft and 0.003 ft/ft upward gradients observed in well nests NUS 3S/3D and MW-7BR/FU, respectively; and 0.007 ft/ft and 0.134 ft/ft downward gradients observed in well nests MW-2S/2BR and MW-4S/4BR, respectively.

Within the bedrock aquifer during the April 2016 sample event, vertical hydraulic gradients between deep and shallow bedrock wells included both upward and downward vertical gradients with a slight upward gradient of 0.008 ft/ft at well nest BF-2/BF-2D and a downward gradient of 0.038 ft/ft at well nest MW-1BRD/1BRS. The vertical hydraulic gradient between the deep and intermediate bedrock wells BF-2D and MW- 5BR, is upward at 0.0003 ft/ft.

Within the CIC Site boundary, the horizontal groundwater flow gradient is relatively flat at approximately 0.007 feet/feet in the bedrock aquifer with groundwater flow toward the southeast. Based on hydraulic conductivity ranging from 2.8 x 10-5 cm/sec at BF-2D to 1.36 x 10-3 cm/sec

at MW-5BR measured during the AGI and an assumed porosity of 10 percent, the groundwater seepage velocity is approximately 0.006 to 0.27 feet per day or 2.2 to 98.5 feet per year. In the CIC Study Area, the horizontal gradient is approximately 0.01 feet/feet in the overburden aquifer and approximately 0.007 ft/ft in the central and southeastern portion of the bedrock aquifer, with groundwater flow toward the east and southeast.

6.3. REMEDIATION GOALS

Contaminants of concern (COCs) have been selected for this project based on an evaluation of the various data sets (2003 to 2009). The primary COCs consist of one predominant contaminant compound per analyte group based on historic uses at the CIC Site, detections across the CIC Study Area, and the frequency of concentrations exceeding the established remediation goals (RGs). The primary COCs are as follows:

- VOCs – TCE;
- Pesticides – alpha-BHC;
- Herbicides – dinoseb; and
- Metals – arsenic.

Analytical results were compared to the ROD remediation goals for each contaminant of concern. Analytical results for groundwater samples collected during this LTM Event are presented in Table 5.

Figures 5-14 depict contaminant concentration for the primary COCs (TCE, alpha-BHC, dinoseb, and arsenic) and vinyl chloride from the overburden/transition wells and bedrock wells, respectively.

6.4. SUMMARY OF ANALYTICAL RESULTS

Analytical results for COCs detected above the RGs are provided below. Analytical results for all constituents are provided on Table 5, and the laboratory analytical data packages are provided in Appendix G.

6.5. VOLATILE ORGANIC COMPOUNDS

The following VOCs were detected at or above the RGs:

1,2-Dichloroethane (1,2-DCA) [RG of 2.0 µg/L]:

- Bedrock Well BF-2 at 4.3 J µg/L;
- Bedrock Well MW-5BR at 3.7 J µg/L; and
- Transition Well QD at 2.4 µg/L.

1,2-Dichloropropane (1,2-DCP) [RG of 1.0 µg/L]:

- Transition Well QD at 2.4 µg/L.

Methylene Chloride [RG of 3.0 µg/L]:
- Transition Well QD at 5.0 µg/L.

Benzene [RG of 1.0 µg/L]:
- Bedrock Well BF-2 at 4.8 J µg/L;
- Bedrock Well BF-2D at 11 J µg/L; and
- Bedrock Well MW-5BR at 14 J µg/L.

Trichloroethene (TCE) [RG of 1.0 µg/L]:
- Transition Well QD at 1.7 µg/L.

Vinyl Chloride [RG of 1.0 µg/L]:
- Bedrock Well BF-2 at 10 J µg/L;
- Bedrock Well BF-2D at 63 J µg/L; and
- Bedrock Well MW-5BR at 17 J µg/L.

Analytical results for VOCs for the newly installed bedrock monitoring well BF-2BR yielded results below the Site RGs. Analytical results are presented in Table 5.

6.6. PESTICIDES AND HERBICIDES

The following pesticides were detected at or above the RGs:

Alpha BHC [RG of 0.02 µg/L]:
- Bedrock Well BF-2 at 0.53 J µg/L;
- Bedrock Well BF-2D at 0.18 µg/L;
- Bedrock Well MW-5BR at 0.099 µg/L; and
- Transition Well QD at 0.024 µg/L.

Beta BHC [RG of 0.04 µg/L]:
- Bedrock Well BF-2 at 0.24 J µg/L;
- Bedrock Well BF-2D at 0.090 µg/L; and
- Bedrock Well MW-5BR at 0.071 µg/L.

The following herbicides were detected at or above the RGs:

Dinoseb [RG of 7.0 µg/L]:

- Transition Well QD at 7.7 J µg/L. (Note the dinoseb result was non-detected [at 8.9 UJ µg/L] for the primary sample for Transition Well QD; the result of 7.7 J µg/L was detected in the duplicate sample for Transition Well QD.)

Analytical results for Pesticides and Herbicides for the newly installed bedrock monitoring well BF-2BR yielded results below the reporting limit and below the Site RGs. Analytical results are presented in Table 5.

6.7. METALS

The following metals were detected at or above the RGs:

Arsenic [RG of 3.0 µg/L]:

- Bedrock Well BF-2 at 332 µg/L;
- Bedrock Well BF-2D at 4.9 µg/L;
- Bedrock Well BF-2BR at 3.9 µg/L;
- Bedrock Well MW-4BR at 3.1 µg/L; and
- Bedrock Well MW-5BR at 118 µg/L.

Analytical results are presented in Table 5.

High turbidity was present during the sample collection for MW-1BR at 186 NTU. Field staff should ensure that turbidity is stable if above 10 NTU when sampling due to Site COCs containing metals. Elevated turbidity readings were present from the beginning of well purging which could be attributed to the pump touching the bottom of the well during pump deployment. Based on analytical results for the 2018 LTM Event, the elevated turbidity did not impact the sample quality when compared to the 2016 LTM Event results.

Even though there is a history of arsenic use at CIC, bedrock wells BF-2D, BF-2BR and MW-4BR could be considered to be at background concentrations. The 2005 OU2 removal of 240,00 cu yds of contaminated soil ranging from 2 to 20' bgs has resulted in drastic decreases of arsenic in shallow groundwater at the source areas. The shallow and transitional wells are now all below cleanup levels. Monitoring wells BF-2 and MW-5BR which are located nearest to the former source area still have concentrations above 100 ug/L and are not considered to be near background concentrations. However, both these wells previously have had concentrations as high as 12,700 ug/L and 214 ug/L, respectively. Wells BF-2D, BF-2BR and MW-4BR's arsenic levels range from 0.5 to 5 ug/L which easily falls within regional background levels identified in a study of arsenic occurrence in the Passaic Formation which found natural occurring levels as high as 240 ug/L (M.E. Serfes). This includes upgradient well NUS-3D (arsenic at 0.5 J ug/L) and sidegradient well MW-1BRD (arsenic at 1.5 ug/L) both of which are below the RG of 3ug/L.

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7.0 TREND ANALYSIS

Statistical Trend Analysis using the Monitoring and Remediation Optimization System (MAROS) software, Version 3.0 (GSI, 2012) was performed using analytical results from 2009 through the current April 2018 event for the following five constituents of concern (COCs) for the Site: alpha-BHC, arsenic, dinoseb, trichloroethene, and vinyl chloride. Output reports from the MAROS evaluation are provided in Appendix H, along with the original data input table and exported database.

7.1. INPUT DATA

The wells included in the MAROS evaluation included: BF-2, BF-2D, BF-4, BF-5, MW-5BR, MW-6BR, MW-7BR, QD, and UU. Wells MW-1BRD and BF-2BR were sampled during the 2009 to 2018 timeframe; however, there were insufficient rounds of data to perform the trend analysis (i.e., at least four rounds are required for an individual COC) and this monitoring well was not included in the MAROS evaluation. Input data from prior to 2009 was not incorporated because this data was collected prior to the source area removal action and are representative of differing site conditions.

Information regarding the site, hydrogeology and plume configuration that were used during the MAROS evaluation was updated in 2018. After an evaluation of site conditions from 2009 to 2018 project stakeholders decided that the fundamental site conditions have evolved. Changes reflect the ongoing natural attenuation processes at the site and have changed plume width, length, maximum length and distance to receptors has changed. Further the site wells were reclassified from just source and tail wells to source, tail and boundary wells based on years of trend analysis and results. A memo summarizing the parameter changes has been included in Appendix H for reference.

In addition, to avoid biasing the statistical testing, a uniform value for non-detect results was utilized during the MAROS evaluation. These values were as follows: 0.05 micrograms per liter (µg/L) for alpha-BHC; 1 µg/L for arsenic; 0.25 µg/L for dinoseb; and 0.5 µg/L for TCE and vinyl chloride. These values were selected using representative (most common) EPA laboratory reporting limits for analyte evaluated in the historical data set. Use of a lower value for non-detect results would bias data low and provide an unduly optimistic representation of site concentrations, just as using the highest observed non-detect result would bias the data calculations high and provide an unduly pessimistic representation of site conditions.

7.2. STATISTICAL TREND TESTS

Two different statistical techniques were used for comparison to evaluate trends in the monitoring wells: the Mann-Kendall Test and Linear Regression Analysis. A summary of the trend evaluation is provided as Table 7.

The Mann-Kendall Test is a non-parametric procedure useful for analyzing trends over time. The Mann-Kendall Test is performed by determining the sign of the difference between consecutive sample results. Increasing concentrations are assigned a value of one, equal concentrations are assigned a value of zero, and decreasing concentrations are assigned a value of negative one. These signs are used to determine the Mann-Kendall statistic (S) which is the sum of the positive values and the negative values. The result is used in conjunction with the confidence in the trend to determine the concentration trend. The confidence in the trend is determined from a Kendall probability table using the Mann-Kendall S result and the number of samples. Concentration trends can be used to qualitatively evaluate the stability of a plume. Sampling locations where the Mann-Kendall S is greater than zero and have a high confidence (>90%) are assigned Probably Increasing (PI) or Increasing (I). Sample locations where Mann-Kendall S is less than zero and have high confidence are assigned Probably Decreasing (PD) or Decreasing (D). Sampling locations where confidence is low are assigned No Trend (NT) or Stable (S) depending on the coefficient of variation (COV).

Linear Regression Analysis is a parametric procedure also useful for analyzing trends over time. This approach interprets the log slope of the regression line to evaluate concentration trends and the statistical confidence in those trends. Assuming the sign (i.e., positive or negative) of the estimated log slope is correct, a level of confidence that the slope is not zero can be easily determined. Thus, regardless of a goodness of fit, the overall trend in the data may be ascertained, where low levels of confidence correspond to “Stable” or “No Trend” conditions (depending on the degree of scatter) and higher levels of confidence indicate the stronger likelihood of a trend. The COV, defined as the standard deviation divided by the average, is used as a secondary measure of scatter to distinguish between “Stable” or “No Trend” conditions for negative slopes.

7.3. RESULTS

The following statements summarize the MAROS statistical trending evaluation (as shown in the reports presented in Appendix H):

- Cleanup has not been attained for the following COCs at the given wells:
  - alpha-BHC in BF-2; BF-2D; FU; MW-5BR; MW-6BR; NUS-3D; and QD. Note that alpha-BHC is also indicated as not having attained cleanup at 13 other wells (i.e., BF-4; GU; MW-2BR; MW-2I; MW-2S; MW-3BR; MW-3S; MW-4BR; MW-4S; MW-7BR; NUS-2D; NUS-3S; and UU). This constituent was not detected in these wells, and this is a result of the reporting limit being greater than the remedial goal;
  - Arsenic in BF-2; BF-2D; MW-2BR; MW-4BR; MW-5BR; MW-6BR; NUS-3D; NUS-3S; and UU;
  - Dinoseb in QD;
  - Trichloroethene in BF-5; MW-7BR; QD; and UU; and
  - Vinyl chloride in BF-2; BF-2D; and MW-5BR.

- Under current sample variability, the following require greater than three additional rounds of concentration data to reach statistical significance:
  - Arsenic in MW-4BR; MW-6BR; NUS-3D; and NUS-3S;
  - Dinoseb in QD; and
  - Trichloroethene in BF-2.

- Results of the trending analyses from the Mann-Kendall and Linear Regression tests generally agree. Limited differences were noted, such as for arsenic in BF-5, trichloroethene in QD and UU, and vinyl chloride in MW-6BR. A summary of the statistical trend analysis results is provided in Table 7.

- Decreasing or probably decreasing trends were noted in wells BF-2 (alpha-BHC, arsenic, and trichloroethene); BF-2D (alpha-BHC, arsenic); BF-4 (arsenic); BF-5 (arsenic): MW-5BR (alpha-BHC, arsenic, and vinyl chloride); MW-7BR (arsenic); and UU (trichloroethene).

Statistical results indicated probably increasing COC concentrations were identified for trichloroethene in QD and vinyl chloride in BF-2D and MW-6BR.

7.4. OPTIMIZATION

A second module of MAROS was utilized to evaluate the well data set for optimization. Optimization was evaluated in terms of sampling frequency as well as analyte quantity. Using the revised parameters, the identified source and plume wells were evaluated to determine what, if any sampling parameter might be optimized. MAROS does not evaluate site delineation wells for optimization, because these wells by their explicit analytical results (i.e., years of non-detect results) indicate that the wells are observational.

Appendix H presents a memo defining and explaining the new MAROS parameters and presents the optimization module results. Site contaminates including Alpha-BHC, Arsenic, TCE, and vinyl chloride were evaluated. Dinoseb was not evaluated due to a lack of sufficient data (number of wells and number of sampling rounds) for optimization calculations.

7.5. RESULTS

The optimization results indicate that the current 15-month frequency is likely appropriate for the site. The calculations indicated that for most wells and contaminants a biennial (every other year) frequency was acceptable. However, wells BF-2 and BF-2D indicated a need for more frequent monitoring for Vinyl Chloride (annual and quarterly, respectively) as determined by concentration trends. This finding is indicative of the overall appropriateness of the current 15-month frequency for the present effort.

The results also indicated that the sampling suite for select wells could be reduced but no well within the source/plume area was found to be removable from the sampling regime for all site

COCs. The findings included the acceptable removal of the following analytical parameters for the following wells:

- Alpha-BHC – No Reduction Recommended
- Arsenic – Not required for MW-5BR and MW-7BR
- TCE – Not required for BF-2 and MW-5BR
- Vinyl Chloride – No Reduction Recommended

There is limited benefit for the site to reduce the sampling suite. Recommendations for dropping TCE are counter indicative of the recommendations for Vinyl Chloride. However, the findings for ceasing collection of metals parameters (Arsenic) for MW-5BR and MW-7BR will be retained for future consideration.

Delineation well sampling frequency can be reduced or discontinued at the stakeholder's discretion. Site delineation wells include: NUS-3D, NUS-3S, NUS-2D, MW-4BR, MW-4S, MW-1BRS, MW-1BRD, MW-2BR, MW-2I, MW-2S, MW-3S, MW-3BR, FU, GU, OU, and MW-8BR. However, these wells should not be abandoned until trend analysis indicates plume stability or pull back past an interior existing well. Further, sampling of delineation wells should be expanded if contaminant concentration changes are noted in the source or tail wells of the monitoring network at a later date.

Appendix I presents historical groundwater concentrations for site COCs for each year each site wells have been sampled. Sampling date range from 2003 to present for select wells and contaminants. For reference, site remedial activities, including source area removal actions were completed by 2008 and the impacts of source area removal and natural attenuation can be observed in select wells as a function of lower COC concentrations over time in groundwater.

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8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1. CONCLUSIONS

The groundwater flow regime at the CIC Study Area is comprised of an overburden and weathered bedrock groundwater flow system and the bedrock groundwater flow system. Groundwater in the overburden and bedrock aquifers is contaminated at the CIC Study Area with the primary sources being COC-impacted soil and source materials removed as part of the OU2 remedy, and historic surface water drainage patterns from the CIC Site. Based on the data collected from 2003 to date, primary COCs include metals (specifically arsenic), BHC pesticides (specifically alpha-BHC), herbicides (specifically dinoseb), and VOCs. Figures 5 through 13 depict contaminant concentrations for the primary COCs and vinyl chloride from the April 2018 sample event for the overburden/transition wells and bedrock wells, respectively. Table 6 presents arsenic, vinyl chloride, and alpha BHC concentrations over time to evaluate contaminant concentration trends for Monitoring Wells BF-2, BF-2D, and MW-5BR.

In the overburden aquifer, groundwater concentrations equaled or exceeded the established groundwater remediation goals at transition well location QD for TCE, Methylene Chloride, 1,2-Dichloroethane and 1,2-Dichloropropane. No other analytes exceeded the established groundwater remediation goals in the overburden aquifer. Transition well QD is located in the central portion of the CIC Study Area and TCE concentrations have ranged from 3.0 µg/L to not detected over the 16 LTM sample events conducted to date.

In the bedrock aquifer, groundwater concentrations exceeded the established groundwater remediation goals at five monitoring well locations sampled during this LTM Event for the following constituents:

Monitoring Well BF-2

- 10 J µg/L for Vinyl Chloride (RG of 1.0 µg/L)
- 4.8 J µg/L for Benzene (RG of 1.0 µg/L)
- 4.3 J µg/L for 1,2-DCA (RG of 2.0 µg/L)
- 0.53 J µg/L for alpha-BHC (RG of 0.02 µg/L)
- 0.24 J for beta-BHC (RG of 0.04 µg/L)
- 332 µg/L for Arsenic (RG of 3.0 µg/L)

Monitoring Well BF-2D

- 63 J µg/L for Vinyl Chloride (RG of 1.0 µg/L)
- 11 J µg/L for Benzene (RG of 1.0 µg/L)
- 0.18 µg/L for alpha-BHC (RG of 0.02 µg/L)
- 0.090 for beta-BHC (RG of 0.04 µg/L)

- 4.9 µg/L for Arsenic (RG of 3.0 µg/L)

Monitoring Well BF-2BR
- 3.9 µg/L for Arsenic (RG of 3.0 µg/L)

Monitoring Well MW-4BR
- 3.1 µg/L for Arsenic (RG of 3.0 µg/L)

Monitoring Well MW-5BR
- 3.7 J µg/L for 1,2-DCA (RG of 2.0 µg/L)
- 17 J µg/L for Vinyl Chloride (RG of 1.0 µg/L)
- 14 J µg/L for Benzene (RG of 1.0 µg/L)
- 0.099 µg/L for alpha-BHC (RG of 0.02 µg/L)
- 0.071 for beta-BHC (RG of 0.04 µg/L)
- 118 µg/L for Arsenic (RG of 3.0 µg/L)

No other compounds exceeded the established groundwater remediation goals in the bedrock aquifer.

The groundwater concentration for dinoseb at Transition Well QD (7.7 J µg/L) exceeded the established groundwater remediation goal of 7.0 µg/L. (Note the dinoseb result was non-detected [at 8.9 UJ µg/L] for the primary sample for Transition Well QD; the result of 7.7 J µg/L was detected in the duplicate sample for Transition Well QD.)

Monitoring well nest location BF-2, BF-2D and MW-5BR provides a vertical profile of contaminant concentrations in the northeastern corner of the CIC Site and exhibits the broadest range of contaminants (VOCs, pesticides, and arsenic) above the established remediation goals in the CIC Study Area. The addition of monitoring well BF-2BR to this well nest location during this LTM Event will help further delineate the vertical extent of Site contaminants. Since BF-2BR was sampled for the first time during this event, no comparison graphs were generated. However, BF-2BR concentrations will be used in the following comparison discussions for Site concentrations. Table 6 presents arsenic, vinyl chloride, and alpha BHC concentrations over time to evaluate contaminant concentration trends for monitoring wells BF-2, BF-2D, and MW-5BR. Other wells within the CIC Study Area have detections of Site COCs, however they are either below Site RGs or they do not consistently exhibit concentrations for all three compounds.

The arsenic concentration trend at shallow bedrock aquifer monitoring well BF-2 decreased consistently from 2003 to 2016 (12,700 µg/L in 2003, 370 µg/L in 2012, 330 µg/L in 2013, 300 µg/L in 2014 to 286 µg/L in 2016), though at a more gradual rate of decrease in the recent past. The arsenic concentration slightly increased to 332 µg/L during the April 2018 Event. A decreasing

trend is apparent at monitoring well MW-5BR where arsenic concentrations decreased consistently from 2003 to 2011 and appears to presently fluctuate between 170 and 130 µg/L over the last five LTM sample events. However, arsenic was detected at its lowest concentration during the April 2018 LTM Event with a value of 118 µg/L. The historical arsenic concentration trends indicate that the OU2 soil remedial action has had a beneficial effect on the shallow and intermediate bedrock groundwater arsenic concentrations in the years immediately following the source area remediation. The recent slow rate of decline and/or fluctuating arsenic concentration trends in the shallow and intermediate bedrock aquifer may indicate the bedrock aquifer is approaching asymptotic arsenic concentrations and steady state conditions with potential residual arsenic contamination.

Arsenic concentrations appear to fluctuate over time in the deeper sections of the bedrock aquifer. At deep bedrock monitoring well location BF-2D, arsenic decreased from 25.9 µg/L in 2003 to non-detect during 6th LTM Event in 2009. Arsenic concentrations increased in subsequent events to 16 µg/L in 2010 and have since steadily fluctuated between 5.1 µg/L to 3.0 µg/L during the past five LTM Events. In addition, arsenic was detected in the newly installed monitoring well BF-2BR above the Site RG at 3.9 µg/L (Site RG for arsenic is 3.0 µg/L) during the April 2018 LTM Event. BF-2BR is screen approximately 30-feet deeper into bedrock than BF-2D. The BF-2BR Arsenic detection is slightly above the Site RG which could possibly be attributed to the naturally occurring arsenic at the Site.

Vinyl chloride concentrations have tended to fluctuate in BF-2, BF-2D and MW-5BR following the 2005 OU2 soil remediation with vinyl chloride concentrations increasing with depth in the aquifer. The range of vinyl chloride concentrations include 5.0 µg/L to 29 µg/L at BF-2, from 17 µg/L to 96 µg/L at MW-5BR and from 24 µg/L to 110 µg/L at BF-2D. Vinyl chloride was only detected at monitoring wells BF-2, BF-2D, and MW-5BR during the April 2018 LTM Event. Benzene and 1,2-DCA are also consistently present in these wells above the established remediation goals.

From 2012 to 2018, alpha-BHC concentrations continue to show a decreasing trend from 3.5 µg/L to 0.18 µg/L at BF-2D, from 3.2 µg/L to 0.53 J µg/L at BF-2, and from 1.5 µg/L to 0.10 µg/L at MW-5BR. Beta-BHC concentrations decreased from 0.68J µg/L to 0.09 µg/L at BF-2D, from 0.96 J µg/L to 0.24 J µg/L at BF-2, and from 0.6 J µg/L to 0.07 µg/L at MW-5BR. Historical analytical laboratory results for dinoseb in monitoring well BF-2 indicates concentration had decreased from 24 µg/L in 2003 to non-detect in 2008. During the April 2018 LTM Event, dinoseb samples were only collected from transition well QD, existing monitoring well FU, and newly installed monitoring well BF-2BR. Dinoseb was non-detected in FU and BF-2BR; however dinoseb was detected in the duplicate sample for QD at 7.7 J µg/L, which is above the Site RG of 7.0 µg/L.

The established LTM sampling program effectively monitors the nature and extent of contamination and attenuation of contaminants over time at the downgradient CIC Site property boundary.

Based on the data evaluation and trend analysis conducted for the April 2018 LTM Event, the following general conclusions were made:

- For all monitoring well locations where alpha-BHC was detected greater than the RG during this event, the concentrations are decreasing or stable;
- For all monitoring well locations where arsenic was detected greater than the RG during this event, the concentrations are decreasing or stable;
- For all monitoring well locations where TCE was detected greater than the RG during this event, the concentrations are decreasing or stable.
- For all monitoring well locations where Vinyl Chloride was detected greater than the RG during this event, the concentrations are stable or potentially increasing;
- No concentrations of contaminants above the RGs were detected in wells located along the boundary of the Classification Exception Area (CEA); and
- Based on the existing LTM well network, the horizontal extent of the CIC Site-related contaminant plume is stable.

Anticipated upcoming activities for the CIC Study Area include the following activities:

- Summer 2019 LTM Event. The Spring 2018 LTM Event was scheduled for March 2018, however due to weather conditions, the event was moved to April 2018. Based on our 15 month LTM program our next sampling event would be in June 2019.

An LTM Report will be prepared after each sampling event.

8.2. RECOMMENDATIONS

A re-evaluation is required after each LTM Event to assess whether changes to the LTM program are needed. Currently, based on the data evaluation and MAROS analysis, there are no recommended changes to the established LTM sampling program, or indication that any existing monitoring wells should be abandoned. The installation of BF-2BR bedrock monitoring well in the vicinity of the former OU2 soil contamination source area was installed before the April 2018 LTM to evaluate potential contaminant migration, and was added to the LTM program accordingly.

During the Spring 2015 LTM Event, USEPA recommended sampling of monitoring wells UU, MW-2I, and NUS-3D for VOCs, pesticides, and arsenic to further evaluate potential contaminant migration at the CIC Site. The wells were again sampled during the December 2016 and April 2018 LTM Events. Analytical results for monitoring well UU indicate that the Site remediation

goal of 3 µg/L has been exceeded during two consecutive events for arsenic at concentrations of 4.7 and 6.6 µg/L, however concentrations dropped to below Site remediation goals during the April 2018 LTM Event at a concentration of 1.6 µg/L. Continued sampling of monitoring well UU appears warranted however, sampling of MW-2I and NUS-3D could be removed from the 2019 sample event and still maintain the appropriate LTM monitoring network.

The following recommendation will improve the CIC field data collection methods and ensure the integrity of the groundwater monitoring well network:

- Continue communication efforts with the former Metroplex property in order to access MW-6BR prior to the 2019 LTM Event in order to assess monitoring well conditions. Should the property owner not voluntarily remove the current 15 feet of soil material from the well, negotiations for access, well abandonment and re-installation at an adjacent, accessible location may need to be considered.

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9.0 REFERENCES

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FIGURES

Figure 1	Site Map
Figure 2	Geologic Cross Section A-A’
Figure 3	Groundwater Contour Map, Shallow and Transitional Wells (April 2018)
Figure 4	Groundwater Contour Map, Bedrock Wells (April 2018)
Figure 5	Shallow and Transitional Wells TCE Concentrations (April 2018)
Figure 6	Bedrock Wells TCE Concentrations (April 2018)
Figure 7	Shallow and Transitional Wells Vinyl Chloride Concentrations (April 2018)
Figure 8	Bedrock Wells Vinyl Chloride Concentrations (April 2018)
Figure 9	Shallow and Transitional Wells Alpha BHC Concentrations (April 2018)
Figure 10	Bedrock Wells Alpha BHC Concentrations (April 2018)
Figure 11	Shallow and Transitional Wells Dinoseb Concentrations (April 2018)
Figure 12	Bedrock Wells Dinoseb Concentrations (April 2018)
Figure 13	Shallow and Transitional Wells Arsenic Concentrations (April 2018)
Figure 14	Bedrock Wells Arsenic Concentrations (April 2018)

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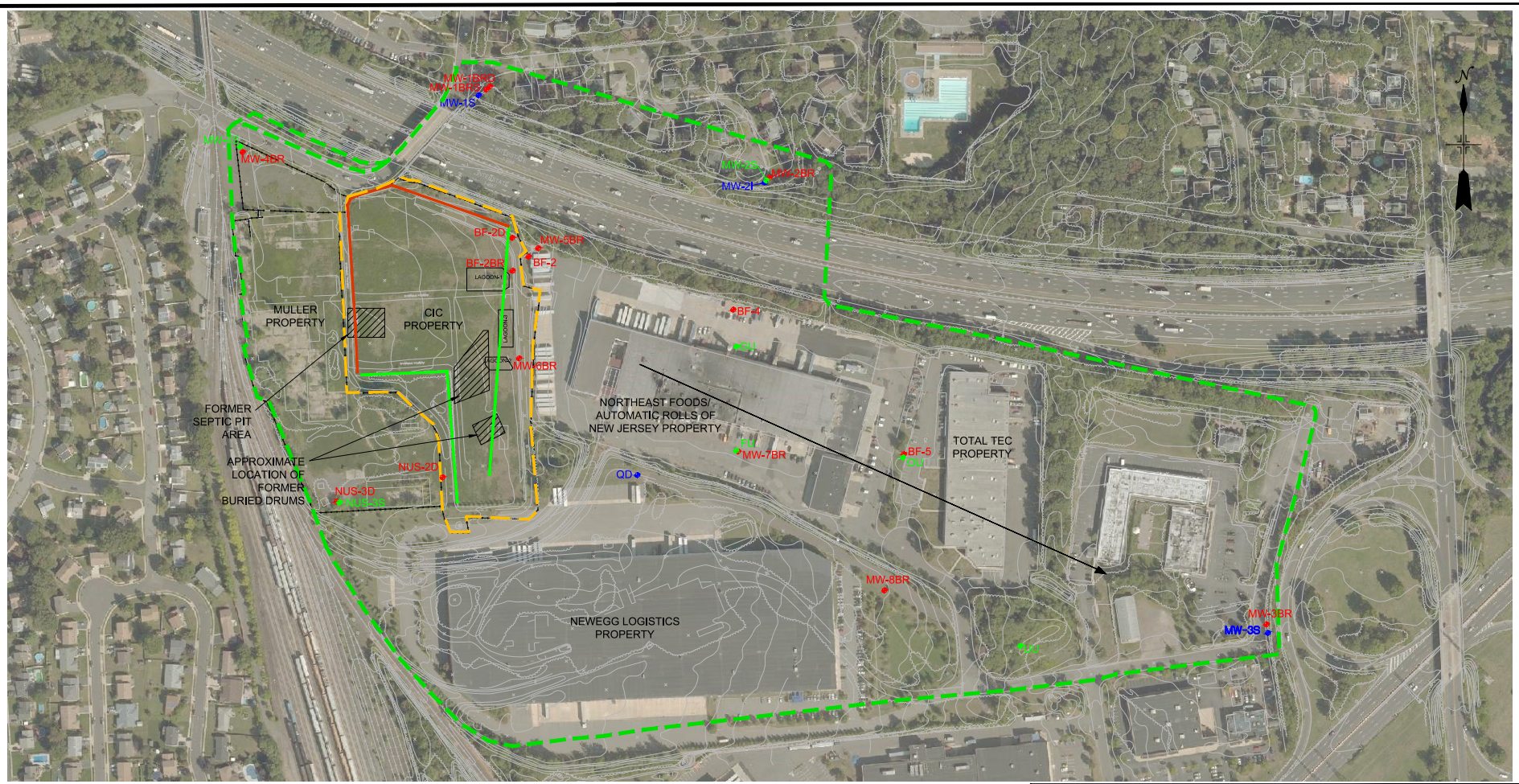

LEGEND:

- OVERBURDEN MONITORING WELL
- TRANSITIONAL MONITORING WELL
- BEDROCK MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA
- FENCE
- GENERALIZED GROUNDWATER FLOW DIRECTION
- GRASS SWALE
- RIP RAP CHANNEL

SOURCE: O'BRIEN & GERE, 2009

NOTES:

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 1–SEPTEMBER 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 1

STUDY AREA

SDV
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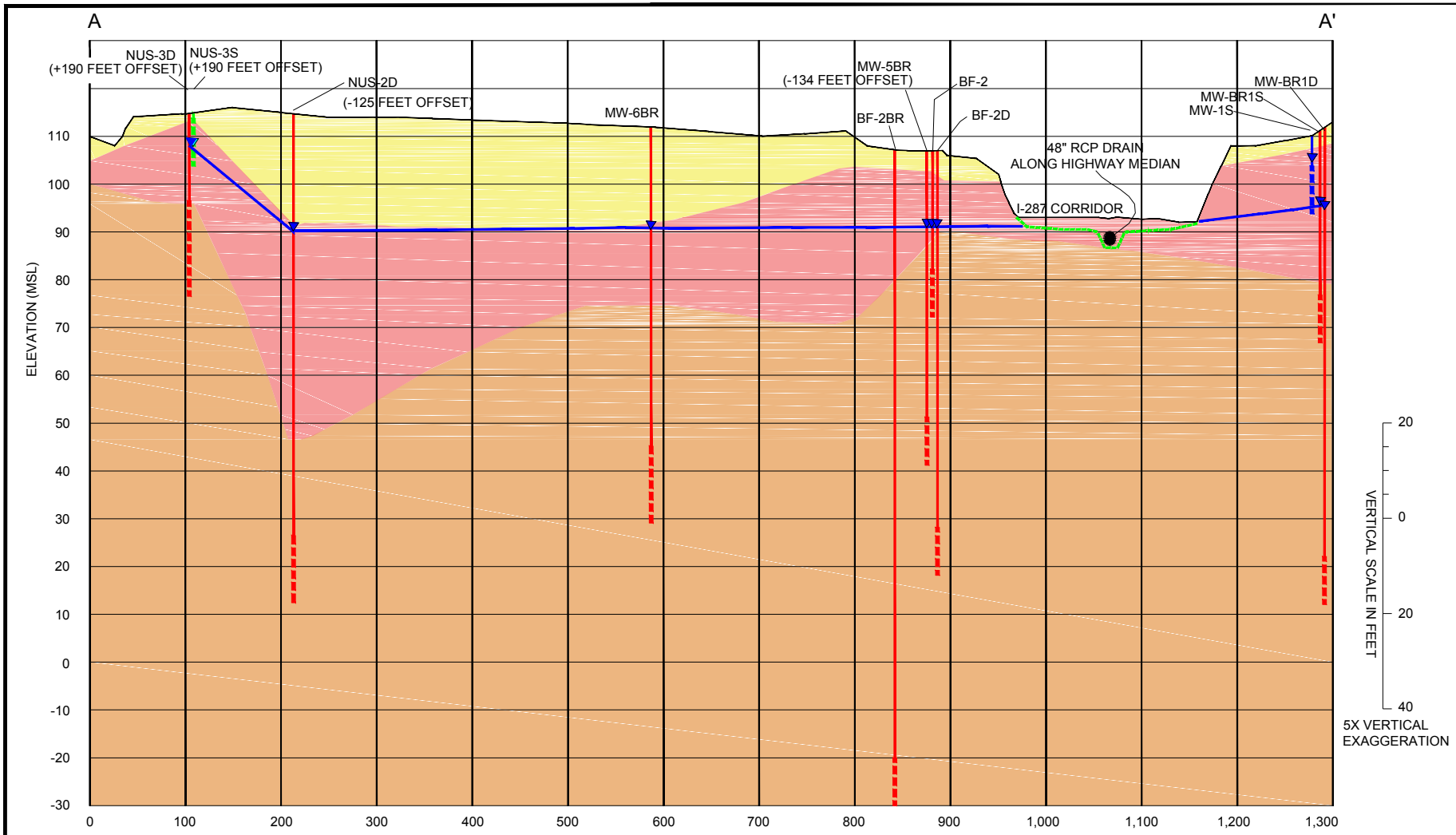

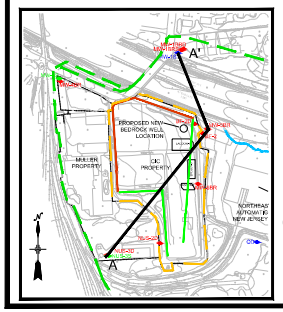

CROSS SECTION
LOCATION MAP

OVERBURDEN MONITORING WELL

TRANSITION MONITORING WELL

BEDROCK MONITORING WELL

OVERBURDEN

WEATHERED BEDROCK

BEDROCK ZONE

DEEP POTENTIOMETRIC
SURFACE

ESTIMATED I-278
BACKFILL LIMITS

0 500 1000 Feet

SOURCE:

REVISION: A

FILE: CIC FIGURE 2-SEPTEMBER 2018-REV.DWG

Department of Army Corps
of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ

OU 4 GROUNDWATER

FIGURE 2

GEOLOGIC CROSS SECTION A-A'

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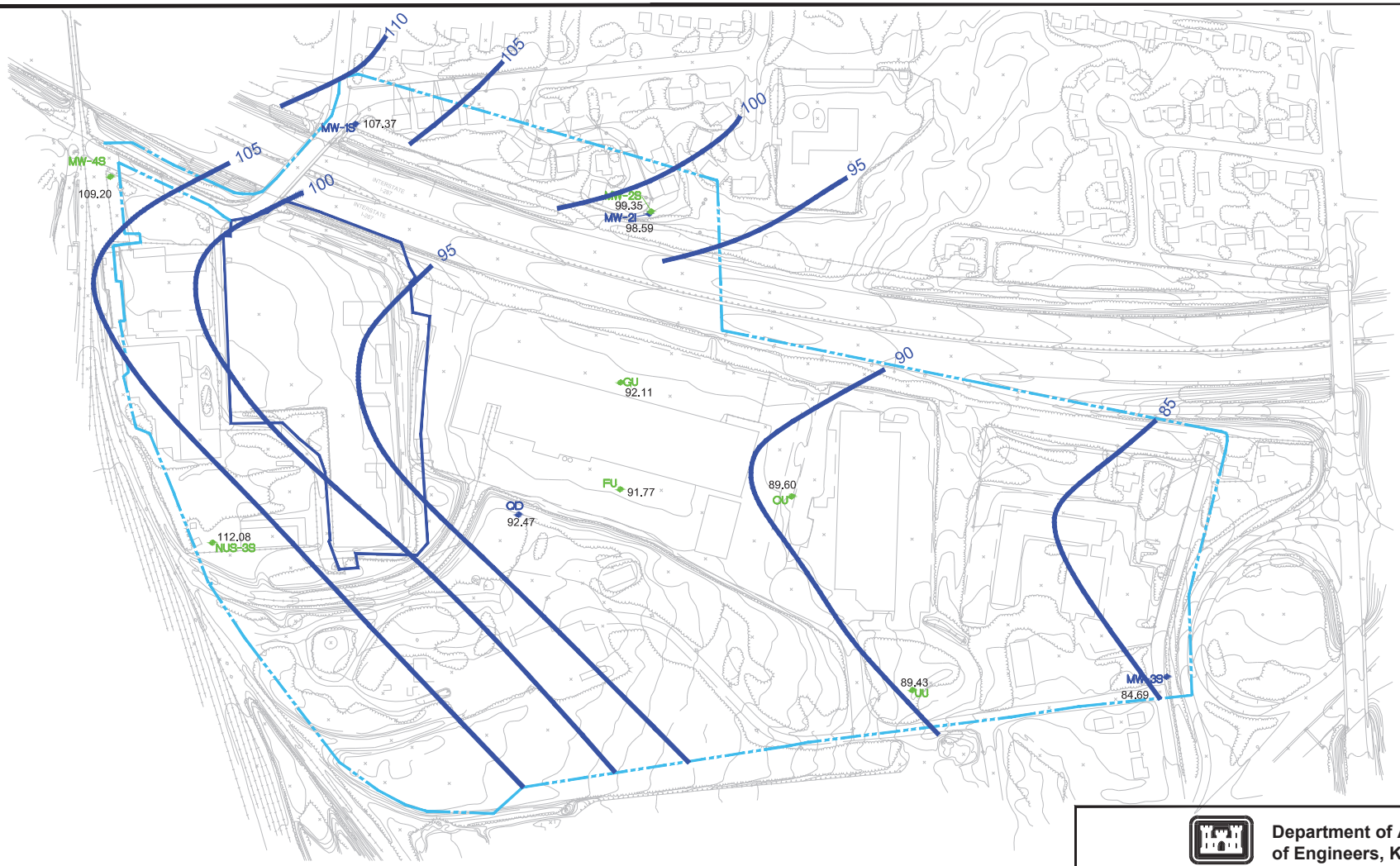

LEGEND:

- OVERBURDEN MONITORING WELL
- TRANSITIONAL MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 3_SHALLOW GW CONTOURS APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 3
GROUNDWATER CONTOUR MAP, SHALLOW AND TRANSITIONAL WELLS
(APRIL 2018)

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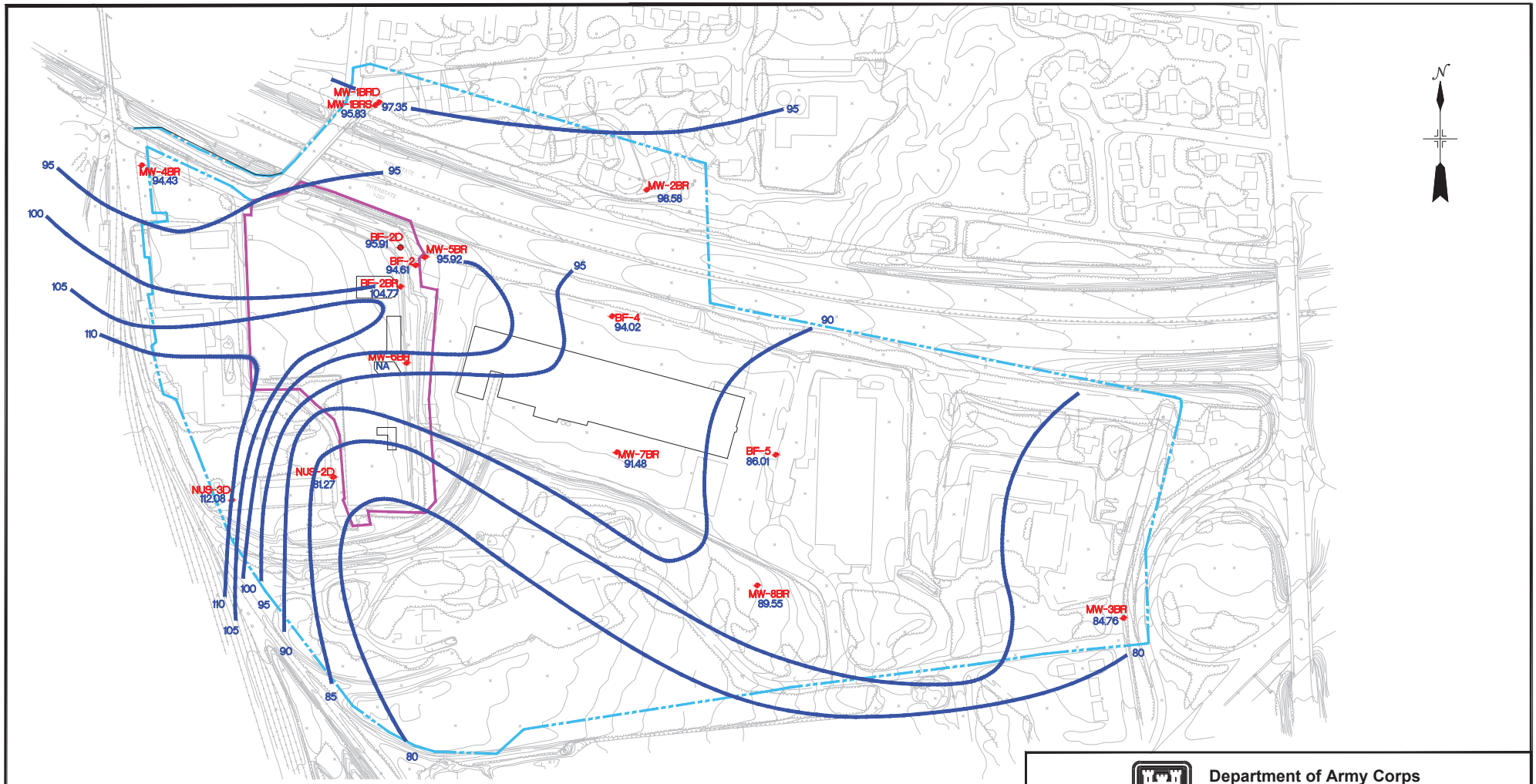

LEGEND:

- BEDROCK MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 4_BEDROCK GW CONTOURS APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 4
GROUNDWATER CONTOUR MAP,
BEDROCK WELLS
(APRIL 2018)

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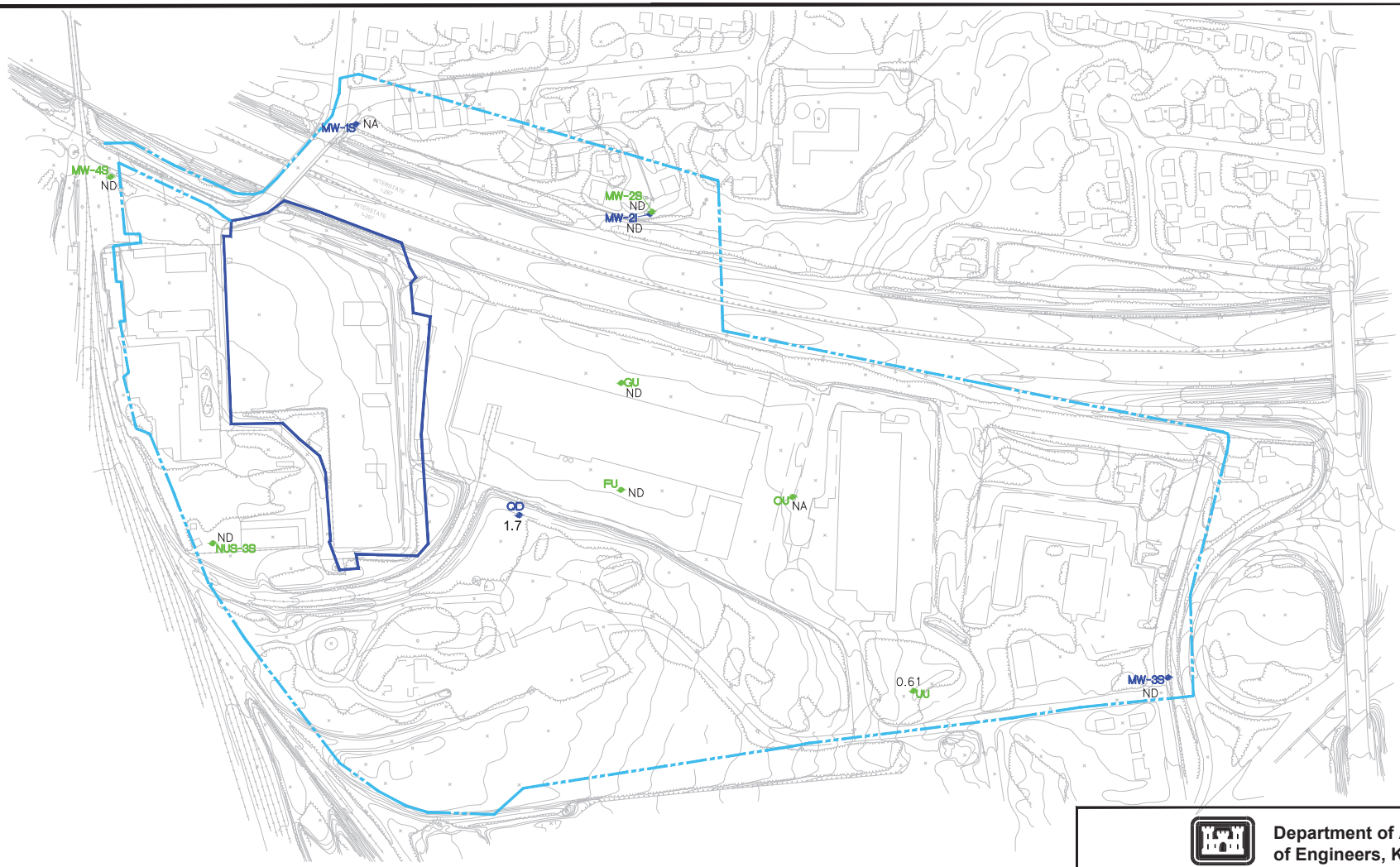
ENGINEERING & CONSTRUCTION IOI, JV



LEGEND:

- OVERBURDEN MONITORING WELL
- TRANSITIONAL MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:
TRICHLOROETHYLENE (TCE) CONCENTRATIONS IN ug\L
BOLD = EXCEEDS REMEDIAL GOAL (1.0 ug\L)
ND = NOT DETECTED
NA = NOT ANALYZED
ug\L = MICROGRAMS PER LITER

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 5-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 5
LONG TERM MONITORING NETWORK
SHALLOW AND TRANSITIONAL WELLS
DETECTED TCE CONCENTRATIONS
(APRIL 2018)

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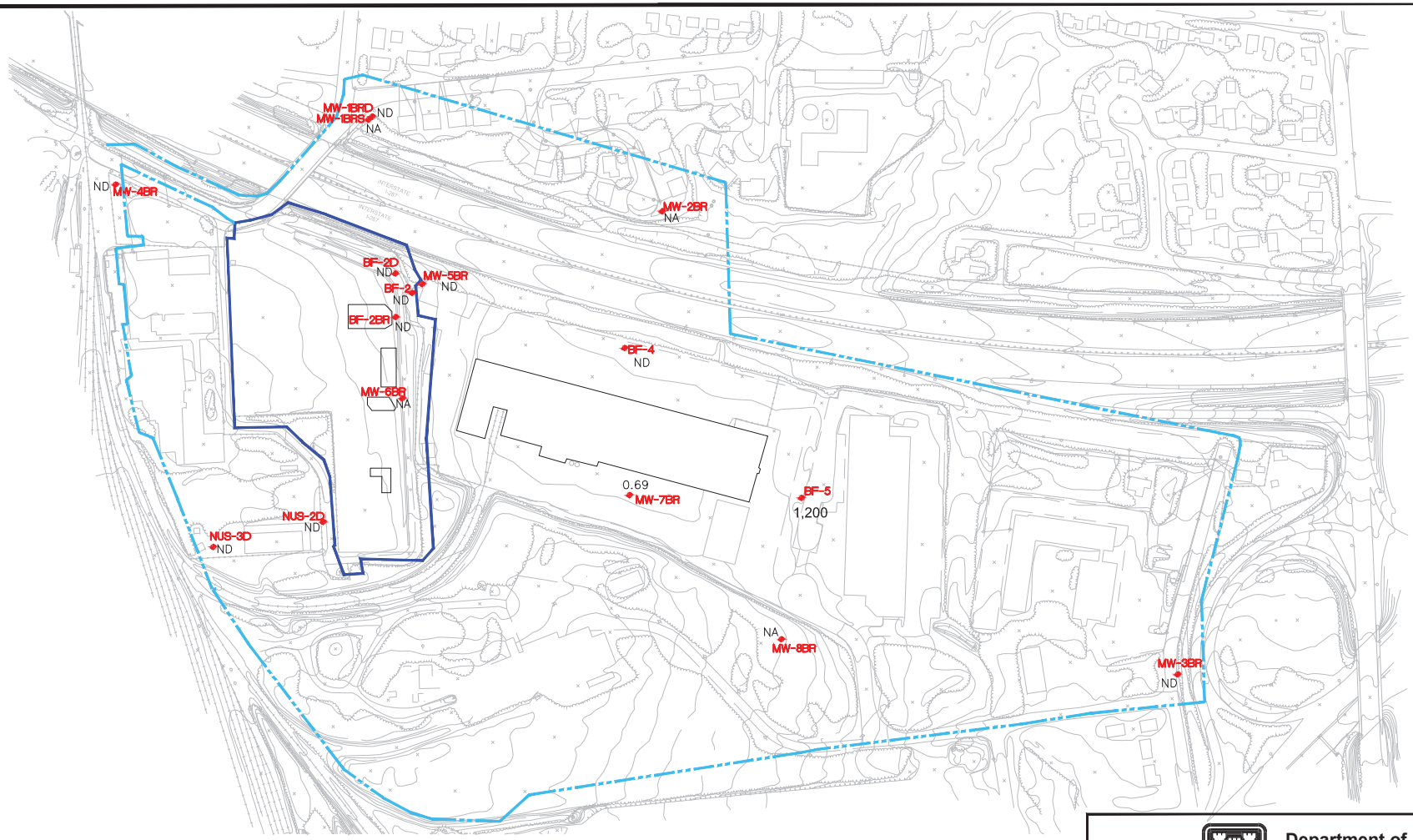
ENGINEERING & CONSTRUCTION IOI, JV



LEGEND:

- BEDROCK MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

TRICHLOROETHYLENE (TCE) CONCENTRATIONS IN ug\L

ND = NOT DETECTED

NA = NOT ANALYZED

J = ESTIMATED VALUE

BOLD = EXCEEDS REMEDIAL GOAL (1.0 ug\L)

ug\L = MICROGRAMS PER LITER

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 6-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ

OU 4 GROUNDWATER

FIGURE 6

LONG TERM MONITORING NETWORK

BEDROCK WELLS

DETECTED TCE CONCENTRATIONS

(APRIL 2018)

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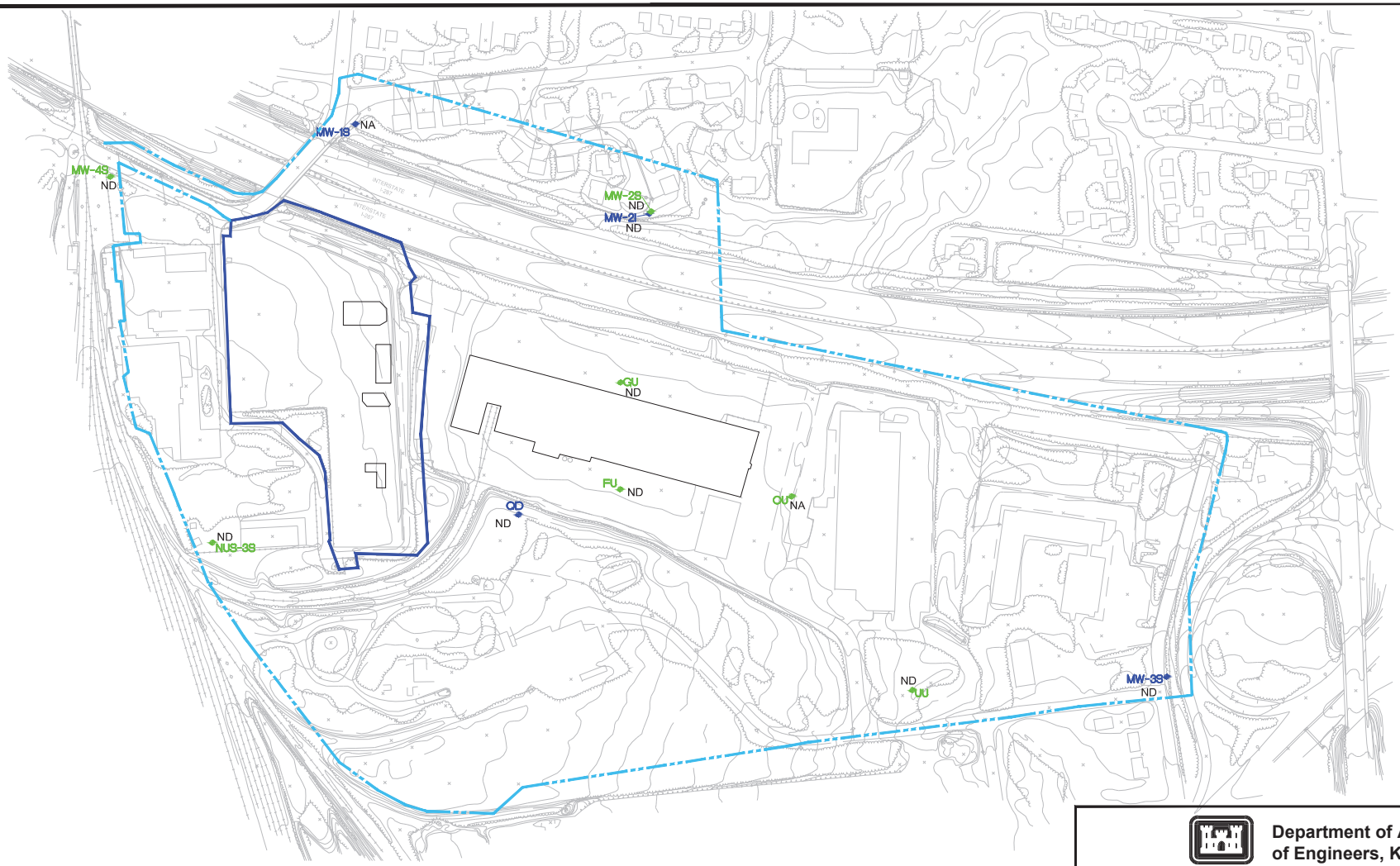

LEGEND:

- OVERBURDEN MONITORING WELL
- TRANSITIONAL MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

0 400 800 Feet

NOTES:

CONCENTRATIONS IN ug\L

ND = NOT DETECTED

NA = NOT ANALYZED

J = ESTIMATED VALUE

BOLD = EXCEEDS REMEDIAL GOAL (1.0 ug\L)

ug\L = MICROGRAMS PER LITER

REVISION: A

FILE: CIC FIGURE 7-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 7
LONG TERM MONITORING NETWORK
SHALLOW AND TRANSITIONAL WELLS
DETECTED VINYL CHLORIDE CONCENTRATIONS
(APRIL 2018)

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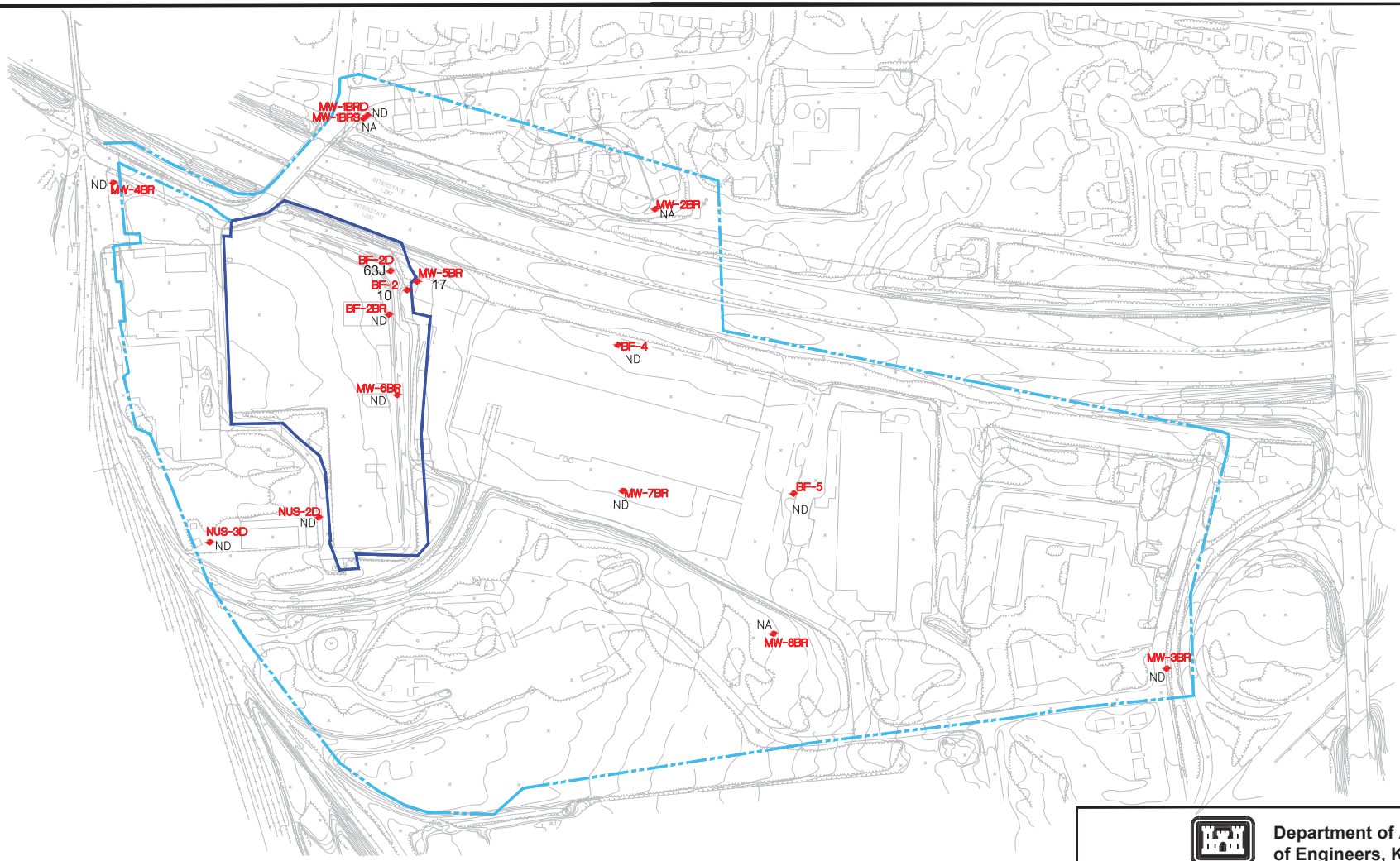

LEGEND:

- BEDROCK MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

CONCENTRATIONS IN ug\L
ND = NOT DETECTED
NA = NOT ANALYZED
BOLD = EXCEEDS REMEDIAL GOAL (1.0 ug\L)
ug\L = MICROGRAMS PER LITER
J = THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 8-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 8
LONG TERM MONITORING NETWORK
BEDROCK WELLS
DETECTED VINYL CHLORIDE CONCENTRATIONS
(APRIL 2018)

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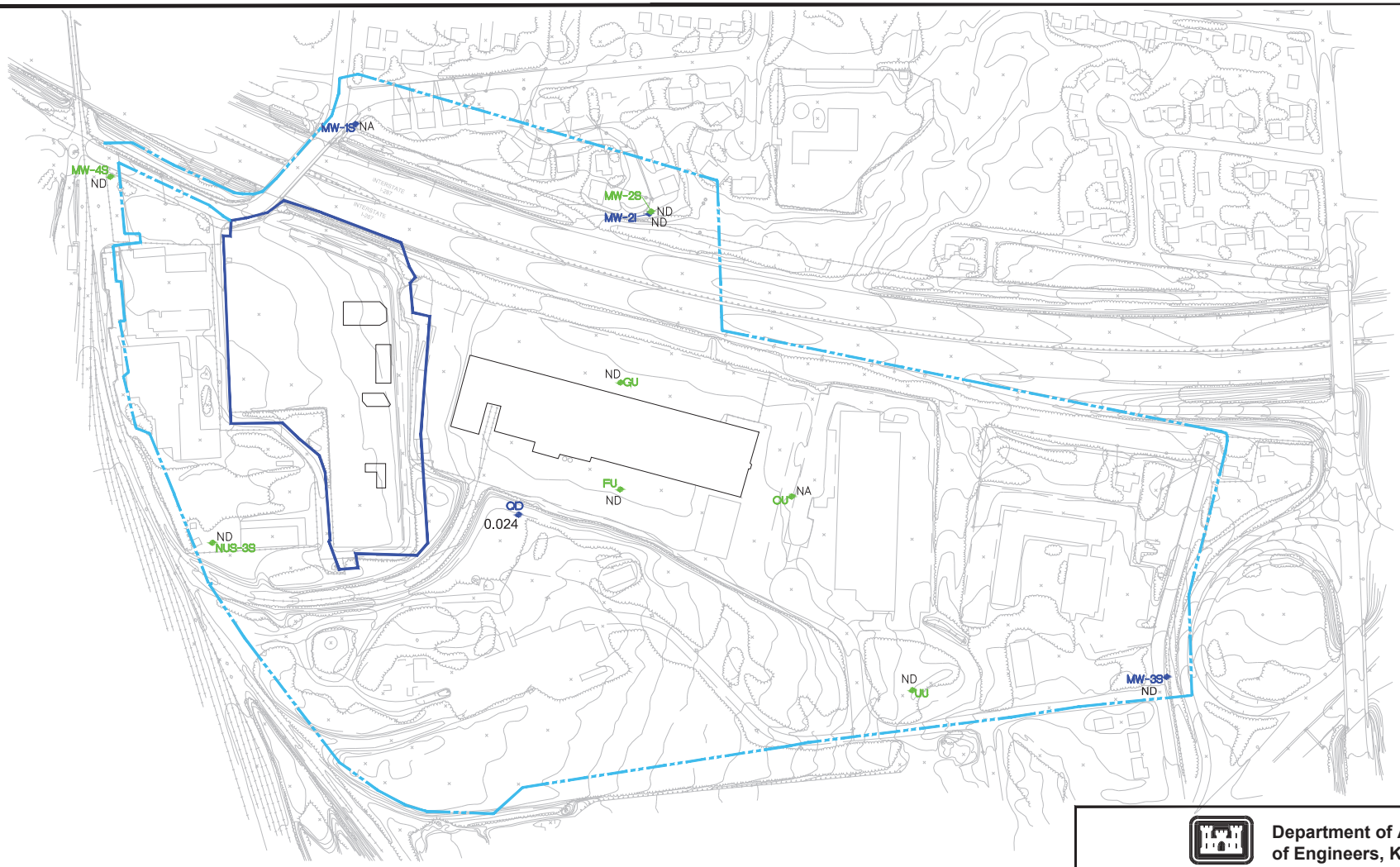

LEGEND:

- OVERBURDEN MONITORING WELL
- TRANSITIONAL MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

CONCENTRATIONS IN ug\L

ND = NOT DETECTED

NA = NOT ANALYZED

ug\L = MICROGRAMS PER LITER

BOLD = EXCEEDS REMEDIAL GOAL (0.02 ug\L)

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 9-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 9
LONG TERM MONITORING NETWORK
SHALLOW AND TRANSITIONAL WELLS
DETECTED ALPHA BHC CONCENTRATIONS
(APRIL 2018)

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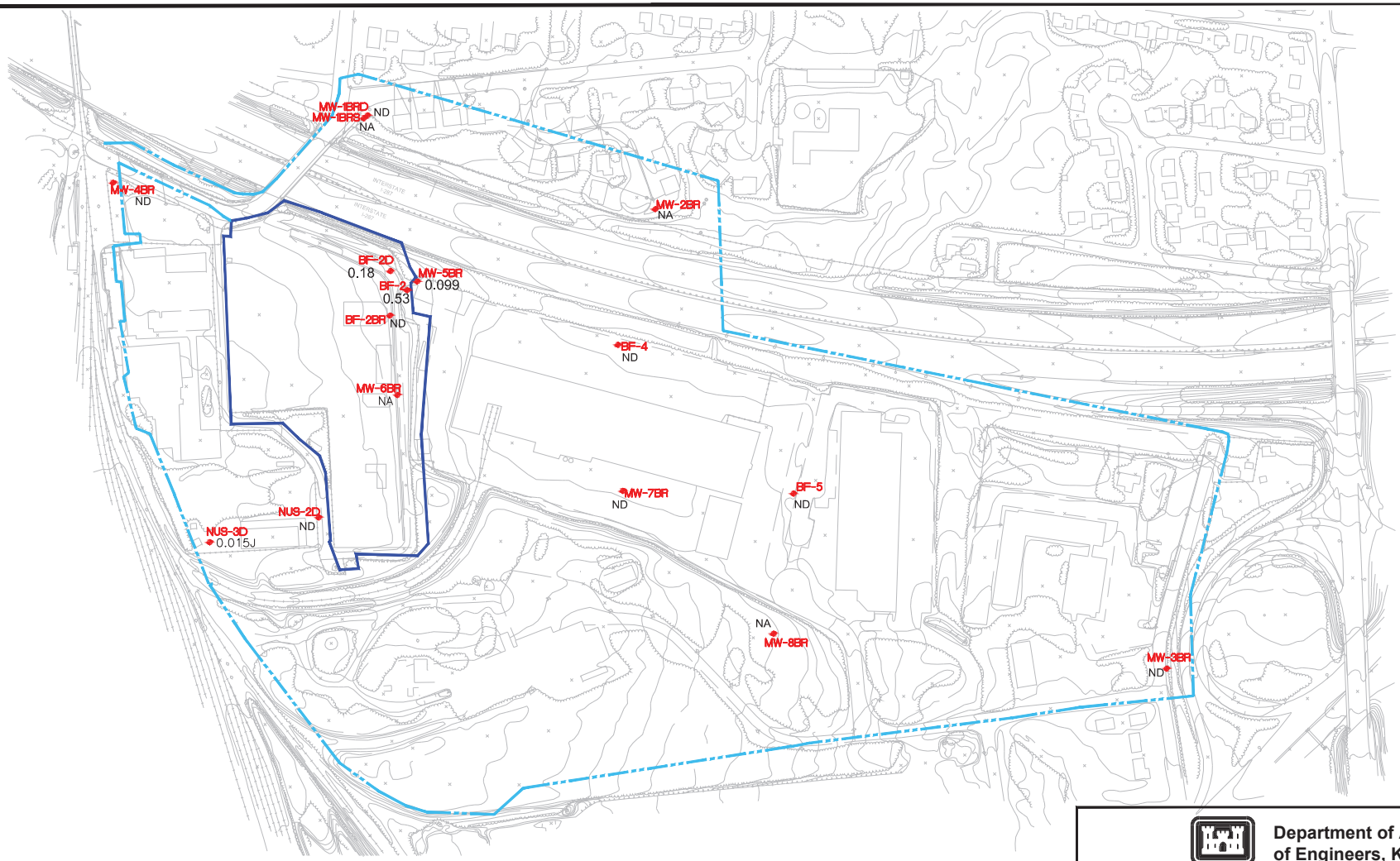

LEGEND:

- BEDROCK MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

CONCENTRATIONS IN ug\L
ND = NOT DETECTED
NA = NOT ANALYZED
BOLD = EXCEEDS REMEDIAL GOAL (0.02 ug\L)
ug\L = MICROGRAMS PER LITER
J = THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 10-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 10
LONG TERM MONITORING NETWORK
BEDROCK WELLS
DETECTED ALPHA BHC CONCENTRATIONS
(APRIL 2018)

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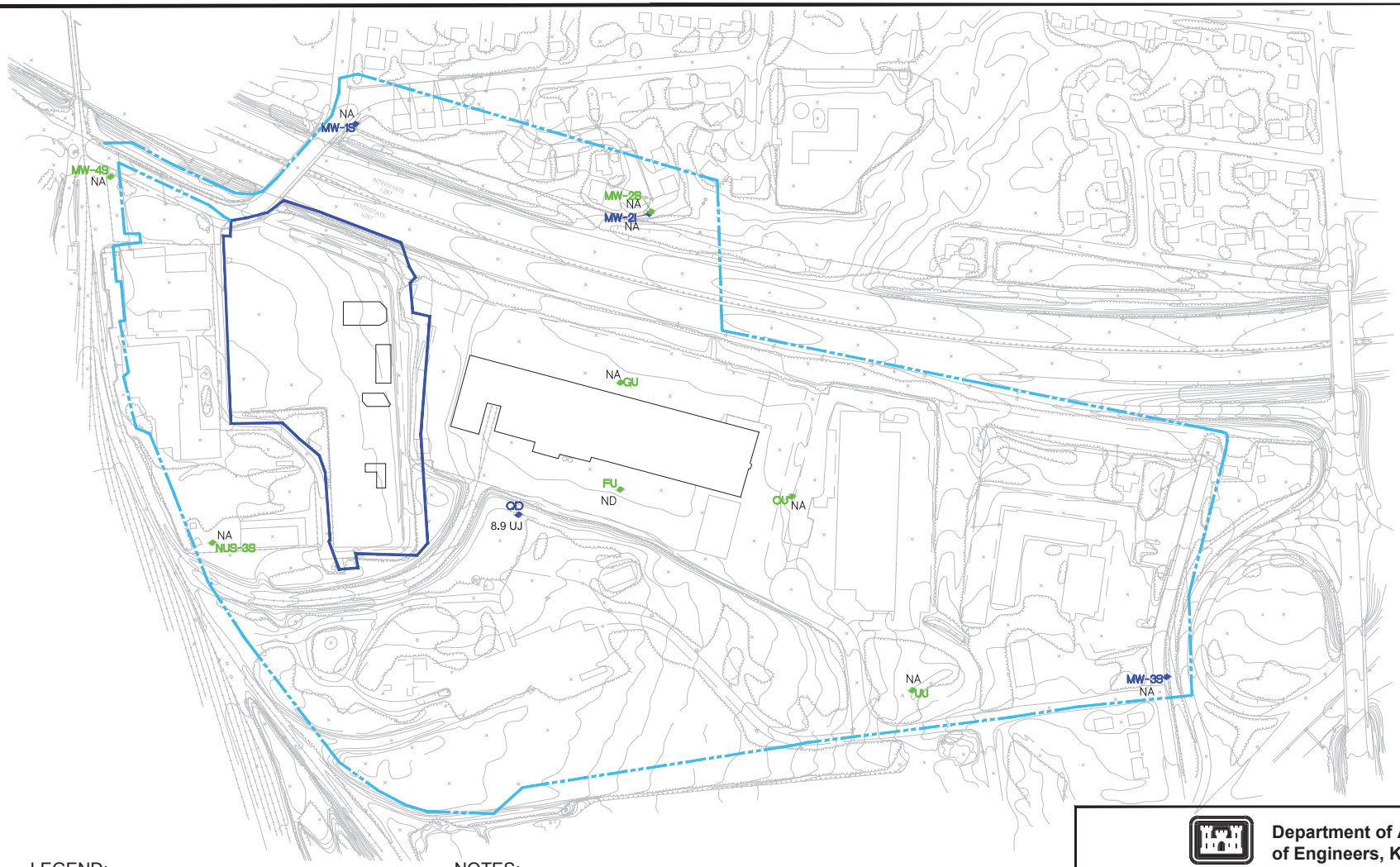

LEGEND:

- OVERBURDEN MONITORING WELL
- TRANSITIONAL MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

CONCENTRATIONS IN ug\L

ND = NOT DETECTED

NA = NOT ANALYZED

ug\L = MICROGRAMS PER LITER

UJ = THE ANALYTE WAS NOT DETECTED ABOVE THE REPORTED SAMPLE QUANTITATION LIMIT. HOWEVER, THE REPORTED QUANTITATION LIMIT IS APPROXIMATE AND MAY OR MAY NOT REPRESENT THE ACTUAL LIMIT OF QUANTITATION NECESSARY TO ACCURATELY AND PRECISELY MEASURE THE ANALYTE IN THE SAMPLE.

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 11-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 11
LONG TERM MONITORING NETWORK
SHALLOW AND TRANSITIONAL WELLS
DETECTED DINOSEB CONCENTRATIONS
(APRIL 2018)

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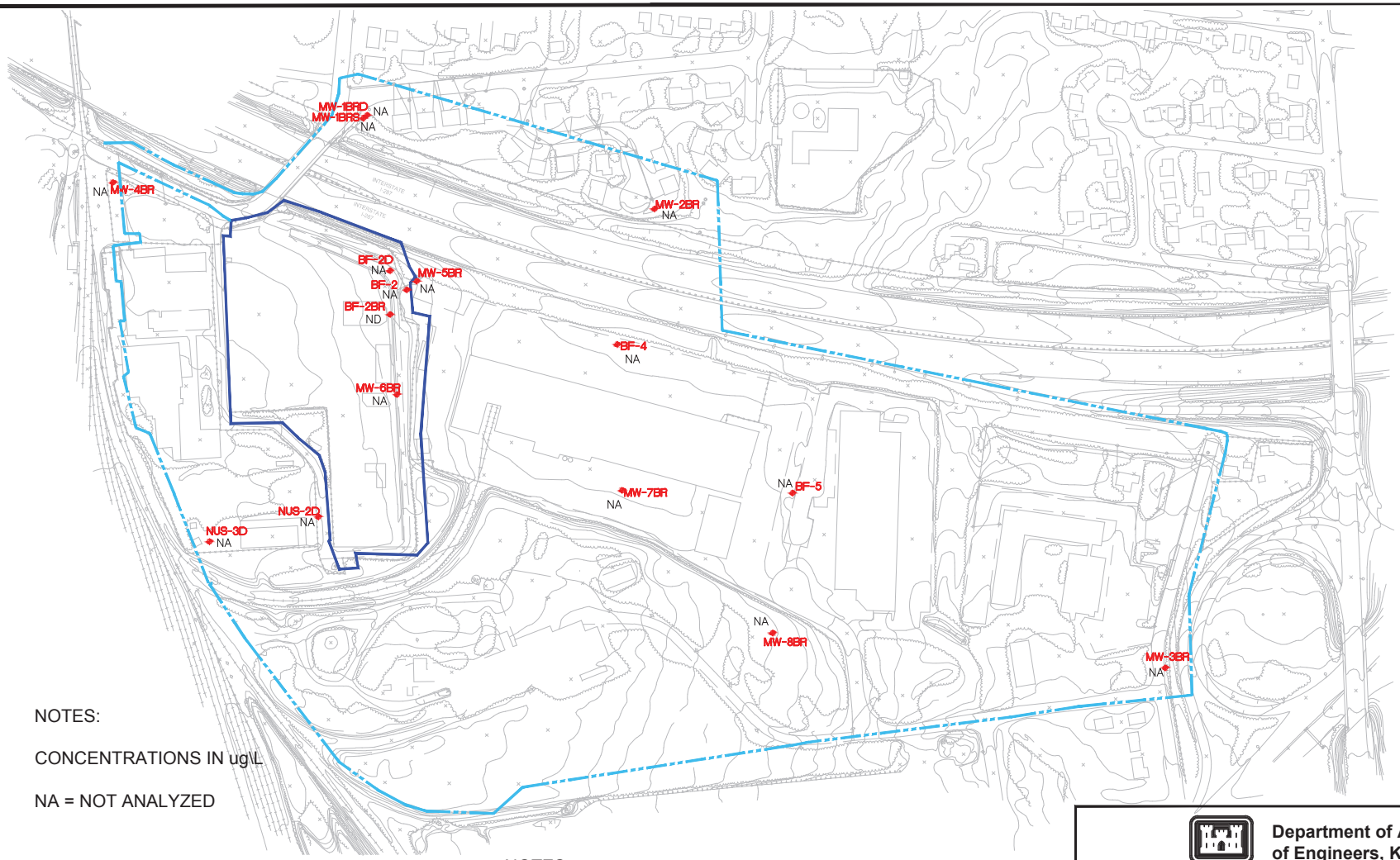

NOTES:

CONCENTRATIONS IN ug\L

NA = NOT ANALYZED

LEGEND:

- BEDROCK MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

CONCENTRATIONS IN ug\L

NA = NOT ANALYZED

ug\L = MICROGRAMS PER LITER

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 12–APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 12
LONG TERM MONITORING NETWORK
BEDROCK WELLS
DETECTED DINOSEB CONCENTRATIONS
(APRIL 2018)

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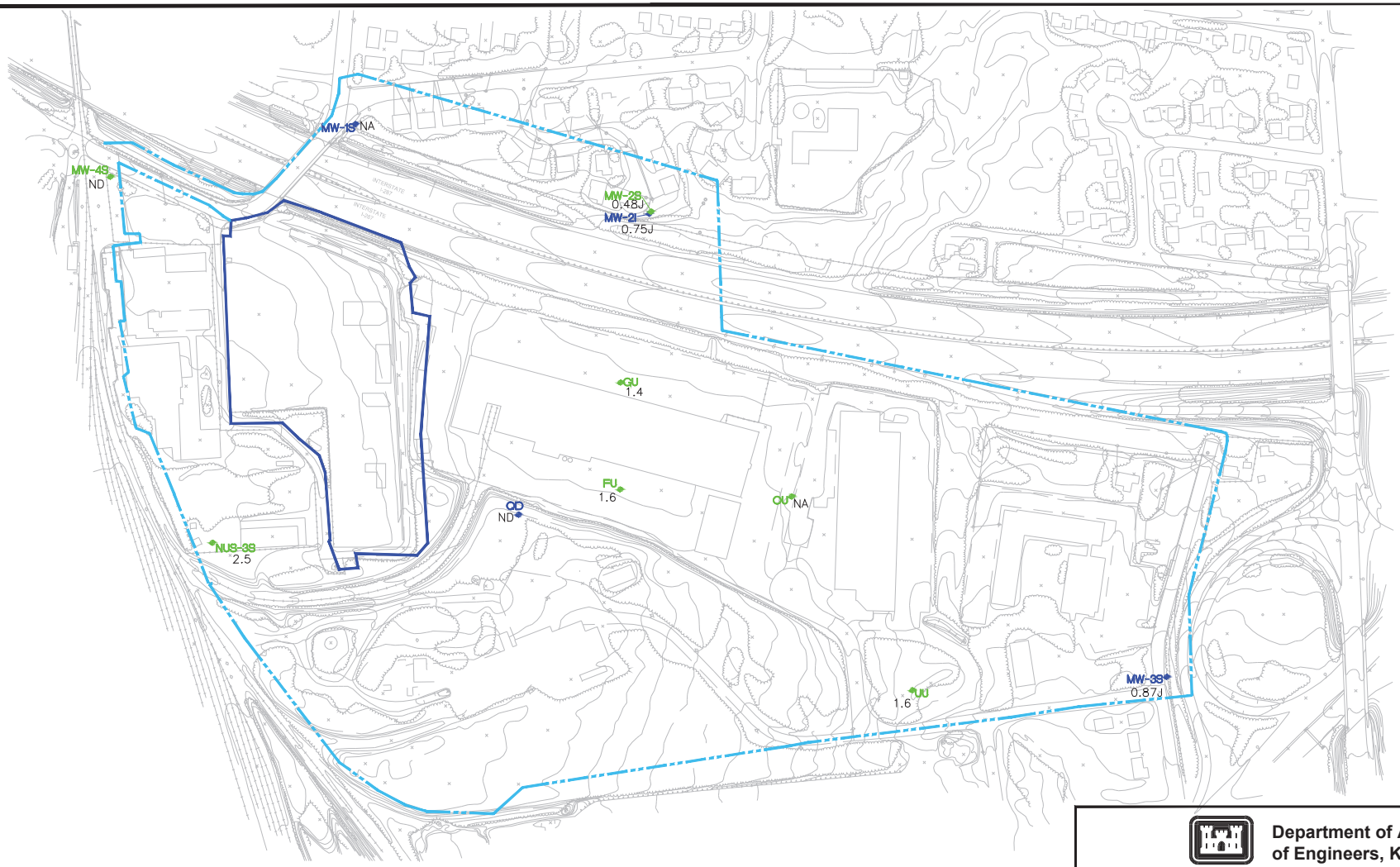


LEGEND:

- OVERBURDEN MONITORING WELL
- TRANSITIONAL MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

CONCENTRATIONS IN ug\L
ND = NOT DETECTED
NA = NOT ANALYZED
BOLD = EXCEEDS REMEDIAL GOAL (3.0 ug\L)
ug\L = MICROGRAMS PER LITER
J = THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 13-APRIL 2018.DWG

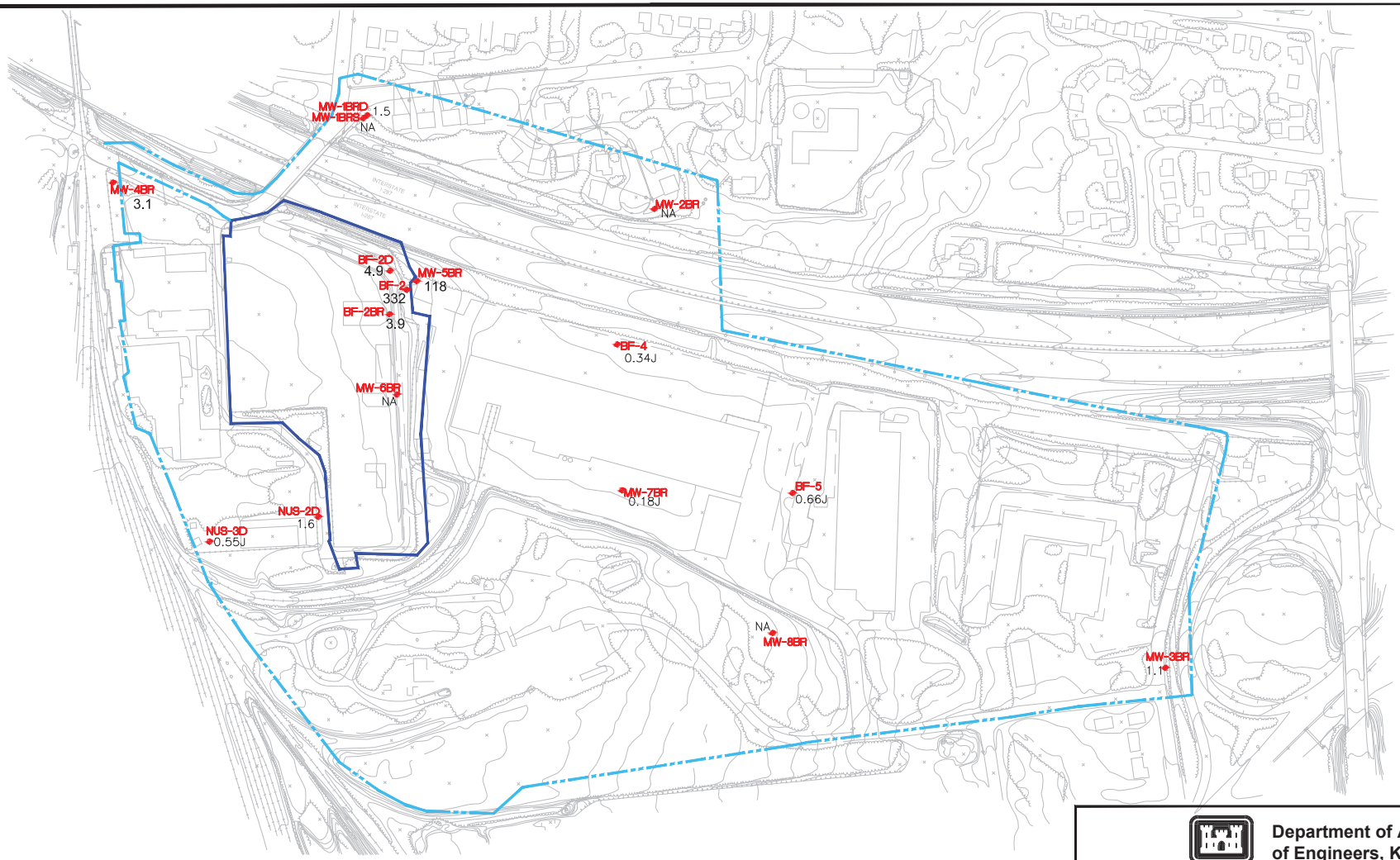
Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 13
LONG TERM MONITORING NETWORK
SHALLOW AND TRANSITIONAL WELLS
DETECTED ARSENIC CONCENTRATIONS
(APRIL 2018)

SDV
ENGINEERING & CONSTRUCTION IOI, JV



LEGEND:

- BEDROCK MONITORING WELL
- CIC SITE OUTLINE
- CIC STUDY AREA

NOTES:

CONCENTRATIONS IN ug\L
ND = NOT DETECTED
NA = NOT ANALYZED
BOLD = EXCEEDS REMEDIAL GOAL (3.0 ug\L)
ug\L = MICROGRAMS PER LITER
J = THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

0 400 800 Feet

REVISION: A

FILE: CIC FIGURE 14-APRIL 2018.DWG

Department of Army Corps of Engineers, Kansas City District

CHEMICAL INSECTICIDE CORPORATION

EDISON TOWNSHIP, MIDDLESEX COUNTY, NJ
OU 4 GROUNDWATER

FIGURE 14
LONG TERM MONITORING NETWORK
BEDROCK WELLS
DETECTED ARSENIC CONCENTRATIONS
(APRIL 2018)

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TABLES

Table 1 Groundwater Elevation Measurements
Table 2 Monitoring Well Inspection
Table 3 Field Parameter Measurements
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Table 5 Groundwater Laboratory Analytical Results
Table 6 Contaminant Concentration Trends (BF-2, BF-2D, and MW-5BR)
Table 7 MAROS Trend Summary
Table 8 Waste Characterization Analytical Results

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TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS
APRIL 2018 LTM EVENT
CHEMICAL INSECTICIDE CORPORATION
EDISON, NEW JERSEY

Well ID	Aquifer	Depth to Water - 04/23/18 (ft btoc)	Groundwater Elevation - 04/23/18 (ft amsl)	Total Depth - 04/23/18 (ft btoc)	Top of Casing Elevation - Inner (ft amsl)	Ground Surface Elevation (ft amsl)	Total Depth - Installed (ft bgs)	Difference Between TOC/Ground Surface Elevation (ft)	Total Depth - Installed (ft btoc)	Top of Screened Interval (ft bgs)	Bottom of Screened Interval (ft bgs)	Northing	Easting
BF-2	Bedrock	9.71	95.61	34.08	105.32	104.52	34.50	0.80	35.30	24.5	34.5	617318.00	529088.80
BF-2BR	Bedrock	3.82	104.77	129.90	108.59	108.86	130.00	-0.27	129.73	120.0	130.0	617307.93	529038.49
BF-2D	Bedrock	13.57	95.91	90.79	109.48	108.18	90.00	1.30	91.30	80.0	90.0	617366.40	529046.40
BF-4*	Bedrock	0.00	94.02	85.19	94.02	93.67	85.40	0.35	85.75	75.4	85.4	617180.50	529619.10
BF-5	Bedrock	9.30	86.01	35.18	95.31	94.95	35.35	0.36	35.71	25.4	35.4	616806.00	530061.20
FU	Overburden	3.84	91.77	13.70	95.61	95.06	15.00	0.55	15.55	5.0	15.0	616815.40	529626.80
GU	Overburden	3.14	92.11	35.40	95.25	94.70	36.00	0.55	36.55	26.0	36.0	617084.70	529627.50
MW-1BRD	Bedrock	13.79	97.35	99.52	111.14	110.69	100.00	0.45	100.45	90.0	100.0	617758.60	528988.70
MW-1BRS	Bedrock	15.56	95.83	44.83	111.39	111.09	45.00	0.30	45.30	35.0	45.0	617750.90	528979.40
MW-1S	Transition	4.02	107.37	16.22	111.39	110.77	17.00	0.62	17.62	7.0	17.0	617736.10	528959.60
MW-2BR	Bedrock	5.90	98.58	88.29	104.48	104.16	90.00	0.32	90.32	80.0	90.0	617522.10	529713.20
MW-2I	Transition	6.15	98.59	34.70	104.74	104.49	35.00	0.25	35.25	25.0	35.0	617510.30	529700.40
MW-2S	Overburden	5.41	99.35	13.40	104.76	104.46	14.00	0.30	14.30	4.0	14.0	617515.40	529705.00
MW-3BR	Bedrock	3.09	84.76	40.29	87.85	86.40	38.00	1.45	39.45	28.0	38.0	616365.40	531000.70
MW-3S	Transition	3.71	84.69	15.90	88.40	85.50	14.00	2.90	16.90	4.0	14.0	616342.90	531004.30
MW-4BR	Bedrock	22.85	94.43	60.20	117.28	115.93	58.00	1.35	59.35	48.0	58.0	617588.60	528348.20
MW-4S	Overburden	9.09	109.20	19.02	118.29	115.69	17.00	2.60	19.60	7.0	17.0	617603.20	528341.80
MW-5BR	Bedrock	8.75	95.92	63.60	104.67	104.22	63.00	0.45	63.45	53.0	63.0	617340.00	529113.90
MW-6BR**	Bedrock	NA	NA	NA	108.69	108.14	79.00	0.55	79.55	63.0	79.0	617054.40	529064.20
MW-7BR	Bedrock	4.32	91.48	44.19	95.80	95.35	44.00	0.45	44.45	34.0	44.0	616812.90	529631.50
MW-8BR	Bedrock	15.74	89.55	63.27	105.29	104.84	63.00	0.45	63.45	53.0	63.0	616453.30	530010.90
NUS-2D	Bedrock	18.92	81.27	105.62	100.19	99.67	105.00	0.52	105.52	89.0	105.0	616745.80	528866.20
NUS-3D	Bedrock	7.94	112.08	40.00	120.02	119.40	43.00	0.62	43.62	25.0	43.0	616683.50	528591.50
NUS-3S	Overburden	8.62	112.02	16.55	120.64	120.29	14.00	0.35	14.35	4.0	14.0	616681.00	528598.90
OU	Overburden	5.10	89.60	6.94	94.70	94.40	8.50	0.30	8.80	3.5	8.5	616797.40	530059.10
QD	Transition	18.46	92.47	47.54	110.93	110.68	48.00	0.25	48.25	38.0	48.0	616751.90	529370.60
UU	Overburden	6.30	89.43	19.04	95.73	93.93	18.00	1.80	19.80	8.0	18.0	616309.50	530363.20

Notes:
amsl = above mean sea level
bgs = below ground surface
btoc = below top of casing
ft = feet
toc = top of casing
Overburden = Fill material (Geologic Unit I) and fluvial-glacial deposits (Geologic Unit II)
Transition = Slightly weathered zone/clay and silt (Geologic Unit III)
Bedrock = Consolidated Brunswick shale (Geologic Unit IV)
Depth of water and total depth measurements collected from top of inner casing.

"Total Depth Installed", "Top of Screened Interval" and "Bottom of Screened Interval" data are based on available information including previous monitoring reports, boring logs, well construction logs, and NJDEP well records.
Survey data from the Final Long-term Monitoring Event Report, Spring 2015 (CTI, 2015).
Elevations are in NAVD1988 Datum.
*BF-4 water elevation was at TOC during the synoptic event. Water level stayed at TOC after the well was allowed to equilibrate.
**Water level and well total depth measurements were not collected from well MW-6BR due to inaccessibility during the Spring 2018 event.

TABLE 2
MONITORING WELL INSPECTIONS
APRIL 2018 LTM EVENT
CHEMICAL INSECTICIDE CORPORATION
EDISON TOWNSHIP, NEW JERSEY

Well Number	Well Deficiency	Well Maintenance Performed	Recommendations
GU	The flush mount pad is cracked, which allows water to pool over the well.	None	The protective flush mount and concrete pad should be replaced.
FU	The flush mount pad is in a low area of the parking lot. Water pools over the well, filling the flush mount with water.	Cleaned seal and reinstalled lid tightly.	The protective flush mount and concrete pad should be replaced higher than the surrounding pavement to prevent ponding over the well.
OU	Measured depth is 1' higher than installed depth.	None	Well may need to be re-developed.
MW-7BR	The flush mount cover bolts are stripped, the flush mount fills with water.	None	The protective flush mount and concrete pad should be replaced.
MW-3BR	Stick-up outer casing is slightly tilted. Inner PVC casing has not been compromised.	None	Monitor stick-up outer casing to ensure it does not compromise the inner PVC casing.
MW-4BR	Multiple notches in well casing. One notch has been marked with a black marker, this notch has been utilized for groundwater measurements.	None	Confirm survey point and/or resurvey if the notch currently used does not match the previous elevation.
MW-5BR	Well is not clearly labeled.	Labeled during synoptic event.	None
BF-2D	Stick-up needs a new lock.	Lock purchased and installed.	None

TABLE 3
FIELD PARAMETER MEASUREMENTS
APRIL 2018 LTM EVENT
CHEMICAL INSECTICIDE CORPORATION
EDISON, NEW JERSEY

Well ID	Aquifer	Well Diameter (inches)	Sampled Date	Sample Time (24-Hour)	Amount Purged (Gallons)	Purge Flow Rate (mL/min)	pH	Temperature (°C)	Conductivity (mS)	Turbidity (NTU)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Water Level (feet below TOC)
BF-2	Bedrock	5.375	04/25/18	10:47	2.00	120	6.69	11.99	0.324	38.6	-29	0.00	9.68
BF-2D	Bedrock	2	04/25/18	9:45	3.50	200	6.54	12.11	0.363	19.7	-58	0.00	13.63
BF-2BR	Bedrock	2	04/25/18	14:08	1.00	70	8.51	11.89	0.305	15.2	-99	0.00	4.34
BF-4	Bedrock	4	04/25/18	12:30	2.25	150	8.07	13.21	0.354	6.66	-8	0.00	0.99
BF-5	Bedrock	4	04/24/18	8:52	2.50	100	8.42	12.92	0.656	2.90	-27	0.00	9.81
FU	Overburden	5.375	04/24/18	11:38	4.00	200	6.58	13.48	1.00	50.5	100	0.00	3.88
GU	Overburden	4	04/25/18	14:45	1.00	75 [1]	6.29	13.24	2.77	58.7	-88	0.00	1.22
MW-1BRD	Bedrock	4	04/23/18	12:44	2.00	50	7.31	20.00	0.148	186.0	131	2.71	16.01
MW-2I	Transition	2	04/23/18	12:20	2.25	150	7.18	12.63	0.263	29.4	91	0.00	6.36
MW-2S	Overburden	2	04/23/18	10:18	1.75	100	6.49	9.46	0.457	8.90	190	0.00	6.52
MW-3BR	Bedrock	2	04/24/18	9:50	4.00	150	7.59	12.63	0.200	20.0	-38	0.00	3.50
MW-3S	Transition	2	04/24/18	11:35	1.00	75 [1]	4.19	16.17	2.32	28.4	376	0.00	3.82
MW-4BR	Bedrock	2	04/26/18	13:53	2.00	100	6.51	19.06	0.359	43.1	-15	0.00	22.72
MW-4S	Overburden	2	04/23/18	15:32	2.50	180	6.62	13.18	0.478	4.30	188	0.99	9.79
MW-5BR	Bedrock	2	04/25/18	9:13	1.50	150	7.06	11.89	0.441	11.2	-70	0.00	9.64
MW-6BR*	Bedrock	2	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-7BR	Bedrock	2	04/24/18	13:56	1.25	80	6.80	16.71	0.329	3.62	154	0.34	4.55
NUS-2D	Bedrock	6	04/26/18	13:50	1.25	80	8.12	15.02	0.190	2.01	-62	0.00	15.89
NUS-3D	Bedrock	6.5	04/23/18	14:15	2.50	150	6.53	13.83	0.136	33.7	241	4.68	8.33
NUS-3S	Overburden	6.5	04/26/18	11:30	1.00	70	6.25	12.87	0.093	51.0	9	0.55	8.70
QD	Transition	4	04/26/18	11:04	5.50	200	6.49	13.71	0.440	11.3	103	0.00	18.44
UU	Overburden	4	04/26/18	9:30	2.75	200	6.47	9.85	0.422	5.23	149	0.91	6.39

Notes:
°C = degrees Celsius
mg/L = milligrams per liter
mL/min = milliliters per minute
mS = millisiemens
mV = millivolts
NTU = nephelometric turbidity units
NM = not measured
TOC = top of casing
1 - Overall flow rate was below 100 mL/min as stated on the field generated purge/sampling sheet. The total volume purged was divided by the total time purged to estimate the purge rate.
* = MW-6BR was not sampled during this LTM Event due to inaccessibility.

TABLE 4
SAMPLE PREPARATION AND ANALYTICAL METHODS
APRIL 2018 LTM EVENT
CHEMICAL INSECTICIDE CORPORATION
EDISON TOWNSHIP, NEW JERSEY

Matrix	Analytical Group	Concentration Level	Analytical Method/SOP	Sample Volume	Sample Containers	Preservation Requirements	Maximum Holding Time
Aqueous	VOCs	Trace	SOM01.2	120 mL	3 x 40-mL glass volatile organic analysis (VOA) vials with Teflon-lined septum; no headspace	4º ± 2ºC, HCl to pH <2	14 days (Preserved)
Aqueous	Metals	Trace	ISM02.3	250 mL	1 x 250 mL high density polyethylene (HDPE)	4º ± 2ºC, HNO_3 to pH <2	6 months
Aqueous	Pesticides	Trace	SOM02.3/60.063	1 L	2 x 1 L amber glass bottle with Teflon screw cap	4º ± 2ºC,	7 days from collection to extraction, 40 days from extraction to analysis
Aqueous	Herbicides	Trace	8151A/E-8151	1 L	2 x 1 L amber glass bottle with Teflon screw cap	4º ± 2ºC	7 days from collection to extraction, 40 days from extraction to analysis

Notes:
HCL = hydrochloric acid
HNO3 = nitric acid
L = Liter
mL = milliliter
SOP = Standard Operating Procedure
VOCs = volatile organic compounds

TABLE 5
GROUNDWATER LABORATORY ANALYTICAL RESULTS
APRIL 2018 LTM EVENT
CHEMICAL INSECTICIDE CORPORATION SITE
EDISON TOWNSHIP, NEW JERSEY

Well Location			BF-2			BF-2D			BF-2BR			BF-4			BF-5			BF-5 (Dup)			Field Blank			Field Blank			FU			GU			MW-1BRD		
Sample ID			BF-2-04252018			BF-2D-04252018			BF-2BR-04252019			BF-4-04252018			BF-5-04242018			DUP1-04242018			FB-04242018			FB-04252019			FU-04242018			GU-04252018			MW-1BRD-04232018		
CLP Sample ID			BE926			BE924			BE928			BE927			BE919			BE916			BE918			BE925			BE917			BE922			BE909		
Sample Date			4/25/2018			4/25/2018			4/25/2018			4/25/2018			4/24/2018			4/24/2018			4/24/2018			4/25/2018			4/24/2018			4/25/2018			4/23/2018		
Analyte	Units	RG	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL
VOLATILE ORGANIC COMPOUNDS																																			
1,1,1-TRICHLOROETHANE	µg/L	30	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1,2,2-TETRACHLOROETHANE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	µg/L	100	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1,2-TRICHLOROETHANE	µg/L	3	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1-DICHLOROETHANE	µg/L	50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1-DICHLOROETHENE	µg/L	1	0.49	J	0.50	0.50	UJ	0.50	0.50	UJJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2,3-TRICHLOROBENZENE	µg/L	100	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2,4-TRICHLOROBENZENE	µg/L	9	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DIBROMO-3-CHLOROPROPANE	µg/L	0.02	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	µg/L	0.03	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DICHLOROBENZENE	µg/L	600	1.7	J	0.50	0.93	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DICHLOROETHANE	µg/L	2	**4.3**	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DICHLOROPROPANE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,3-DICHLOROBENZENE	µg/L	600	0.24	J	0.50	0.17	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,4-DICHLOROBENZENE	µg/L	75	1.2	J	0.50	0.95	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
2-HEXANONE	µg/L	100	5.0	UJ	5.0	5.0	UJ	5.0	5.0	UJ	5.0	5.0	UJ	5.0	50	U	50	50	U	50	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0
ACETONE	µg/L	6,000	5.7	U	5.0	3.6	U	5.0	3.4	U	5.0	5.0	UJ	5.0	50	U	50	50	U	50	5.0	U	5.0	5.2	J	5.0	5.7		5.0	43	J	5.0	13		5.0
BENZENE	µg/L	1	**4.8**	J	0.50	**11**	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMOCHLOROMETHANE	µg/L	100	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMODICHLOROMETHANE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMOFORM	µg/L	4	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMOMETHANE	µg/L	10	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CARBON DISULFIDE	µg/L	700	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.35	J	0.50	0.50	U	0.50
CARBON TETRACHLORIDE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROBENZENE	µg/L	50	13	J	0.50	12	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROETHANE	µg/L	100	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROFORM	µg/L	70	0.50	UJ	0.50	0.50	UJ	0.50	1.3	J	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROMETHANE	µg/L	100	0.20	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CIS-1,2-DICHLOROETHYLENE	µg/L	70	28.0	J	0.50	0.93	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	22		5.0	21		5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.42	J	0.50	0.50	U	0.50
CIS-1,3-DICHLOROPROPENE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CYCLOHEXANE	µg/L	100	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
DIBROMOCHLOROMETHANE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
DICHLORODIFLUOROMETHANE	µg/L	1,000	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
ETHYLBENZENE	µg/L	700	0.50	UJ	0.50	0.13	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
ISOPROPYLBENZENE (CUMENE)	µg/L	700	0.35	J	0.50	0.63	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
M AND P XYLENES	µg/L	1,000 (total)	0.19	J	0.50	0.29	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.22	J	0.50	0.14	J	0.50
METHYL ACETATE	µg/L	7,000	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
METHYL ETHYL KETONE (2-BUTANONE)	µg/L	300	5.0	UJ	5.0	5.0	UJ	5.0	5.0	UJ	5.0	5.0	UJ	5.0	50	U	50	50	U	50	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0	57	J	5.0	5.0	U	5.0
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	µg/L	100	5.0	UJ	5.0	5.0	UJ	5.0	5.0	UJ	5.0	5.0	UJ	5.0	50	U	50	50	U	50	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0
METHYLCYCLOHEXANE	µg/L	100	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
METHYLENE CHLORIDE	µg/L	3	0.42	U	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	1.9		0.50	2.60	J	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
O-XYLENE (1,2-DIMETHYLBENZENE)	µg/L	1000 (total)	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
STYRENE	µg/L	100	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TERT-BUTYL METHYL ETHER	µg/L	70	9.4	J	0.50	28	J	0.50	5.3	J	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.56		0.50	0.50	UJ	0.50	0.50	U	0.50
TETRACHLOROETHYLENE (PCE)	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	**2.1**	J	5.0	**2.6**	J	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TOLUENE	µg/L	1,000	0.14	J	0.50	0.28	J	0.50	0.12	J	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	1.2	J	0.50	0.13	J	0.50
TRANS-1,2-DICHLOROETHENE	µg/L	100	5.6	J	0.50	3.3	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TRANS-1,3-DICHLOROPROPENE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TRICHLOROETHYLENE (TCE)	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	**1200**		50	**1300**		50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TRICHLOROFLUOROMETHANE	µg/L	2,000	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
VINYL CHLORIDE	µg/L	1	**10**	J	0.50	**63**	J	0.50	0.50	UJ	0.50	0.50	UJ	0.50	5.0	U	5.0	5.0	U	5.0	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
PESTICIDES																																			
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	µg/L	0.02	**0.53**	J	0.10	**0.18**		0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	µg/L	0.04	**0.24**	J	0.040	**0.09**		0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	0.007	J	0.040	0.040	U	0.040	0.040	U	0.040
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	µg/L	100	1.1	J	0.13	0.68		0.13	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025
GAMMA BHC (LINDANE)	µg/L	0.03	0.005	J	0.020	0.009	J	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.002	J	0.020	0.001	J	0.020	0.020	U	0.020
HERBICIDES																																			
DINOSEB	µg/L	7	NA			NA			0.92	U	0.92	NA			NA			NA			NA			NA			0.89	U	0.89	NA			NA		
METALS																																			
Arsenic	µg/L	3	**332**		1.0	**4.9**		1.0	**3.9**		1.0	0.34	J	1.0	0.66	J	1.0	0.46	J	1.0	1.0	U	1.0	1.0	U	1.0	1.6		1.0	1.4		1.0	1.5		1.0

Notes
Bold font with shading denotes analyte equals or exceeds remediation goal.
NA = Not Analyzed
RG = Remediation Goal
µg/L = mircograms per liter
U = Undetected at the limit of detection
J = Estimated: The analyte was positively identified; the quantitation is an estimation
J1 = Estimated: The quantitation is an estimation due to discpreapncies in meeting certain analyte-specific quality control criteria

TABLE 5
GROUNDWATER LABORATORY ANALYTICAL RESULTS
APRIL 2018 LTM EVENT
CHEMICAL INSECTICIDE CORPORATION SITE
EDISON TOWNSHIP, NEW JERSEY

Well Location			MW-2I			MW-2S			MW-3BR			MW-3S			MW-4BR			MW-4S			MW-5BR			MW-7BR			NUS-2D			NUS-3D			NUS-3S		
Sample ID			MW-2I-04232018			MW-2S-04232018			MW-3BR-04242018			MW-3S-04242018			MW-4BR-04262018			MW-4S-04232018			MW-5BR-04252018			MW-7BR-04242018			NUS-2D-04262018			NUS-3D-04232018			NUS-3D-04262019		
CLP Sample ID			BE910			BE911			BE914			BE915			BE935			BE912			BE923			BE920			BE934			BE913			BE933		
Sample Date			4/23/2018			4/23/2018			4/24/2018			4/24/2018			4/26/2018			4/23/2018			4/25/2018			4/24/2018			4/26/2018			4/23/2018			4/26/2018		
Analyte	Units	RG	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL
VOLATILE ORGANIC COMPOUNDS																																			
1,1,1-TRICHLOROETHANE	µg/L	30	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,1,2,2-TETRACHLOROETHANE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,1,2-TRICHLOROETHANE	µg/L	3	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,1-DICHLOROETHANE	µg/L	50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,1-DICHLOROETHENE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50
1,2,3-TRICHLOROBENZENE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,2,4-TRICHLOROBENZENE	µg/L	9	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,2-DIBROMO-3-CHLOROPROPANE	µg/L	0.02	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	µg/L	0.03	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,2-DICHLOROBENZENE	µg/L	600	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.60	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,2-DICHLOROETHANE	µg/L	2	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	**3.7**	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,2-DICHLOROPROPANE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,3-DICHLOROBENZENE	µg/L	600	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.17	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
1,4-DICHLOROBENZENE	µg/L	75	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	1.0	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
2-HEXANONE	µg/L	100	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0
ACETONE	µg/L	6,000	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	4.3	J	5.0	7.4		5.0	5.0	U	5.0	8.9	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	27		5.0
BENZENE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	**14**	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
BROMOCHLOROMETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
BROMODICHLOROMETHANE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
BROMOFORM	µg/L	4	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
BROMOMETHANE	µg/L	10	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CARBON DISULFIDE	µg/L	700	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.18	J	0.50
CARBON TETRACHLORIDE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CHLOROBENZENE	µg/L	50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	11	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CHLOROETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CHLOROFORM	µg/L	70	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CHLOROMETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CIS-1,2-DICHLOROETHYLENE	µg/L	70	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	1.9	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CIS-1,3-DICHLOROPROPENE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
CYCLOHEXANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
DIBROMOCHLOROMETHANE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
DICHLORODIFLUOROMETHANE	µg/L	1,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
ETHYLBENZENE	µg/L	700	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.15	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
ISOPROPYLBENZENE (CUMENE)	µg/L	700	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	1.1	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
M AND P XYLENES	µg/L	1,000 (total)	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
METHYL ACETATE	µg/L	7,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
METHYL ETHYL KETONE (2-BUTANONE)	µg/L	300	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.5		5.0
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	µg/L	100	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0
METHYLCYCLOHEXANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
METHYLENE CHLORIDE	µg/L	3	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.16	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
O-XYLENE (1,2-DIMETHYLBENZENE)	µg/L	1000 (total)	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
STYRENE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
TERT-BUTYL METHYL ETHER	µg/L	70	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.83		0.50	0.50	U	0.50	43	J	0.50	0.51		0.50	0.50	U	0.50	3.7		0.50	0.50	U	0.50
TETRACHLOROETHYLENE (PCE)	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.47	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
TOLUENE	µg/L	1,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.34	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
TRANS-1,2-DICHLOROETHENE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	3.5	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
TRANS-1,3-DICHLOROPROPENE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
TRICHLOROETHYLENE (TCE)	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.69		0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
TRICHLOROFLUOROMETHANE	µg/L	2,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
VINYL CHLORIDE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	**17**	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50
PESTICIDES																																			
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	µg/L	0.02	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	**0.099**		0.020	0.020	U	0.020	0.020	U	0.020	0.015	J	0.020	0.020	UJ	0.020
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	µg/L	0.04	0.009	J	0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	**0.071**		0.040	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	0.040	UJ	0.040
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	µg/L	100	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.46		0.13	0.025	U	0.025	0.025	U	0.025	0.013	J	0.025	0.025	UJ	0.025
GAMMA BHC (LINDANE)	µg/L	0.03	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.020	U	0.020	0.004	J	0.020	0.020	U	0.020	0.020	U	0.020	0.012	J	0.020	0.020	UJ	0.020
HERBICIDES																																			
DINOSEB	µg/L	7	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
METALS																																			
Arsenic	µg/L	3	0.75	J	1.0	0.48	J	1.0	1.1		1.0	0.87	J	1.0	**3.1**		1.0	1.0	U	1.0	**118**		1.0	0.18	J	1.0	1.6		1.0	0.55	J	1.0	2.5		1.0

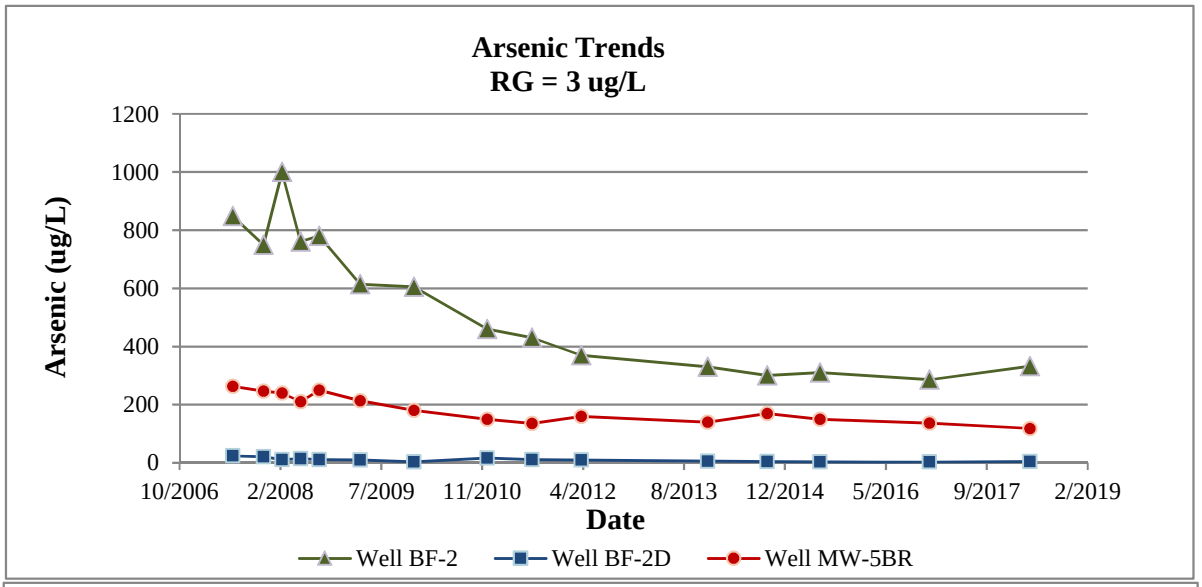
Notes
Bold font with shading denotes analyte equals or exceeds remediation goal.
NA = Not Analyzed
RG = Remediation Goal
µg/L = mircograms per liter
U = Undetected at the limit of detection
J = Estimated: The analyte was positively identified; the quantitation is an estimation
J1 = Estimated: The quantitation is an estimation due to discpreapncies in meeting ce

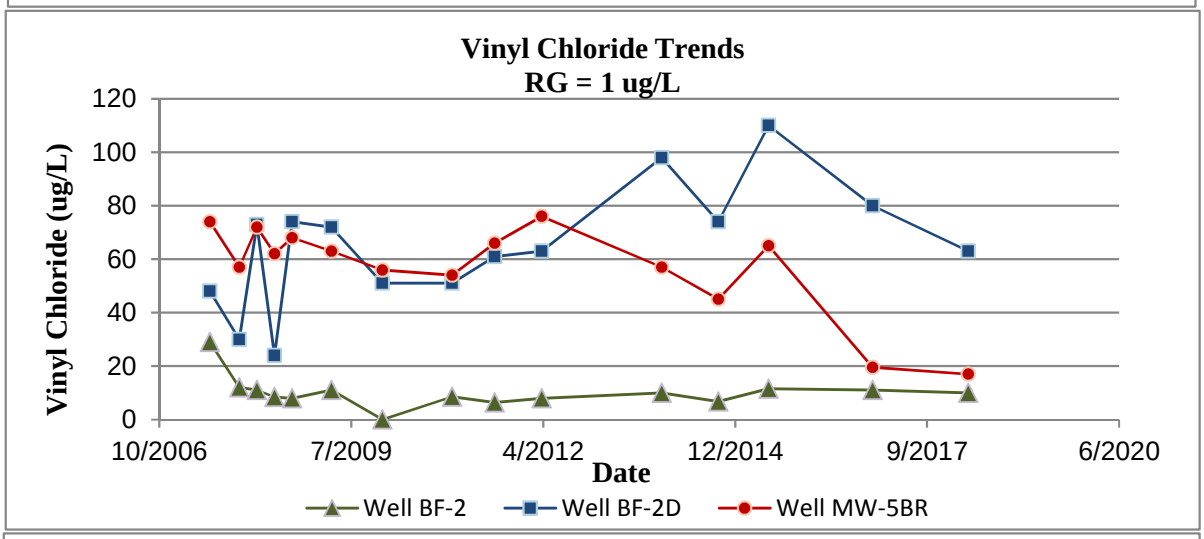
TABLE 5
GROUNDWATER LABORATORY ANALYTICAL RESULTS
APRIL 2018 LTM EVENT
CHEMICAL INSECTICIDE CORPORATION SITE
EDISON TOWNSHIP, NEW JERSEY

Well Location			QD			QD (Dup)			UU			Trip Blank			Trip Blank			Trip Blank		
Sample ID			QD-04262018			DUP2-04262018			UU-04262018			TB-04232018			TB-04252018			TB-04262019		
CLP Sample ID			BE931			BE929			BE930			BE908			BE921			BE932		
Sample Date			4/26/2018			4/26/2018			4/26/2018			4/23/2018			4/25/2018			4/26/2018		
Analyte	Units	RG	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL	Conc.	Q	RL
VOLATILE ORGANIC COMPOUNDS																				
1,1,1-TRICHLOROETHANE	µg/L	30	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1,2,2-TETRACHLOROETHANE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1,2-TRICHLOROETHANE	µg/L	3	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1-DICHLOROETHANE	µg/L	50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,1-DICHLOROETHENE	µg/L	1	0.50	UJ	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	UJ	0.50
1,2,3-TRICHLOROBENZENE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2,4-TRICHLOROBENZENE	µg/L	9	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DIBROMO-3-CHLOROPROPANE	µg/L	0.02	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	µg/L	0.03	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DICHLOROBENZENE	µg/L	600	10		0.50	11		0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DICHLOROETHANE	µg/L	2	**2.4**		0.50	**2.3**		0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,2-DICHLOROPROPANE	µg/L	1	**2.4**		0.50	**2.6**		0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,3-DICHLOROBENZENE	µg/L	600	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
1,4-DICHLOROBENZENE	µg/L	75	1.7		0.50	1.9		0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
2-HEXANONE	µg/L	100	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0
ACETONE	µg/L	6,000	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0
BENZENE	µg/L	1	0.84		0.50	0.92		0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMOCHLOROMETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMODICHLOROMETHANE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMOFORM	µg/L	4	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
BROMOMETHANE	µg/L	10	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CARBON DISULFIDE	µg/L	700	0.50	UJ	0.50	0.50	UJ	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	UJ	0.50
CARBON TETRACHLORIDE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROBENZENE	µg/L	50	0.88		0.50	0.96		0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROFORM	µg/L	70	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CHLOROMETHANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CIS-1,2-DICHLOROETHYLENE	µg/L	70	0.20	J	0.50	0.19	J	0.50	0.23	J	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CIS-1,3-DICHLOROPROPENE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
CYCLOHEXANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
DIBROMOCHLOROMETHANE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
DICHLORODIFLUOROMETHANE	µg/L	1,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
ETHYLBENZENE	µg/L	700	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
ISOPROPYLBENZENE (CUMENE)	µg/L	700	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
M AND P XYLENES	µg/L	1,000 (total)	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
METHYL ACETATE	µg/L	7,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
METHYL ETHYL KETONE (2-BUTANONE)	µg/L	300	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	µg/L	100	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	U	5.0	5.0	UJ	5.0	5.0	U	5.0
METHYLCYCLOHEXANE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
METHYLENE CHLORIDE	µg/L	3	**5.0**		0.50	**5.2**		0.50	0.50	U	0.50	0.27	J	0.50	0.23	J	0.50	0.32	J	0.50
O-XYLENE (1,2-DIMETHYLBENZENE)	µg/L	1000 (total)	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
STYRENE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TERT-BUTYL METHYL ETHER	µg/L	70	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TETRACHLOROETHYLENE (PCE)	µg/L	1	0.50	U	0.50	0.19	J	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TOLUENE	µg/L	1,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TRANS-1,2-DICHLOROETHENE	µg/L	100	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TRANS-1,3-DICHLOROPROPENE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TRICHLOROETHYLENE (TCE)	µg/L	1	**1.7**		0.50	**1.6**		0.50	0.61		0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
TRICHLOROFLUOROMETHANE	µg/L	2,000	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
VINYL CHLORIDE	µg/L	1	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	U	0.50	0.50	UJ	0.50	0.50	U	0.50
PESTICIDES																				
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	µg/L	0.02	**0.024**		0.020	**0.024**		0.020	0.020	U	0.020	NA			NA			NA		
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	µg/L	0.04	0.040	U	0.040	0.040	U	0.040	0.040	U	0.040	NA			NA			NA		
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	µg/L	100	0.003	J	0.025	0.003	J	0.025	0.025	U	0.025	NA			NA			NA		
GAMMA BHC (LINDANE)	µg/L	0.03	0.016	J	0.020	0.017	J	0.020	0.020	U	0.020	NA			NA			NA		
HERBICIDES																				
DINOSEB	µg/L	7	8.9	UJ	8.9	7.7	J	8.8	NA			NA			NA			NA		
METALS																				
Arsenic	µg/L	3	1.0	U	1.0	1.0	U	1.0	1.6		1.0	NA			NA			NA		

Notes
Bold font with shading denotes analyte equals or exceeds remediation goal.
NA = Not Analyzed
RG = Remediation Goal
µg/L = mircograms per liter
U = Undetected at the limit of detection
J = Estimated: The analyte was positively identified; the quantitation is an estimation
J1 = Estimated: The quantitation is an estimation due to discpreapncies in meeting ce

Table 6
Contaminant Trends
Chemical Insecticide Corporation
Edison Township, New Jersey





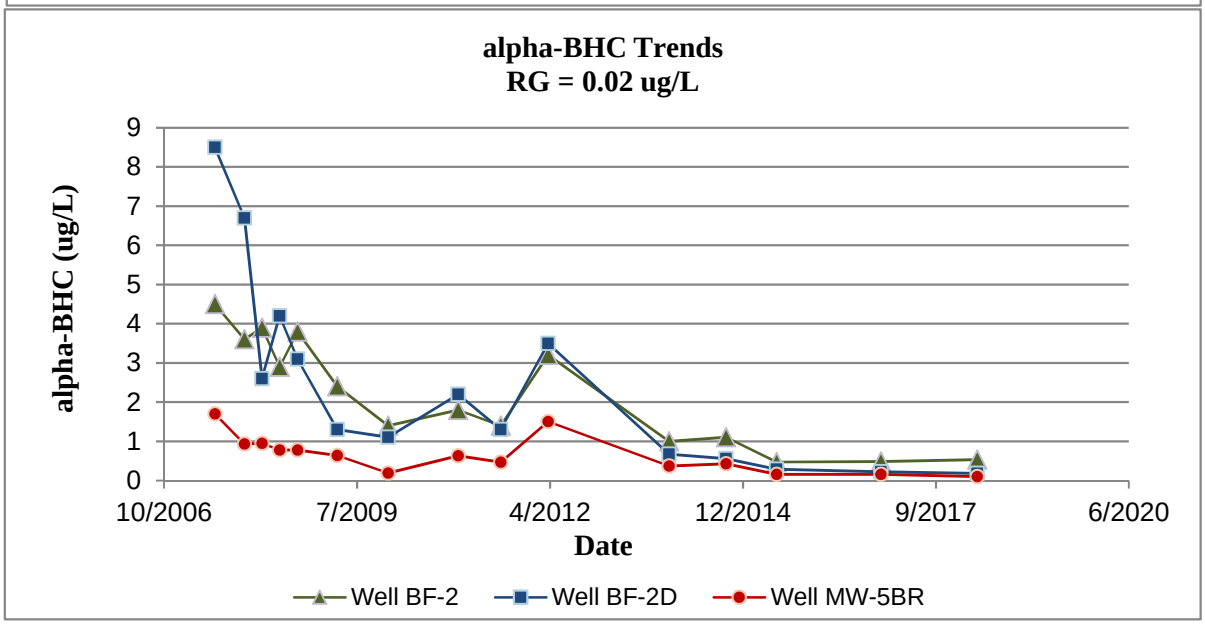


Table 7
Statistical Trend Analysis Results Summary
Chemical Insecticide Corporation
Edison Township, New Jersey

Well Number	alpha-BHC					Arsenic				
	No. of Events (2009-2018)	*No. of Detections*	*All samples ND?*	*Mann-Kendall Trend*	*Linear Regression Trend*	*No. of Events (2009-2018)*	*No. of Detections*	*All samples ND?*	*Mann-Kendall Trend*	*Linear Regression Trend*
BF-2	10	10	No	**D**	**D**	10	10	No	**D**	**D**
BF-2D	10	10	No	**D**	**D**	10	10	No	**D**	**D**
BF-4	10	0	Yes	ND	ND	9	1	No	**S**	**PD**
BF-5	4	0	Yes	ND	ND	4	2	No	**S**	**D**
MW-5BR	10	10	No	**D**	**D**	10	10	No	**D**	**D**
MW-6BR	9	3	No	**S**	**S**	8	6	No	NT	NT
MW-7BR	10	0	Yes	ND	ND	9	2	No	**S**	**PD**
QD	10	7	No	**S**	**S**	9	0	Yes	ND	ND
UU	4	0	Yes	ND	ND	4	3	No	NT	NT

Notes:

I = Increasing

PI = Probably Increasing

S = Stable

PD = Probably Decreasing

D = Decreasing

NT= No Trend

ND= Not Detected (in all sample events)

-- = Well not sampled for parameter; no trend analysis performed.

Table 7
Statistical Trend Analysis Results Summary
Chemical Insecticide Corporation
Edison Township, New Jersey

Well Number	Dinoseb					Trichloroethene				
	No. of Events (2009-2018)	*No. of Detections*	*All samples ND?*	*Mann-Kendall Trend*	*Linear Regression Trend*	*No. of Events (2009-2018)*	*No. of Detections*	*All samples ND?*	*Mann-Kendall Trend*	*Linear Regression Trend*
BF-2	--	--	--	--	--	10	5	No	D	D
BF-2D	--	--	--	--	--	9	1	No	NT	NT
BF-4	--	--	--	--	--	9	0	Yes	ND	ND
BF-5	--	--	--	--	--	4	3	No	S	S
MW-5BR	--	--	--	--	--	9	0	Yes	ND	ND
MW-6BR	--	--	--	--	--	8	2	No	S	NT
MW-7BR	--	--	--	--	--	10	9	No	S	S
QD	8	7	No	S	S	10	9	No	NT	PI
UU	--	--	--	--	--	4	4	No	S	D

Notes:

I = Increasing

PI = Probably Increasing

S = Stable

PD = Probably Decreasing

D = Decreasing

NT= No Trend

ND= Not Detected (in all sample events)

-- = Well not sampled for parameter; no trend analysis performed.

Table 7
Statistical Trend Analysis Results Summary
Chemical Insecticide Corporation
Edison Township, New Jersey

Well Number	Vinyl Chloride				
	No. of Events (2009-2018)	*No. of Detections*	*All samples ND?*	*Mann-Kendall Trend*	*Linear Regression Trend*
BF-2	10	9	No	NT	NT
BF-2D	10	10	No	PI	PI
BF-4	9	0	Yes	ND	ND
BF-5	4	0	Yes	ND	ND
MW-5BR	10	10	No	PD	D
MW-6BR	8	3	No	PI	NT
MW-7BR	9	0	Yes	ND	ND
QD	9	0	Yes	ND	ND
UU	4	0	Yes	ND	ND

Notes:

I = Increasing

PI = Probably Increasing

S = Stable

PD = Probably Decreasing

D = Decreasing

NT= No Trend

ND= Not Detected
(in all sample events)

-- = Well not sampled for parameter; no trend analysis performed.

TABLE 8
SOIL WASTE CHARACTERIZATION ANALYTICAL RESULTS - BF-2BR INSTALLATION
CHEMICAL INSECTICIDE CORPORATION SITE - EDISON TOWNSHIP, NEW JERSEY

Sample Identification		WC-01		
Sample Date		2/19/2018		
Sample Time		17:12		
Analyte	**Units**	**Conc.**	**Q**	**RL**
Metals ICP (Method 6010B) - TCLP				
Arsenic	mg/L	0.075	U	0.075
Barium	mg/L	**0.45**	J	0.01
Cadmium	mg/L	0.009	U	0.009
Chromium	mg/L	0.013	U	0.013
Lead	mg/L	0.05	U	0.05
Selenium	mg/L	0.095	U	0.095
Silver	mg/L	0.018	U	0.018
Mercury CVAA (Method 7470A) - TCLP				
Hg	mg/L	0.00008	U	0.00008
Organochlorine Pesticides (Method 8081A) - TCLP				
Chlordane (technical)	mg/L	0.004	U	0.004
Endrin	mg/L	0.0002	U	0.0002
gamma-BHC (Lindane)	mg/L	0.0002	U	0.0002
Heptachlor	mg/L	0.0002	U	0.0002
Heptachlor epoxide	mg/L	0.0002	U	0.0002
Methoxychlor	mg/L	0.0005	U	0.0005
Toxaphene	mg/L	0.0075	U	0.0075
Polychlorintated Biphenyls (Method 8082A) - TCLP				
PCB-1016	ug/Kg	17	U M	17
PCB-1221	ug/Kg	19	U M	19
PCB-1232	ug/Kg	17	U M	17
PCB-1242	ug/Kg	37	U M	37
PCB-1248	ug/Kg	22	U M	22
PCB-1254	ug/Kg	19	U M	19
PCB-1260	ug/Kg	8.6	U M	8.6
Herbicides (Method 8151A DOD) - TCLP				
Silvex (2,4,5-TP)	mg/L	0.006	U	0.006
2,4-D	mg/L	0.006	U	0.006
Volatile Organic Compounds (Method 8260B) - TCLP				
1,1-Dichloroethene	mg/L	0.008	U	0.008
1,2-Dichloroethane	mg/L	0.004	U	0.004
2-Butanone (MEK)	mg/L	0.04	U	0.04
Benzene	mg/L	0.004	U	0.004
Carbon tetrachloride	mg/L	0.004	U	0.004
Chlorobenzene	mg/L	0.004	U	0.004
Chloroform	mg/L	0.004	U	0.004
Tetrachloroethene	mg/L	0.004	U	0.004
Trichloroethene	mg/L	0.004	U	0.004
Vinyl chloride	mg/L	0.002	U	0.002
Semi-Volatile Organic Compounds (Method 8270C) - TCLP				
1,4-Dichlorobenzene	mg/L	0.02	U	0.02
2,4,5-Trichlorophenol	mg/L	0.005	U	0.005
2,4,6-Trichlorophenol	mg/L	0.005	U	0.005
2,4-Dinitrotoluene	mg/L	0.022	U	0.022
2-Methylphenol	mg/L	0.01	U	0.01
3 & 4 Methylphenol	mg/L	0.0025	U	0.0025
Hexachlorobenzene	mg/L	0.01	U	0.01
Hexachlorobutadiene	mg/L	0.05	U	0.05
Hexachloroethane	mg/L	0.022	U	0.022
Nitrobenzene	mg/L	0.01	U	0.01
Pentachlorophenol	mg/L	0.2	U	0.2
Pyridine	mg/L	0.022	U	0.022
General Chemistry				
Cyanide, Total	mg/Kg	0.28	U	0.28
Sulfide	mg/Kg	12	U	12
pH	SU	**7.1**	HF	0.1
Ignitability	mm/sec	**NB**		2.2

BOLD - Detection
U - Non-detect at the limit of detection
mg/L - Milligrams per liter
ug/Kg - Mircograms per killigram
SU - Standard unit
M - Manual integrated compound
mg/Kg - Milligrams per killigram
mm/sec - Millimeters per second
L - Analyte was positively identified; the quantitation is an estimation
HF - Field parameter with a holding time of 15-minutes. Test performed by lab by client's request.

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APPENDICES
(PROVIDED ON CD)

Appendix A	BF-2BR Monitoring Well Installation Documentation and Logs
Appendix B	Water Level Measurements and USEPA Well Assessment Checklists
Appendix C	Groundwater Sampling Logs
Appendix D	Chain-of-Custody Records
Appendix E	Equipment Calibration Logs
Appendix F	Daily Quality Control Logs
Appendix G	Laboratory Analytical and QA/QC Checklists
Appendix H	MAROS Output Reports and Data Tables

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APPENDIX A

BF-2BR Monitoring Well Installation Documentation and Logs

Field Service Report

*Formal invoice to follow

master locators
675 Concord Road Glen Mills, PA
1-800-495-4248
www.masterlocators.com

Company:
Insight Environmental

Project:
30 Whitman Avenue

Customer Contact:
Matthew L. Pingitor

ML Job#:
ML-012918-6712

Lead Technician:
Patrick Leahy

Field Assistant:

Site Address:
30 Whitman Avenue

Project Coordinator:
John Bogedain

Date:	Tech#:	STD Hours:	OT Hours:	Begin:	Onsite:	Offsite:	End:
02-12-2018		4	0	10:00 AM	11:15 AM	01:15 PM	02:30 PM

Services Performed :(Check all that apply)

- [x] GPR Survey
- [ ] Concrete Scan
- [ ] Leak Detection - Helium
- [ ] Other
- [x] EM Scan
- [ ] CCTV Pipe Inspection
- [ ] Fault Locate
- [ ] Air/Hydro Excavation
- [ ] Leak Detection - Acoustic
- [ ] Surveying & Mapping

Soil Conditions: (Check all that apply)

- [x] Saturated
- [ ] Sand
- [ ] Dry
- [ ] Other
- [ ] Clay

Weather Conditions: (Check all that apply)

- [ ] Clear
- [ ] Snow
- [x] Overcast
- [ ] Other
- [ ] Rain

Utilities Features Designated: (Check all that apply)

- [ ] Gas
- [ ] Fiber Optic
- [ ] Sewer
- [x] Unknown
- [ ] Water
- [ ] Comm
- [ ] Rebar
- [ ] None
- [ ] Electric
- [x] Storm
- [ ] UST
- [ ] Other

Deliverable Request : (Check all that apply)

- [ ] Plan Mark Up
- [x] Sketch
- [ ] Engineering Report
- [ ] Other
- [ ] CAD Update

Deliverable Provided Onsite : No

Survey Methodologies:

Known Utilities:	UnKnown Utilities:	(Grid Spacing):
[x] Utilities within Scope of Work:	[x] Passive Scans:	2x2
[x] Utilities outside Scope of Work:	[x] Split Box Scans:	2x2
[ ] Building Feeds:	[x] GPR Scans:	2x2

Other Survey Methodology:

Full Scope of Work:

Scan first area on right of the swale which was painted out by client. Then scan secondary area as described over the phone by Matthew. I sprayed ground with white paint and flagged.

Additional Resources:

None

Result And Notes:

Scanned primary area and found an anomaly using the GPR. Area of anomaly was marked in pink as per client request. When finished with the first area I scanned secondary area on west side of swale. Area was very saturated, it did not see any anomalies present. Anomaly was flagged and area was sketches with pictures taken as well. Client was not on site.

Client Communication:

Spoke with Matthew he first directed me to the location on east side of the dog park. While here he asked if there was time to scan a secondary area, which he described over the phone. Customer also requested I mark in pink as to not confuse the driller.

Recommended Services: (Check all that apply)

- ◯ GPR Survey
- ◯ Concrete Scan
- ◯ Leak Detection - Helium
- ◯ Other
- ◯ EM Scan
- ◯ CCTV Pipe Inspection
- ◯ Fault Locate
- ◯ Air/Hydro Excavation
- ◯ Leak Detection - Acoustic
- ◯ Surveying & Mapping

Client PO# :

Fieldwork Complete: YES

Date: 02-12-2018 01:15 PM

Contacts on Site:

Matthew Pingitor, Insight Environmental, 609-213-2207

Signature:

Unknown UNK | Storm ST | Sewer/Sanitary SS | Water W | Electric E | Gas G | Comm. / FO / Cable C

master locators

800.495.4248

info@masterlocators.com

www.masterlocators.com

Site Name and Location:

30 Whitman Ave
Edison, NJ

Assumptions & Clarifications

1. UNLESS OTHERWISE NOTED UNDERGROUND UTILITY DATA IS CONSIDERED QUALITY LEVEL B (QLB) AS DEFINED IN ASCE 38-02: STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA AND IS INTENDED TO SHOW THE APPROXIMATE HORIZONTAL LOCATIONS OF EXISTING UNDERGROUND UTILITIES AS MARKED BY MASTER LOCATORS DURING A GEOPHYSICAL INVESTIGATION PERFORMED WITHIN THE OUTLINED SCOPE OF WORK.

2. ALL UTILITY LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION OR DESIGN PURPOSES AND MASTER LOCATORS IS NOT RESPONSIBLE FOR DAMAGE TO UTILITIES RESULTING FROM ANY CONSTRUCTION WORK BASED ON THESE PLAN.

3. NO BOUNDARY OR PROPERTY SURVEY WORK WAS CONDUCTED IN THE DEVELOPMENT OF THIS PLAN. THE PLAN IS NOT DRAWN TO SCALE.

4.ANY DEPTH INFORMATION PROVIDED IS CONSIDERED APPROXIMATE AND IS NOT GUARANTEED UNLESS LABELED AS QUALITY LEVEL A (QLA) DATA.

Legend & Color Codes

MH Man Hole | E Electric Box | Line Continuation | Flow Direction

U/P Utility Pole | Site Light | B Bollard | FH Fire Hydrant | G Gas Valve

W Water Valve | P Phone Pedistal | X Transformer | W Irrigation Box

EOI End of Information | C/O Clean Out | Catch Basin | Duct Bank | Large Storm (>12")

Revisions:

Date:	Description:	By:

ML Job #: ML-012918-6712

Date: 2/12/18

Technician(s): Patrick Leahy

Client Signature

Client Name: Insight Environmental

Form 013 22AUG06 REV C 02JAN18

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

		Date 02/19/2018
Contract No. W912DQ-12-D-3012, DO0002	Title and Location Demolition Management Plan Chemical Insecitcide Corporation	Report No. CIC 005

Contractor **Tetra Tech**		Superintendent	
AM Weather Partly Sunny, 41 ° Wind NE @ 1mph	PM Weather PM Showers, high 51°, winds light and variable.	Min Temp. (°F) **41°**	Max Temp (°F) **51°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli -TetraTech, Michael Wilson and Daniel Haleki - Summit Drilling. Setup rig at proposed well location (BF-2BR). **2.** Drilled through overburden to weathered rock using RotoSonic Drill rig. **3.** Collected soil cores evry 10' down to 40'bgs. **4.** Collected Waste Classification Sample from Drum. **ISSUES:** No issues at this time.	**TETRA TECH**	**1**	**Geo**	**10**
	Summit Drilling	**1**	**Driller**	**8**
	Summit Drilling	**2**	**Helper**	**8**

H&S Level D	**Was a job safety meeting held this date?** (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date: 26
	Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report: 38
	Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No	
	Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction: 64

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Conducted H&S briefing. H&S Concerns - went through APP/SHSP and dicussed routes to hospital.

Equipment Received Today to be Incorporated in Job

Mobilized Drilling equipment to Site.

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 3000	6	Kubota	4		
MultiRae	6				
Rotosonic Drill	6				
Morooka	4				

Calibrated MiniRae 3000 PID and MultiRae - SEE CALIBRATION LOGS.

Subcontractor Date SDV QC Supervisor Date

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 02/20/2018

Contract No.	Title and Location	Report No.
W912DQ-12-D-3012, DO0002	Demolition Management Plan Chemical Insecitcide Corporation	CIC 006

Contractor	Superintendent
Tetra Tech	

AM Weather	PM Weather	Min Temp. (°F)	Max Temp (°F)
Fog and Drizzle, 50°, Wind WSW @ 5mph	Partly Cloudy, High 66°, winds WSW @ 5-10mph.	**50°**	**66°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli -TetraTech, Michael Wilson, Jordan Talmage and Daniel Haleki - Summit Drilling. Drilling Continues at BF-2BR **2.** Encountered Competent Bedrock at 42.5'bgs. **3.** Drilled from 40-100'bgs using Sonic Drill Rig, collecting cores every 10'. **ISSUES:** The ground in the vicinity of the well is very wet, the contanstant moving of people and equipment if making the area very muddy.	**TETRA TECH**	**1**	**Geo**	**10**
	Summit Drilling	**1**	**Driller**	**8**
	Summit Drilling	**2**	**Helper**	**8**
	Summit Drilling	**3**	**Helper**	**8**

H&S Level D	**Was a job safety meeting held this date?** (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date: 34
	Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report: 64
	Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No	
	Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction: 98

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Conducted H&S briefing. H&S Concerns - discussed proper lifting techniques.

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 3000	8	Kubota	8		
MultiRae	8				
Rotosonic Drill	8				
Morooka	8				

Calibrated MiniRae 3000 PID and MultiRae - SEE CALIBRATION LOGS.

Subcontractor Date SDV QC Supervisor Date

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 02/21/2018

Contract No.	Title and Location	Report No.
W912DQ-12-D-3012, DO0002	Demolition Management Plan Chemical Insecitcide Corporation	CIC 007

Contractor	Superintendent
Tetra Tech	

AM Weather	PM Weather	Min Temp. (°F)	Max Temp (°F)
Cloudy/Fog, 59°, Wind SW @ 9mph.	Sunny, Warm, high 73°, Winds WSW @ 0-15mph	**59°**	**76°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli -TetraTech, Michael Wilson, Jordan Talmage and Tim McCabeling - Summit Drilling, .Greg Hatton - USACOE onsite **2.** Drilling Continues at BF-2BR. Drilled to 120'bgs. **3.** Desicion was made to drill an additional 10' to a final depth of 130'bgs. **4.** Based on findings in core - well will be constructed from 120-130'bgs. **ISSUES:** Not enoght time to install well and get grouted. Will begin well construction tomorrow.	**TETRA TECH**	**1**	**Geo**	**10**
	Summit Drilling	**1**	**Driller**	**8**
	Summit Drilling	**2**	**Helper**	**8**
	Summit Drilling	**3**	**Helper**	**8**

H&S Level D

Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	34
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	98
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	132

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Conducted H&S briefing. H&S Concerns - discussed proper lifting techniques.

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 3000	8	Kubota	8		
MultiRae	8				
Rotosonic Drill	8				
Morooka	8				

Calibrated MiniRae 3000 PID and MultiRae - SEE CALIBRATION LOGS.

Subcontractor Date SDV QC Supervisor Date

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 02/22/2018

Contract No.	Title and Location	Report No.
W912DQ-12-D-3012, DO0002	Demolition Management Plan Chemical Insecitcide Corporation	CIC 008

Contractor	Superintendent
Tetra Tech	

AM Weather	PM Weather	Min Temp. (°F)	Max Temp (°F)
Cloudy 46°, Wind NE @ 11mph.	Rain, high 46°, Winds NE @ 10 to 15mph.	**39°**	**46°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli -TetraTech, Michael Wilson, Jordan Talmage and Daniel Halecki - Summit Drilling. **2.** Constructed PVC Well (BF-2BR) - Screen from 120-130'bgs. See Well contruction Log. **3.** Removed Sonic Rig and Morooka from Site. **ISSUES:**	**TETRA TECH**	**1**	**Geo**	**10**
	Summit Drilling	**1**	**Driller**	**8**
	Summit Drilling	**2**	**Helper**	**8**
	Summit Drilling	**3**	**Helper**	**8**

H&S Level D

Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	34
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	132
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	166

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Conducted H&S briefing. H&S Concerns - working with caustic materials (concrete) for grout and use of a mask.

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 3000	8	Kubota	8		
MultiRae	8				
Rotosonic Drill	8				
Morooka	8				

Calibrated MiniRae 3000 PID and MultiRae - SEE CALIBRATION LOGS.

Subcontractor Date SDV QC Supervisor Date

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 02/23/2018

Contract No. W912DQ-12-D-3012, DO0002	Title and Location Demolition Management Plan Chemical Insecitcide Corporation	Report No. CIC 009

Contractor **Tetra Tech**		Superintendent	
AM Weather Cloudy/Cold 37°, Wind NE @ 5mph.	PM Weather Rain, high 43°, Winds E @ 5 to 10mph.	Min Temp. (°F) **33°**	Max Temp (°F) **43°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli -TetraTech, Jordan Talmage and Will Mobus- Summit Drilling. **2.** Finished construction of Well - Well Pad. **3.** Developed Well (BF-2BR)- See Monitoring Well Development Log. **4.** Repair to Site. Smoothing tracks/ruts made by vehicle and adding seed/hay. **ISSUES:**	**TETRA TECH**	**1**	**Geo**	**10**
	Summit Drilling	**1**	**Helper**	**8**
	Summit Drilling	**2**	**Helper**	**8**

H&S Level D	**Was a job safety meeting held this date?** (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date: 26
	Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report: 166
	Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No	
	Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction: 192

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Conducted H&S briefing. H&S Concerns - Slips and Trip

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 3000	0	Kubota	8		
MultiRae	0	Horiba - U52	5		
Rotosonic Drill	0	Water Level Meter	5		
Morooka	0				

Calibrated Horiba - SEE CALIBRATION LOGS.

Subcontractor Date SDV QC Supervisor Date

CONTENTS

PAGE	REFERENCE	DATE

Location CIC Date 2/19/2018

Project / Client USACOE

WELL INSTALLATION

0700 A. VALLI ONSITE
WEATHER: PARTLY SUNNY 41°
WIND NE @ 1MPH
EXPECTED: PM SHOWERS HIGH 51°
WINDS - LIGHT & VARIABLE

0710 A. VALLI WALKED PROPERTY & COLLECTED PHOTOGRAPHS.

0800 RENTAL COMPANY DELIVERED BOBCAT RIG FOR SUMMIT DRILLING

0845 SDV REP - MATT PINGITOR
ONSITE - DISCUSS DETAILS OF PROJECT
HAS BOTTLEWARE FOR WASTE SAMPLES & FILTER BAGS.

1930 - SUMMIT DRILLING ONSITE w/ 2 SUPPORT VEHICLES.
MICHAEL WILSON DRILLER
DANIEL HALEKI - HELPER

Location CIC Date 2/19/2018

Project / Client USACOE

WELL INSTALLATION

1010 SONIC RIG ONSITE (TRACK) ON FLAT BED.

1015 A. VALLI CONDUCTS RIG INSPECTION SEE LOG. AND DAILY TAILGATE MEETING

1030 SONIC ATTEMPTING TO MOVE RIG TO LOCATION
GROUND VERY SOFT

1100 RIG @ PROPOSED WELL LOCATION.
MINOR RUTTING FROM TRACKS

1130 MAT (INSIGHT) OFF SITE.

1200 CREW SETTING UP EQUIPMENT & BRINGING OVER TO RIG

1300 MARCKA RIG INSITE.

Location CID - EDISON Date 2/19/2018

Project / Client USACOE

WELL INSTALLATION.

1400 DRILLING BEGINS @ PROPOSED WELL
FLIGHTS ARE 10' LENGTH

1426 RECEIVED RUN # 1
0-10' DEPTH
RECOVERY 7.6'
PID - 0.0
LITHO -
0-0.2 TOPSOIL
0.2-1.5 DK BR. F SAND, SOME SILT LITTLE F GRAVEL, DRY, MOTTLED
1.5-2.2 DK. BR F SAND, LITTLE SILT & F GRAVEL, MOIST.
2.2-4.2 DK BR. F SAND, SOME F GRAVEL & SILT, GRAVEL IS ANGULAR.
4.2-7.6 MED BR. F-M SAND, SOME SILT, LITTLE F GRAVEL.
WET
2" LOOSE SAND LENSES @ 5.3-5.7 & 6.6' TO 6.9'

Location C1C - EDISON Date 2/19/2018

Project / Client USACOE

WELL INSTALLATION

1455 RECIEVED RUN # 2
DEPTH - 10-20'
RECOVER. 9.4'
PID - 0.0
LITHO
10-12' MED BR F SAND
SOME F GRAVEL (ANGULAR)
LITTLE SILT.
12-17.4 DK BR TO RD BR.
F SAND, SOME SILT.
LITTLE F GRAVEL
17.4-19.4 YELLOW RD F
SAND, LITTLE F GRAVEL, (SUB
ROUNDED) TRACE SILT.
LOOSE (WET.

1527 RECIEVED RUN # 3
DEPTH 20-30'
RECOVERY 7.9'
PID 0.0 ppm.
LITHO.
20-22.4 SAA, LOOSE WET

Location C1C - EDISON Date 2/19/18

Project / Client USACOE

WELL INSTALLATION

22.4-25.9 RED BR SILT, SOME
CLAY LITTLE F GRAVEL.
HARD
25.9-27.9 DK RD SILT SOME
CLAY & WEATHER RED SANDSTONE
FRAGMENTS VERY HARD

1611 RECIEVED RUN # 4
DEPTH 30-40'
REC. 9.1'
PID 0.0
LITHO
30-34.1 RD BR. VERY WEATHER
SILISTONE W/ RED
SANDSTONE FRAGMENTS
34.1-39.1 RD BR WEATHERED
SILISTONE HARD,

DRILLER AT ROCK WILL
CLEANUP & GET WATER,
WILL SETUP FOR ROCK
CORING TOMORROW.

Location CIC - EDISON Date 2/19/18

Project / Client USACOE

WELL INSTALLATION

1630 CREW CONTINUING TO CLEANUP & PREP FOR TOMORROW

1712 A. VALLI COLLECTED WASTE CLASS SAMPLE FROM DRUM WC-01

1730 CREW OFF SITE.

2-19-2018

Location CIC - EDISON Date 2/20/18

Project / Client USACOE

WELL INSTALLATION - DRILLING

0700 A. VALLI ONSITE.
WEATHER: 50°, FOG WIND WSW @ 5MPH
EXPECTED: PARTLY CLOUDY HIGH 66°
WIND → WSW @ 5-10MPH

0730 SUMMIT DRILLING ONSITE
MICHAEL WILSON - DRILLER
DANIEL HALEKI - HELPER
JORDAN TALMAGE - HELPER

0745 A. VALLI CONDUCTS H&S BRIEFING
CREW TO FUEL VEHICLES &
MOVE DRILL RODS

0800 A. VALLI CALIBRATES PID & MULTIGAS
- SEE CAL LOG

0900 - GREG WISSINK ONSITE

0925 - RECIEVED RUN #5
DEPTH 40-50'
RECOVERY 7.4' / 74%
RQD 5.4' / 54%

Location C1C - EDISON Date 2/20/18

Project / Client U.S ACOE

WELL INSTALLATION - DRILLING

COMPETENT ROCK STARTED @
~ 42.5' bgs
RED SILT STONE / SHALE
42.6 - 43 FRACTURED ZONE
44 - 45' FRACTURED ZONE
w/ LAMINATION & PARTIALLY
HEALED FRACTURES
48.7 - 1/8" FRACTURE LITTLE HEALING
49.8 1/4" FRACTURE PARTIALLY HEALED

1017 RUN #6
DEPTH 50 - 60'
RECOVERY 10' OR 100%
RQD 8.3' OR 83%
50-59.2 RED SILTSTONE/MUD STONE.. HARD
59.2-60' RED (DK) CLAY w/ ROCK FRAGMENTS
VERY WEATHERED SOFT
50.9' 1/4" FRACTURE NOT HEALED, HORIZONTAL
51.7' 1/2" FRACTURE 10°
52' 1/8" FRACTURE 30° PARTIALLY HEAL
52.8 1/2" HORIZ. FRACTURE FILLED w/
SILT, CLAY & ROCK FRAGMENTS
→ 53.8" SAA w/ SOME GREY/GREEN F GRAIN SHALE

Location C1C - EDISON Date 2/20/18

Project / Client USACOE

WELL INSTALLATION - DRILLING

55.2 1/4" 10° FRACTURE
55.4 SAA
56.7 1/4" HORIZONTAL FRACTURE
SILT & CLAY FILLED
57.4' 1/8" 5° FRACTURE
57.9' 1/8" HORIZONTAL
58.6 1/4" HORIZONTAL FRACTURE
59.0 1/4" 5° FRACTURE -
CHANGE FROM SILTSTONE TO
CLAY/SILT
1122 Run #7
Depth 60-70'
Recovery 9.3 /93%
RQD 7.1' /71%
LITHO.
60 - 60.1 SAA - LITHO LITTLE LAMINAR
Lithology CHANGE → 60.1 - 70' RED F SANDSTONE /
SILTSTONE
60.1 1/4" 10° FRACTURE PARTLY HEALED CALCITE
60.7' 1/4" 5° FRACTURE - MECH
62.3' 1" HORIZ. FRACTURE w/ SHALE
FRAGMENT. 0-5°
64' OXIDATION
1/8" FRACTURE

Location CIC - EDISON Date 2/20/18

Project / Client USACOE

WELL INSTALLATION - DRILLING

64.3 - 65.8' 85° HAIRLINE FRACTURE HEALED w/ CALCIUM.

68.1' 1" HORIZONTAL FRACTURE HEALED w/ MUDSTONE

69.3' 1/2" NEAR HORIZONTAL w/ LITTLE CALCIUM.

69.6' HAIRLINE HEALED FRACTURE

Run #8

1219 Run #8

Depth 70'-80'

Recovery 8.9 ft / 89%

RQD 4.4 ft / 44%

Lithe

70 - 74.4 Red silt stone massive hard to very hard, competent.

74.4 - 75.8 ft Red shale, horizontally bedded, possibly weathered, soft. Highly fractured and friable

75.8 - 77.2 ft - Gray-green fine shale, soft, highly fractured horizontal bedding, potential for contamination

77.2 - 79.1 ft Same as 74.4 - 75.8

Location CIC Edison Date 2/20/18

Project / Client USACOE

Well installation - drilling

~~70~~ - 70.1' - 1/4 near horizontal fracture partly healed calcium deposit

70.9' - Fully healed fracture 10°, 1/8"

71.4 - 1" near horizontal, partially healed with mudstone

74' - 1/2", 5°, fracture

74.4 - 79.1 highly - very highly fractured water bearing zone.

1420 Run #9

DEPTH 80 - 90'

RECOVERY 9.0' / 90%

RQD 2.4' / 24%

80 - 82.4 RD. F GRAINED SANDSTONE / SILTSTONE

82.4 - 82.6 TAN SILT / MUDSTONE

82.6 - 85.7' RED F GRAINED SAND / SILTSTONE.

85.7 - 90' LT GR TO GR GR. SANDSTONE.

80.5' 1/4" NEAR HORIZONTAL FRACTURE.

80.7 1/4" 5-10° FRACTURE.

Location C/C - EDISON Date 02/20/18

Project / Client USACOE.

WELL INSTALLATION - DRILLING

81.8 TO 84' HIGHLY FRACTURED HORIZONTAL ZONE
EVIDENCE OF A PARTIALLY
HEALED VERTICAL SEAM.

84-85.7' MOD. FRACTURED HORIZONTAL ZONE W/
PARTIAL HEAL VERTICAL SEAM

86.5-90' MOD. FRACTURED HORIZONTAL
ZONE

1541 RUN # 10
DEPTH 90-100'
RECOVERY 8.0'/80%
RQD 0.0'/0%

LITHO 90-94.4- SAA.
94.4-100.0 TAN.
FINELY BEDDED F GR. SANDSTONE
VERY SOFT HIGHLY FRACTURED
ENTIRE RUN IS HIGHLY FRACTURED

Location C/C - EDISON Date 2/20/18

Project / Client USACOE

WELL INSTALLATION - DRILLING

1610 OUT OF WATER -
DRILLING DONE FOR TODAY
CREW CLEANING UP.

1645 SUMMIT DRILLING OF SITE

1730 TEST AMERICA DID NOT
SHOW UP FOR WASTE
SAMPLES.
A. VALLI OFF - SITE

2/20/2018

Location CIC - EDISON Date 2/21/2018

Project / Client USACOE

WELL INSTALLATION - DRILLING

0700 A VALLI ONSITE
WEATHER: CLOUDY, FOGGY 59°
WIND - SW @ 9MPH
EXPECTED: SUNNY WARM HIGH 73°
WINDS WSW @ 10-15°MPH

0730 A. VALLI CALIBRATED PID & MULTIGAS METER
SEE CAL LOGS

0800 SUMMIT DRILLING ARRIVES ONSITE
MICHAEL WILSON - DRILLER
JORDAN TALMAGE - HELPER
TIM McCABE - HELPER

0805 A VALLI CONDUCTS H & S BRIEFING
SUMMIT - GASING & SETTING UP RIG TO BEGIN DRILLING

0900 DRILLING BEGINS - WILL DRILL 100-110'

0915 GREG USACOE ONSITE

Location CIC - EDISON Date 2/21/2018

Project / Client USACOE

WELL INSTALLATION

0935 RECIEVED RUN # 11
DEPTH - 100-110'
RECOVERY 8.0' OR 80%
RQD - 0.0' OR 0%
100-105' Gr/GREEN SILTSTONE
HIGHLY FRACTURED
VERTICAL FRACTURES PRESENT
OXIDATION PRESENT ON FRACTURE FACES
2" LIGHT/WHITE F GRAINED SANDSTONE
105-110' PURPLE & GRAINE MUDSTONE - HIGHLY FRACTURE W/ LITTLE VERT. FRACTURE THAT SHOW EVIDENCE OF HEALING
NO OXIDATION.
HIGHLY WEATHERED

1100 RECIEVED RUN # 12.
DEPTH 110-120'
REC 6.0' OR 60%
RQD 2.1' OR 21%

Location CIC- EDISON Date 2/21/2018

Project / Client USACOE

WELL INSTALLATION - DRILLING

2.8' RED SILTSTONE HIGHLY FRACTURE & WEATHER.
F-C SAND (RIVER BED)?

6.4' GR/GR. F GRAINED SILT / SANDSTONE
F-M SAND & SILT PRESENT.
MOD WEATHERED.

1.8 RED SANDSTONE SLIGHTLY
WEATHER & FRACTURED
~3 1/4" TO 1/2" NEAR
HORIZONTAL FRACTURES

* SOFT SAND, SILT & ROCK
@ BOTTOM.

1328 RECIEVED RUN #13
DEPTH 120-130'
RECOVERY 9.4' / 94%
RQD 3.8' / 38%

120-120.6 SAA

120.6-125.2 GR F GRAINED SILTSTONE
HIGHLY FRACTURE-
HORIZONTAL TO NEAR HORIZONTAL
LITTLE OXIDATION & HEALING

125.2-126.8 RD SILT / MUDSTONE
HIGHLY FRACTURED

Location ~~2/2~~ CIC- EDISON Date 2/21/2018

Project / Client USACOE

WELL INSTALLATION - DRILLING

126.8-130 - DK PURPLE SILTSTONE
(3x) 1/4" NEAR HORIZONTAL
FRAC

1335 GREG TO MAKE PHONE CALL

1430 IT IS DETERMINED THAT
WE WILL SCREEN 120-130' bgs
WE CANNOT START CONSTRUCTING
WELL TODAY

1435 CLEANING UP AROUND SITE
& REMOVING EXTRA DRILLING
RODS

1515 GREG USACOE OFF SITE.

1630 SUMMIT CLEANED UP &
MOVED DRUMS TO STAGING AREA.

1645 CREW OFFSITE
A VALLI TO TEST AMERICA W/ SAMPLES

Location CIC - EDISON Date 2/22/2018

Project / Client USACOE

WELL CONSTRUCTION.

0700 - A. VALLI ONSITE

SUMMIT - ALREADY ONSITE

WEATHER - CLOUDY 46° WIND NE @ 10 mph

FEELS LIKE 39°

EXPECTED: RAIN HIGH 46°

WINDS NE @ 10 TO 15 MPH.

SUMMIT DRILLING -

MICHAEL WILSON: DRILLER.

JORDAN TALMAGE: HELPER

DANIEL HALEKI - HELPER.

0710 A. VALLI CONDUCTS H & S BRIEFING

SUMMIT SETTING UP

WELL CONSTRUCTION SUPPLIES

0800 WILL CONSTRUCT WELL

0.010 SLOT - 10 ft OF

SCREEN @ 120-130' bgs.

SEE NEXT PAGE FOR

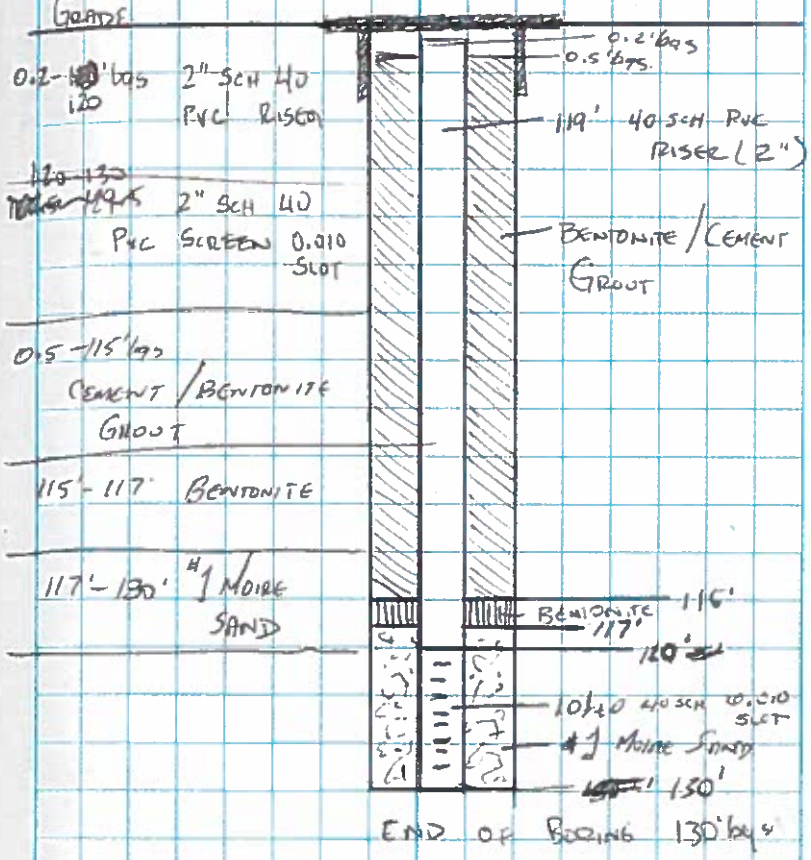
WELL CONSTRUCTION LOG.

Location CIC - EDISON Date 2/22/2018

Project / Client USACOE

WELL CONSTRUCTION

BF - ~~2DT~~ AV 2B2.



Location CIC - EDISON Date 2/22/2018

Project / Client USACOE

USACOE - WELL CONSTRUCTION

0920 ROCK AT BOTTOM OF BORE HOLE
PVC ONLY DOWN TO 129.5' bgs
SET PVC SCREEN 119.5' TO 129.5' bgs
@ 1 MOIRE SAND
117' TO 129.5' bgs
6 BAGS

1000 INSTALLED 2' BENTONITE PLUG.
115' TO 117' w/ 2X - 5GAL. BUCKETS
OF BENTONITE CHIPS

1030 MIXED BATCH OF GROUT
7 BAGS OF CEMENT TO 1/2 BAG
BENTONITE

1045 PULLING OUTER CASING

1130 CASING OUT OF GROUND &
DECONED
MOVING RIG TO STAGING
AREA.

Location CIC - EDISON Date 2/22/2018

Project / Client USACOE

WELL CONSTRUCTION

1145 ADDED ANOTHER BATCH OF
GROUT TO BORE HOLE
7 BAGS CEMENT TO 1/2 BAG BENTONITE

1200 SUMMIT DECONING EQUIP.
AND WILL STAGE FOR PICKUP
TOMORROW.

1530 CREW CONTINUING TO
MOVE EQUIP. &
MATERIALS
RIG OFF HOLE & DECONED

1600 RIG OFFSITE
CREW CLEANING UP ADDITIONAL
SUPPORT EQUIP.

1730 A. VALLI & CREW
OFF SITE

2-22-2018

Location CIC - EDISON Date 2/23/2018

Project / Client USACOE

WELL DEVELOPMENT

0700 A. VALLI ONSITE
WEATHER CLOUDY COLD 37°
WIND NE @ 5MPH FEEL LIKE 35°
EXPECTED: RAIN HIGH 43°
WINDS ~~W~~ E @ 5-10 MPH

0800 SUMMIT DRILLING ON SITE
JORDAN TALMAGE -
AND HELPER
WILL DEVELOPE WELL THEN
BUILD WELL PAD & FIX
SITE.

0830 SETUP @ BF-~~200~~ AU 2BR
GRUNFOS PUMP SET TO
BOTTOM OF WELL.

0900 WL IN WELL @ 4' bgs
PUMP ON PUMPING @
~2L/MIN.

0905 WATER IS TOO TURBID. WILL
WAIT TO CLEAR UP BEFORE
TAKING 1ST READING

0.16

Location CIC - EDISON Date 2/23/2018

Project / Client USACOE

WELL DEVELOPMENT

DEPTH TO WATER 7.02'
TOTAL DEPTH OF WELL 180.02
PUMP GEOPUMP
FLOW RATE 1L/MIN
5 PURGE VOLUME

TIME	PH	SC	TEMP	TURBIDITY
0930	6.40	0.770	11.94	597
1000	7.24	0.638	11.23	414
1030	7.97	0.538	10.20	367
1100	8.05	0.480	12.50	74.6
FINAL 1130	8.07	0.465	12.06	37.8
	REMOVED	~80	GALLONS	

2/23/2018

Location CIC - EDISON Date 2/25/2018

Project / Client USACOE

WELL DEVELOPMENT

1200 CREW TAKES LUNCH

1245 SUMMIT CONSTRUCTING WELL PAD

1400 CREW BEGINS REPAIR OF AREA w/ KUBOTA - REPAIRING RUTS

1700 REPAIR COMPLETE - HEAVY RAIN CREW OFF SITE

2-25-2018

AH VL

Location CIC EDISON Date 4/23/2018

Project / Client USACOE

GW SAMPLING

0700 A. VALLI & G. WISSINK (TC) ONSITE

WEATHER: SUNNY 42° WIND ENE @ 4mph

EXPECTED SUNNY HIGH 63°

WINDS E @ 5-10 mph

0715 M.P. (INSIGHT) ONSITE.

G.W → CALIBRATING EQUIP.

A.V. SETTING UP DECON AREA.

0745 MP → OFF TO PERFORM SYNOPTIC GW LEVELS

ONE U-52 NOT CALIBRATING

0900 G.W TO PINE TO REPLACE U-52.

A. VALLI TO WELL - MW-2S.

SEE LOW FLOW LOG SHEET.

A.V. CONDUCTED H&S BRIEFING

SEE TAILGATE FORM.

0910 BEGIN PURGING WELL MW-2S

1009 PURGING COMPLETE @ MW-2S

1018 SAMPLED MW-2S - 04232018

FOR VOCs, METALS & PESTICIDES

AH VL

MONITORING WELL LOG FORM

BORING LOCATION		
	Project: CIC-EDISON Project No Date Drilled: 2/19/2018 Date Completed: 2/23/2018 Logged By: A.Valli	Boring ID: ~~BF-2DB~~ AV 5/25/18 BF-2BR Northing
	Water Elevation (ft.). -67'btoc Date Measured: 2/23/2018	Ground Surface Elevation (ft.). Measuring Point (MP) Elevation (ft) MP is Top of PVC Casing Datum NGVD (1929)
	Total Depth (ft.): 130'bgs Diameter (in.) 6"	Drilling Contractor: Summit Drilling, Inc. Drilling Method: Sonic Drilling

Screen: Diameter 2" Depth 130-130' Slot Size 0.010 Slot
Casing: Diameter 2" Length 120' Type Sch 40 PVC
Sand (13') 117'-130' Bentonite Seal (2') 115'-117' Cement Grout Seal (115') 0-115'

DEPTH (FEET)	GRAIN SIZE % GRAVEL	% SAND	% FINES	MAX. PID READING (ppm)	RQD: N/%	DEPTH: ft.	SAMPLE RECOVERY	USCS/ASTM CLASSIFICATION	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (USCS name color; size and angularity of each component or plasticity; density; moisture content; additional facts)	ELEVATION (FEET)
0								Topsoil		0-0.2' TOPSOIL	
								SM		0.2-1.5' DK. BR. F. SAND, SOME SILT, LITTLE F GRAVEL DRY, MOTTLED	
								SW		1.5-2.2' DK. BR. F SAND, LITTLE SILT & F GRAVEL, MOIST	
5				0.0		0-10'	7.6'	SP		2.2-4.2' DK. BR. F. SAND, SOME F GRAVEL & SILT.	
								SW		4.2-7.6' MED. BR. F-M SAND, SOME SILT, LITTLE F GRAVEL, WET. 2" LOOSE SAND LENSES @ 5.5-5.7' & 6.6-6.9'	
10								SP		10-12' MED. BR. F SAND, SOME F GRAVEL (ANGULAR) LITTLE SILT.	
15				0.0		10 TO 20	9.4	SM		12-17.4' DK BR TO BR. F SAND, SOME SILT, LITTLE F GRAVEL	
20								SW		17.4-19.4' YELLOW BR. F SAND, LITTLE F GRAVEL (SUB-ROUNDED), TRACE SILT, LOOSE. WET.	
										20-22.4' LOOSE WET.	
25				0.0		20 TO 30	7.9'	ML-CL		22.4-25.9' RED. BR. SILT, SOME CLAY, LITTLE F GRAVEL, HARD.	
								ML-CL		25.9-27.9' DK. RD. SILT, SOME CLAY & WEATHERED RED SANDSTONE FRAGMENTS, VERY HARD	
30										30-34.1 RD. BR. VERY WEATHERED SILTSTONE W/ RED SANDSTONE FRAGMENTS.	WEATHERED BEDROCK
35				0.0		30 TO 40	9.1'	WEATHERED BEDROCK		34.1-39.1' RD. BR. WEATHERED SILTSTONE, HARD.	
40										BEDROCK	
45				X	5.4'/54%	40 TO 50	7.4'/74%	BEDROCK @ 42.5'		42.5-49.8' RED SILTSTONE/SHALE 42.6-43' FRACTURE ZONE 44-45' FRACTURE ZONE W/LAMINTATION & PARTIALLY HEALED FRACTURES 48.7' 1/8" FRACTURE, LITTLE HEALING. 49.8' 1/4" FRACTURE PARTIALLY HEALED.	
50											

*C California Split Spoon Sampler (2.5" I.D.)
S Standard penetration test sampler
c Cuttings
▼ Elevation of ground water

PROJECT NO.

Project: CIC-EDISON Project No:

Boring ID.: ~~BF-2DU~~ AV BF-2BR

DEPTH (FEET)	GRAIN SIZE % GRAVEL	% SAND	% FINES	MAX. PID READING (ppm)	RQD: N/%	Depth: ft.	SAMPLE RECOVERY	USCS/ASTM CLASSIFICAT.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION (USCS name; color; size and angularity of each component or plasticity; density; moisture content; additional facts)	ELEVATION (FEET)
50										50-59.2' RED SILTSTONE/MUDSTONE, HARD. 50.9' 1/4" HORIZ. FRACTURE, NOT HEALED 51.7' 10° 1/4" FRACTURE. 52-59.2' MULTIPLE HORIZ. TO 5° FRACTURE. PARTIALLY HEALED.	
55				X	83'/83%	50 TO 60	10'/100%				
60										59.2-60' DK. RD. CLAY w/ ROCK FRAGMENTS, VERY WEATHERED, SOFT. 60-60.1 SAA.	
65				X	7.1'/71%	60 TO 70	9.3'/93%			60.1-70' RED. F GRAINED SANDSTONE/SILTSTONE MULTIPLE HORIZ. TO 5° FRACTURES PARTIALLY HEALED OXIDATION @ 64'	
70										70-74.4' RED SILTSTONE, HARD TO V.HARD. COMPTENT.	
75				X	4.4'/44%	70 TO 80	8.9'/89%			74-75.8 RED SHALE, HORIZ. BEDDED, SOFT. POSSIBLY WEATHERED, LIGHTLY FRACTURED.	
80										75.8-77.2 GR/GR. F. SHALE, HORIZ. BEDDED & LIGHTLY FRACTURED	
85				X	2.4'/24%	80 TO 90	9.0'/90%			77.2-79.1' SAME AS 79.4 TO 75.8	
										79.1-79.4 SAME AS 75.8 TO 77.2	
										80-82.4 RD. F GRAINED SANDSTONE/SILTSTONE	
										82.4-82.6 TAN MUDSTONE/SILTSTONE	HIGHLY FRACTURED
90										82.6-85.7 RED. F. GRAINED SANDSTONE/SILTSONE	
										85.7-90' LT. GR TO GR. SANDSTONE	
95				X	0'/0.0%	90 TO 100	8.0'/80%			90-94.4 SAA. - HIGHLY FRACTURED.	
										94.4-100' TAN F. BEDDED, F GRAINED SANDSTONE HIGHLY FRACTURED	
100										100-105' GR/GR. SILTSTONE HIGHLY FRACTURED - VERTICAL FRACTURES & OXIDATION PRESENT	HIGHLY FRACTURED
105				X	0.0/0%	100 TO 110	8.0'/80%			105-110' PURPLE F GRAINED MUDSTONE. HIGHLY WEATHERED & FRACTURED	
110										110-112.8 RED SILTSTONE w/F-C SAND HIGHLY WEATHERED & FRACTURED	
115				X	2.1'/21%	110 TO 120	6.0'/60%			112.8-114.2 GR/GR. F. GRAINED SILTSTONE. F-M SAND & SILT PRESENT.	HIGHLY FRACTURED
120										119.2-126' RED SANDSTONE, SLIGHTLY WEATHERED	
125				X	3.8'/38%	120 TO 130	9.4'/94%			120.6-125.2 GR. F GRAINED SILTSTONE HIGHLY FRACTURED	HIGHLY FRACTURED
										125-126.8 RED SILT/MUDSTONE - HIGHLY FRACTURED	
										126' STONE. SLIGHTLY FRACTURED 4 Ho 2. FRACTURES	
130										END OF BORING @ 130' bgs	
135											
140											
145											
150											

PROJECT NO.

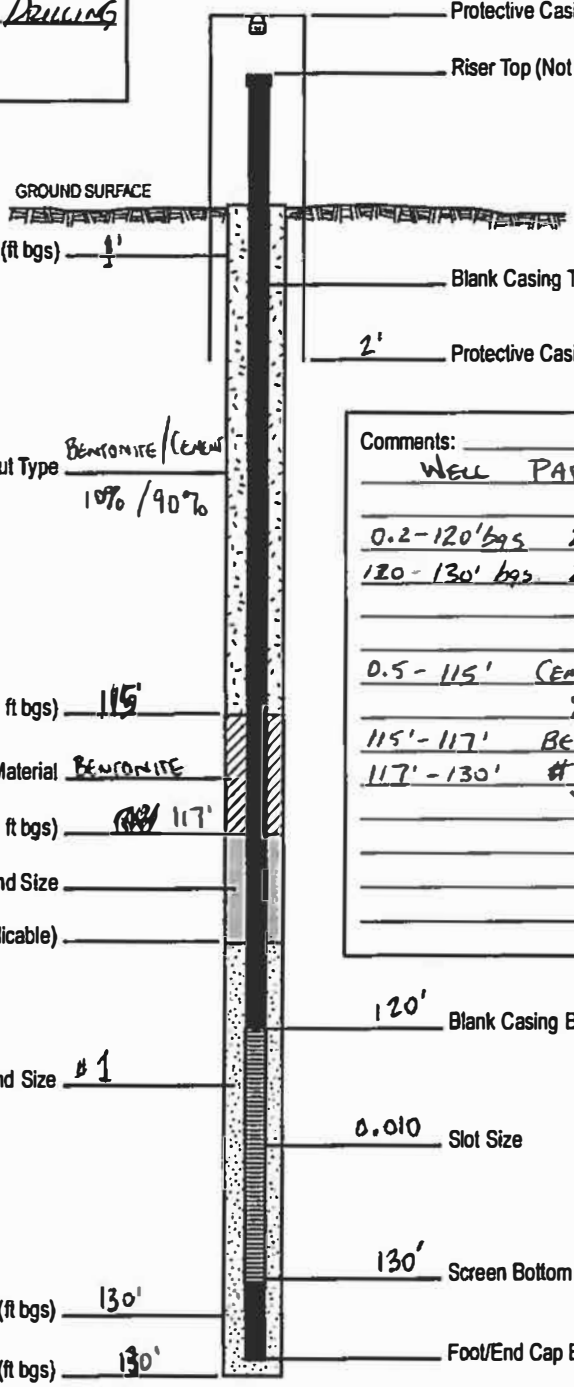
MONITORING WELL LOG FORM

MONITORING WELL COMPLETION FORM

Project No: CIC - EDISON, NJ

Drilling Company: SUMMIT DRILLING

On Base: ☒ Off Base: ☐



Protective Casing Top (ft ags) FLUSH MOUNT

Riser Top (Not applied to Flush Mount; ft ags)

GROUND SURFACE

Concrete Bottom/Grout Top Depth (ft bgs) 1'

Blank Casing Top Depth (Riser Bottom; ft bgs)

2' Protective Casing Depth (ft bgs)

Grout Type BENTONITE/CEMENT 10% / 90%

Grout Bottom Depth (Seal Top Depth; ft bgs) 115'

Seal Material BENTONITE

Filter Pack Top (Seal Bottom Depth; ft bgs) 117'

Fine Sand Size

Bottom Fine Sand (ft bgs; If applicable)

120' Blank Casing Bottom (Screen Top; ft bgs)

Coarse Sand Size #1

0.010 Slot Size

130' Screen Bottom (Foot Top; ft bgs)

Filter Pack Bottom (ft bgs) 130'

Borehole Depth (ft bgs) 130'

Foot/End Cap Bottom (Well Total Depth; ft bgs)

NOT TO SCALE

Comments:

WELL PAD 2'X2'

0.2-120' bgs 2" SCH 40 PVC RISER
120-130' bgs 2" SCH 40 PVC SCREEN
0.010 SLOT

0.5-115' CEMENT/BENTONITE GROUT
90% - 10%
115'-117' BENTONITE
117'-130' #1 MOIRE SAND

Loc ID/Well ID BE - 2 BR

Geologist A. VALL

Date Construction Started 2/22/2018

Date Construction Completed 2/23/2018

LOC Type (i.e. Monitoring Well) MONITORING WELL

Riser Material/Diameter PVC RISER / 2" SCH 40

Blank Casing Material/Diameter /

Screen Material/Diameter PVC SCH 4 0.010 SLOT / 2"

Protective Casing Type STEEL MANHOLE

Borehole Diameter 6"

Above Ground Completion ☐ Flush Mount ☒

USCS Classification of Screened Interval

PROJECT NO.

MONITORING WELL DEVELOPMENT

DATE: 2/23/2018 WEATHER: RAIN, COLD ~40°

WELL DESIGNATION: BF-2BR PROJECT NO:

FIELD PERSONNEL: A. VALLI SUBCONTRACTOR: TETRA TECH / SUMMIT

WELL SUMMARY:

Depth to NAPL: NA.

Depth of water: 4' bgs.

Total well depth: 130

Construction: SCREEN 120 - 130' bgs

2" PVC - 0.010 SLOT (10')

Start Time 0900 (a)

End Time 1130 (b)

Total Time 2hrs (b-a) 30MIN

Location Map

INSTRUMENTATION

pH meter (model): U-52 / HORIBA Calibrated with buffers: X 4 ___ 7 ___ 10

SC meter (model): U-52 / HORIBA Calibrated with standard solution: 4.59 µmhos/cm

Turbidity meter (model): HACH 2100Q Calibrated with: 0, 10, 100 NTU

DEVELOPMENT SUMMARY:

Development method: Bailer ___ Pump (type) GRUNFOS II Surge Block (type) SURGE W/ PUMP

5 purge volume calculation: 126' OF WATER x 0.16 (VOLUME/ft) = 20 GALLONS (1 VOLUME) x 5 = 100 GALLONS

Time	pH	SC (µmhos/cm)	Temp (°C)	Turbidity (NTU)	Pumping Rate	Gals. Evacuated	Visual Appearance/Comments
0900	TOO	MUCH	SILT	TO	GET	READINGS	~2L/MIN RED, OPAQUE
0930	6.40	0.770	11.94	597	2L/MIN	~60L OR 16	GALLONS CLOUDY, SURGED 3 TIMES
1000	7.24	0.638	11.23	414	2L/MIN	~120L OR 32	GALLONS CLOUDY, SURGED 3 TIMES
1030	7.97	0.538	10.20	367	2L/MIN	~180L OR 48	GAL. SLIGHTLY CLOUDY, SURGED 3
1100	8.05	0.480	12.50	74.6	2L/MIN	~240L OR 64	GAL. CLEAR, SURGED 3 TIMES

Final

Time	pH	SC (µmhos/cm)	Temp (°C)	Turbidity (NTU)	Pumping Rate	Gals. Evacuated	Visual Appearance/Comments
1130	8.07	0.465	12.06	37.8	2L/MIN	~300L OR 80	GALLONS CLEAR

WL STABILIZED AFTER 2.5 hours @ ~67' bTOC

PROJECT NO. ___

ERC NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NA

Manifest Document No.: D60805

2. Page 1 of 1

3. Generator's Name and Mailing Address
EPA Region 2
30 Whitman Avenue
Edison, NJ 08817

Site Address

4. Generator's Phone (877-251-4575

5. Transporter 1 Company Name: Environmental Recovery Corporation

6. US EPA ID Number: PAD987266749

A. State Transporter's ID

B. Transporter 1 Phone: 717-393-2627

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
Environmental Recovery Corporation
1076 Old Manheim Pike
Lancaster, PA 17601

10. US EPA ID Number: PAD987266749

E. State Facility's ID: 717-393-2627

F. Facility's Phone

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/DOT Solids	6	DRUMS	3,000 EST.	Pounds
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
1.) Approval #: 1803-00849-SPT

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

PO:

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed / Typed Name: X Matthew Pingitor SOV-IEECI on behalf of US EPA R2

Signature: X [signature]

Date: Month 04 Day 03 Year 18

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed / Typed Name: J. WIGGINS

Signature: J. Wiggins

Date: Month 04 Day 03 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed / Typed Name

Signature

Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed / Typed Name: Aaron Swan

Signature: [signature]

Date: Month 4 Day 3 Year 18

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE

White Copy: Environmental Recovery Corp. Yellow Copy: Invoice Copy Pink Copy: Transporter Gold Copy: Generator

New Jersey Department of Environmental Protection
Site Remediation Program

Monitoring Well Certification Form B - Location Certification

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: **66235 - CHEMICAL INSECTICIDE CORP**

List all AKAs: **CHEMICAL INSECTICIDE CORPORATION**

Street Address: **125 WHITMAN**

Municipality: **MIDDLESEX** (Township, Borough or City)

County: **EDISON TOWNSHIP** Zip Code: **08817**

Program Interest (PI) Number(s): **G000004383** Case Tracking Number(s): **SEE NOTES**

SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner **CHEMICAL INSECTICIDE CORPORATION**
2. Well Location (Street Address) **125 WHITMAN AVENUE**
3. Well Location (Municipal Block and Lot) Block# **199.A** Lot # **31.B1**

SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): **E201801159**
2. Site Well Number (As shown on application or plans): **BF-2BR**
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North **40 ° 31 ' 41.119 "** Longitude: West **74 ° 22 ' 1.924 "**
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North **617307.93** East **529038.49**
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): **108.59**
   Elevation Top of Outer casing: **109.03** Elevation of ground: **108.86**
   Check one: ☒ **NAVD 88** ☐ **NGVD 29** ☐ **On Site Datum** ☐ **Other**
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   NGS "NJTP" (NAD83_2011) (EPOCH 2010.00) (GEOID 12B)
   BENCHMARK: CASING ELEVATION OF BF-2D (109.48')
7. Significant observations and notes:
   ON LANDS OF (N/F) EDISON TOWNSHIP
   CASE: CHEMICAL INSECTICIDE OU4 (GROUNDWATER)

SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

PROJECT NO. ***2167LIST***

Professional Land Surveyor's Signature: Date **04/02/18**

Surveyor's Name: **JAMES M. STEWART** License Number: **24GS02610800**

Firm Name: **DENNIS W. SKLAR, INC.** Certificate of Authorization #: **24GA28150900**

Mailing Address **2837 OGDEN AVENUE**

City/Town: **BENSALEM** State **PENNSYLVANIA** Zip Code: **19020**

Phone Number **(215) 268-7988** Ext.: **N/A** Fax: **(215) 268-7966**

Description: Facing South along fence line of neighboring property. New well (BF-2BR) pad under poly. Tracks leading up to the well smooth over to fill in voids.
Date Taken: 02/23/2018

Description: Facing South along fence line of neighboring property. New well (BF-2BR) completed flush mount and concrete pad.

Date Taken: 02/23/2018

APPENDIX B

Water Level Measurements and USEPA Well Assessment Checklists

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: BF-2
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	104.52	
Latitude		
Longitude		
Northing (State Plane)	617318	
Easting (State Plane)	529088.8	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 105.32
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 35.3 *ftbgs*
Well Depth (as measured): 34.08 *fttoc*
Screened interval: 24.5-34.5 *ft*
Open hole interval: _____ *ft*
Depth to water: 9.71 *ftbtoc*
Date: 4/23/2018 *Time:* 1048

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.5 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID:
Well Tag ID: BF-2BR
Well Installation Date: 2/12/2018

	From Log	By GPS
Ground Surface Elevation	108.86	
Latitude		
Longitude		
Northing (State Plane)	617307.93	
Easting (State Plane)	529038.49	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: None
Elevation (top of inner casing: 108.59
Surface Casing Material: Steel
Well casing material: PVC
Surface Casing diameter: 8 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 130.0 *ftbgs*
Well Depth (as measured): 129.98 *fttoc*
Screened interval: 120-130 *ft*
Open hole interval: *ft*
Depth to water: 3.92 *ftbtoc*
Date: 4/23/2018 *Time:* 1500

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	**Yes**	No
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	Yes	**No**

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: BF-2D
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	108.18	
Latitude		
Longitude		
Northing (State Plane)	617366.4	
Easting (State Plane)	529046.4	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 109.48
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 91.3 *ftbgs*
Well Depth (as measured): 90.79 *fttoc*
Screened interval: 80-90 *ft*
Open hole interval: _____ *ft*
Depth to water: 13.57 *ftbtoc*
Date: 4/23/2018 *Time:* 1040

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	Yes	**NA**	No
Is the well surface casing in good condition?	**Yes**		No
Is the surface casing vertical?	**Yes**		No
Is there an internal well seal?	**Yes**		No
Has there been physical damage to the well?	Yes		**No**
Does sounding depth match completed depth?	**Yes**		No
Is measuring point marked?	**Yes**		No
Is the well clearly labeled?	**Yes**		No
Flush mount - Is it secure from runoff?	Yes	**NA**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	**Yes**	No
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Needs new lock for stick-up

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: BF-4
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	93.67	
Latitude		
Longitude		
Northing (State Plane)	617180.5	
Easting (State Plane)	529619.1	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: _____
Elevation (top of inner casing): 94.02
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 85.75 *ftbgs*
Well Depth (as measured): 85.18 *fttoc*
Screened interval: 75.4-85.4 *ft*
Open hole interval: _____ *ft*
Depth to water: TOC - WL at Top of Casing *ftbtoc*
Date: 4/23/2018 *Time:* 1030

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments There may be a leak in the seal causing the WL to come up to TOC

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: BF-5
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	94.95	
Latitude		
Longitude		
Northing (State Plane)	616806	
Easting (State Plane)	530061.2	

Cross streets (if applicable): Gourmet St.

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 95.73
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 35.71 *ftbgs*
Well Depth (as measured): 35.18 *fttoc*
Screened interval: 25.35-35.35 *ft*
Open hole interval: _____ *ft*
Depth to water: 9.30 *ftbtoc*
Date: 4/23/2018 *Time:* 0950

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: FU
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	95.06	
Latitude		
Longitude		
Northing (State Plane)	616815.4	
Easting (State Plane)	529626.8	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: None
Elevation (top of inner casing): 95.61
Surface casing material: Steel
Well casing material: PVC
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 15.55 *ftbgs*
Well Depth (as measured): 13.70 *fttoc*
Screened interval: 5-15 *ft*
Open hole interval: _____ *ft*
Depth to water: 3.84 *ftbtoc*
Date: 4/23/2018 *Time:* 1007

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: GU
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	94.7	
Latitude		
Longitude		
Northing (State Plane)	617084.7	
Easting (State Plane)	529627.5	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: _____
Elevation (top of inner casing): 95.25
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 36.55 *ftbgs*
Well Depth (as measured): 35.40 *fttoc*
Screened interval: 26-36 *ft*
Open hole interval: _____ *ft*
Depth to water: 3.14 *ftbtoc*
Date: 4/23/2018 *Time:* 1023

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	Yes	**No**
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	Yes	**No**

Other Comments Concrete Pad needs to be repaired.

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	**Yes**	No
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	Yes	**No**

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-1BRD
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	110.69	
Latitude		
Longitude		
Northing (State Plane)	617758.6	
Easting (State Plane)	528988.7	

Cross streets (if applicable): Whitman Ave.and Rose Street

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 111.14
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 12 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 100.45 *ftbgs*
Well Depth (as measured): 99.52 *fttoc*
Screened interval: 90-100 *ft*
Open hole interval: _____ *ft*
Depth to water: 13.79 *ftbtoc*
Date: 4/23/2018 *Time:* 0744

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-1BRS
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	111.09	
Latitude		
Longitude		
Northing (State Plane)	617750.9	
Easting (State Plane)	528979.4	

Cross streets (if applicable): Whitman Ave. and Rose Street

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 111.39
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 45.3 *ftbgs*
Well Depth (as measured): 44.83 *fttoc*
Screened interval: 35-45 *ft*
Open hole interval: _____ *ft*
Depth to water: 15.56 *ftbtoc*
Date: 4/23/2018 *Time:* 0748

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID:
Well Tag ID: MW-1S
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	111.77	
Latitude		
Longitude		
Northing (State Plane)	617736.1	
Easting (State Plane)	528959.6	

Cross streets (if applicable): Whitman Ave. and Rose Street

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 111.39
Surface casing material: Steel
Well casing material: PVC
Surface Casing diameter: 6 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 17.62 *ftbgs*
Well Depth (as measured): 16.22 *fttoc*
Screened interval: 7-17 *ft*
Open hole interval: *ft*
Depth to water: 4.02 *ftbtoc*
Date: 4/23/2018 *Time:* 0751

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-2BR
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	104.16	
Latitude		
Longitude		
Northing (State Plane)	617522.1	
Easting (State Plane)	529713.2	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 104.48
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 90.32 *ftbgs*
Well Depth (as measured): 88.29 *fttoc*
Screened interval: 80-90 *ft*
Open hole interval: _____ *ft*
Depth to water: 5.90 *ftbtoc*
Date: 4/23/2018 *Time:* 0815

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID:
Well Tag ID: MW-2I
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	104.49	
Latitude		
Longitude		
Northing (State Plane)	617510.3	
Easting (State Plane)	529700.4	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 104.74
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 35.25 *ftbgs*
Well Depth (as measured): 34.70 *fttoc*
Screened interval: 25-35 *ft*
Open hole interval: *ft*
Depth to water: 6.15 *ftbtoc*
Date: 4/23/2018 *Time:* 0820

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID:
Well Tag ID: MW-2S
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	104.46	
Latitude		
Longitude		
Northing (State Plane)	617515.4	
Easting (State Plane)	529705	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 105.32
Surface casing material: Steel
Well casing material: PVC
Surface Casing diameter: 8 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 14.3 *ftbgs*
Well Depth (as measured): 13.40 *fttoc*
Screened interval: 4-14 *ft*
Open hole interval: *ft*
Depth to water: 5.41 *ftbtoc*
Date: 4/23/2018 *Time:* 0818

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingi
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-3BR
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	86.4	
Latitude		
Longitude		
Northing (State Plane)	616365.4	
Easting (State Plane)	531000.7	

Cross streets (if applicable): Patrick Ave. and Cortlandt St.

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 87.85
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 39.45 *ftbgs*
Well Depth (as measured): 40.29 *fttoc*
Screened interval: 28-38 *ft*
Open hole interval: _____ *ft*
Depth to water: 3.09 *ftbtoc*
Date: 4/23/2018 *Time:* 0850

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**		No
Is the well surface casing in good condition?	**Yes**		No
Is the surface casing vertical?	Yes		**No**
Is there an internal well seal?	**Yes**		No
Has there been physical damage to the well?	Yes		**No**
Does sounding depth match completed depth?	**Yes**		No
Is measuring point marked?	**Yes**		No
Is the well clearly labeled?	**Yes**		No
Flush mount - Is it secure from runoff?	Yes	**NA**	No

Other Comments Casing slightly tilted

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-3S
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	85.5	
Latitude		
Longitude		
Northing (State Plane)	616342.9	
Easting (State Plane)	531004.3	

Cross streets (if applicable): Patrick Ave. and Cortlandt St.

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 88.4
Surface casing material: Steel
Well casing material: PVC
Surface Casing diameter: 6 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 16.9 *ftbgs*
Well Depth (as measured): 15.90 *fttoc*
Screened interval: 4-14 *ft*
Open hole interval: 0-4 *ft*
Depth to water: 3.71 *ftbtoc*
Date: 4/23/2018 *Time:* 0848

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**		No
Is the well surface casing in good condition?	**Yes**		No
Is the surface casing vertical?	**Yes**		No
Is there an internal well seal?	**Yes**		No
Has there been physical damage to the well?	Yes		**No**
Does sounding depth match completed depth?	**Yes**		No
Is measuring point marked?	**Yes**		No
Is the well clearly labeled?	**Yes**		No
Flush mount - Is it secure from runoff?	Yes	**NA**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-4BR
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	115.93	
Latitude		
Longitude		
Northing (State Plane)	617588.6	
Easting (State Plane)	528348.2	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 117.28
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 59.35 *ftbgs*
Well Depth (as measured): 60.20 *fttoc*
Screened interval: 48-58 *ft*
Open hole interval: _____ *ft*
Depth to water: 22.85 *ftbtoc*
Date: 4/23/2018 *Time:* 1116

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**		No
Is the well surface casing in good condition?	**Yes**		No
Is the surface casing vertical?	**Yes**		No
Is there an internal well seal?	**Yes**		No
Has there been physical damage to the well?	Yes		**No**
Does sounding depth match completed depth?	**Yes**		No
Is measuring point marked?	**Yes**		No
Is the well clearly labeled?	**Yes**		No
Flush mount - Is it secure from runoff?	Yes	**NA**	No

Other Comments Multiple notches in well casing, confirm survey point

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID:
Well Tag ID: MW-4S
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	115.69	
Latitude		
Longitude		
Northing (State Plane)	617603.2	
Easting (State Plane)	528341.8	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 118.29
Surface casing material: Steel
Well casing material: PVC
Surface Casing diameter: 6 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 19.6 *ftbgs*
Well Depth (as measured): 19.02 *fttoc*
Screened interval: 7-17 *ft*
Open hole interval: *ft*
Depth to water: 9.09 *ftbtoc*
Date: 4/23/2018 *Time:* 1112

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**		No
Is the well surface casing in good condition?	**Yes**		No
Is the surface casing vertical?	**Yes**		No
Is there an internal well seal?	**Yes**		No
Has there been physical damage to the well?	Yes		**No**
Does sounding depth match completed depth?	**Yes**		No
Is measuring point marked?	**Yes**		No
Is the well clearly labeled?	**Yes**		No
Flush mount - Is it secure from runoff?	Yes	**NA**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingi
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-5BR
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	104.22	
Latitude		
Longitude		
Northing (State Plane)	617340	
Easting (State Plane)	529113.9	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 105.32
Surface casing material: Steel
Well casing material: PVC
Surface Casing diameter: 6 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 63.45 *ftbgs*
Well Depth (as measured): 63.06 *fttoc*
Screened interval: 53-63 *ft*
Open hole interval: _____ *ft*
Depth to water: 8.75 *ftbtoc*
Date: 4/23/2018 *Time:* 1045

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	Yes	**No**
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments Well needs to be permanently labeled

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	Yes	**No**

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID:
Well Tag ID: MW-7BR
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	95.35	
Latitude		
Longitude		
Northing (State Plane)	616812.9	
Easting (State Plane)	529631.5	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: None
Elevation (top of inner casing: 95.8
Surface casing material: Steel
Well casing material: PVC
Surface Casing diameter: 8 *inches*
Well Diameter: 2 *inches*
Well Depth (as installed): 44.45 *ftbgs*
Well Depth (as measured): 44.19 *fttoc*
Screened interval: 34-44 *ft*
Open hole interval: *ft*
Depth to water: 4.32 *ftbtoc*
Date: 4/23/2018 *Time:* 1010

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	Yes	**No**

Other Comments Bolt Missing from vault cap

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	**Yes**	No
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	Yes	**No**

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: MW-8BR
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	104.84	
Latitude		
Longitude		
Northing (State Plane)	616453.3	
Easting (State Plane)	530010.9	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 105.29
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 63.45 *ftbgs*
Well Depth (as measured): 63.27 *fttoc*
Screened interval: 53-63 *ft*
Open hole interval: _____ *ft*
Depth to water: 15.74 *ftbtoc*
Date: 4/23/2018 *Time:* 0914

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID:
Well Tag ID: NUS-2D
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	99.67	
Latitude		
Longitude		
Northing (State Plane)	616745.8	
Easting (State Plane)	528866.2	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 100.19
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 12 *inches*
Well Diameter: 8 *inches*
Well Depth (as installed): 105.52 *ftbgs*
Well Depth (as measured): 105.62 *fttoc*
Screened interval: 89-105 *ft*
Open hole interval: *ft*
Depth to water: 18.92 *ftbtoc*
Date: 4/23/2018 *Time:* 1440

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	Yes	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: NUS-3D
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	119.40	
Latitude		
Longitude		
Northing (State Plane)	616683.5	
Easting (State Plane)	528591.5	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 120.02
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 43.62 *ftbgs*
Well Depth (as measured): 40.00 *fttoc*
Screened interval: 25-43 *ft*
Open hole interval: _____ *ft*
Depth to water: 7.94 *ftbtoc*
Date: 4/23/18 *Time:* 1250

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	Yes	**NA**	No
Is the well surface casing in good condition?	**Yes**		No
Is the surface casing vertical?	**Yes**		No
Is there an internal well seal?	**Yes**		No
Has there been physical damage to the well?	Yes		**No**
Does sounding depth match completed depth?	**Yes**		No
Is measuring point marked?	**Yes**		No
Is the well clearly labeled?	**Yes**		No
Flush mount - Is it secure from runoff?	Yes	**NA**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: NUS-3S
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	120.29	
Latitude		
Longitude		
Northing (State Plane)	616681	
Easting (State Plane)	528598.9	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 120.64
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 14.35 *ftbgs*
Well Depth (as measured): 16.55 *fttoc*
Screened interval: 4-14 *ft*
Open hole interval: _____ *ft*
Depth to water: 8.62 *ftbtoc*
Date: 4/23/2018 *Time:* 1255

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? **Yes** No

Well Condition

Is the concrete pad in good condition?	Yes **NA**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	Yes **NA**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: OU
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	94.4	
Latitude		
Longitude		
Northing (State Plane)	616797.4	
Easting (State Plane)	530059.1	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: _____
Elevation (top of inner casing): 94.7
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 8 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 8.8 *ftbgs*
Well Depth (as measured): 6.94 *fttoc*
Screened interval: 3.5-8.5 *ft*
Open hole interval: _____ *ft*
Depth to water: 5.10 *ftbtoc*
Date: 4/23/2018 *Time:* 0948

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	Yes	**No**
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments Well depth is 1' over reported well depth.

Recommendations

Well needs to be redeveloped	**Yes**	No
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Well may need to be re-developed.

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: QD
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	110.68	
Latitude		
Longitude		
Northing (State Plane)	616751.9	
Easting (State Plane)	529370.6	

Cross streets (if applicable): N/A

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well*
Well lock\security type: None
Elevation (top of inner casing): 110.93
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 48.25 *ftbgs*
Well Depth (as measured): 47.54 *fttoc*
Screened interval: 38-48 *ft*
Open hole interval: _____ *ft*
Depth to water: 18.46 *ftbtoc*
Date: 4/23/2018 *Time:* 0937

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex Valli **(Print)**
(Sign)

EPA Region 2 Superfund Well Assessment Checklist

Facility Information

Site Name: Chemical Insecticide Corporation (CIC)
Site Address: 30 Whitman Ave., Edison
Site County: Middlesex County
Site State: New Jersey
EPA Site ID Number: NJD980484653
Site Owner: Multiple owners
EPA Project Manager: Mark Austin, USEPA RPM

Well Locational Information

State Well ID: _____
Well Tag ID: UU
Well Installation date: Unknown

	From Log	By GPS
Ground Surface Elevation	93.93	
Latitude		
Longitude		
Northing (State Plane)	616309.5	
Easting (State Plane)	530363.2	

Cross streets (if applicable): Patrick Ave. and Cortlandt St.

GPS Instrument used: N/A
Datum: N/A
Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well*
Well lock\security type: Padlock
Elevation (top of inner casing): 95.73
Surface casing material: Steel
Well casing material: Stainless Steel
Surface Casing diameter: 6 *inches*
Well Diameter: 4 *inches*
Well Depth (as installed): 19.8 *ftbgs*
Well Depth (as measured): 19.04 *fttoc*
Screened interval: 8-18 *ft*
Open hole interval: _____ *ft*
Depth to water: 6.30 *ftbtoc*
Date: 4/23/2018 *Time:* 0907

* If multilevel well please see attached worksheet.

EPA Region 2 Superfund Well Assessment Checklist

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): 0.0 *ppm*

Multi-gas/CGI meter Readings taken (if applicable):

LEL: _____ *% LEL*
O_2: _____ *40% Vol.*
CO: _____ *ppm*
H_2S: _____ *ppm*

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	Yes	**NA**	No
Is the well surface casing in good condition?	**Yes**		No
Is the surface casing vertical?	**Yes**		No
Is there an internal well seal?	**Yes**		No
Has there been physical damage to the well?	Yes		**No**
Does sounding depth match completed depth?	**Yes**		No
Is measuring point marked?	**Yes**		No
Is the well clearly labeled?	**Yes**		No
Flush mount - Is it secure from runoff?	Yes	**NA**	No

Other Comments _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Inspected by: Matt Pingitor
Date of Inspection: 4/23/2018
Reviewed by: Alex valli **(Print)**
(Sign)

APPENDIX C

Groundwater Sampling Logs

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 9.50 btoc
Total Well Depth (ft): 35.20 btoc
Screen Interval (ft): 35-25 bgs
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): 30' btoc
Desired Purge Rate (ml/min): 100-200
Desired Compressor Pressure (psi): 20 psi
Purge Volume (gal): 2 gallons

Date: 4/25/18
Well No:
Well Permit No: BF-2
Purge/Sampling Method: Bladder
Weather conditions: Rainy, breezy, 60°F

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1011	6.79	11.84	0.324	0.48	-22	36.7	9.68	120	Clear	
1016	6.72	11.90	0.324	0.00	-22	40.6	" "	" "	" "	
1021	6.70	11.93	0.324	0.00	-23	58.8	" "	" "		
1026	6.71	11.94	0.324	" "	-26	59.7	" "	" "	" "	
1032	6.71	11.98	0.324	" "	-28	49.8	" "	" "	" "	
1037	6.67	11.99	0.324	" "	-30	41.7	" "	" "	" "	
1042	6.69	11.99	0.324	" "	-29	38.6	" "	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes: Sample 10:47

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 3.17 bmc.
Total Well Depth (ft): 1
Screen Interval (ft): 120 - 130' bgs
PID Headspace Reading (ppm): 0.0

Site Location: Colusa NJ
Pump Intake Depth (ft): 125' bmc.
Desired Purge Rate (ml/min): 50 - 150
Desired Compressor Pressure (psi): 100
Purge Volume (gal): ~1 Gallon

Date: 4/25/18
Well No: BF-2BR
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: Drizzle. 58 °F, breezy

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1309	8.27	12.47	0.357	0.31	48	58.2	3.50	50ml	Clear	
1333	8.54	11.89	0.329	0.0	-90	174.3	3.98	100		
1338	8.50	11.88	0.320	"	-94	98.3	4.10	100		
1343	8.49	11.85	0.313	"	-98	45.4	4.32	100		
1348	8.49	11.87	0.310	"	-98	26.7	4.34	80		
1353	8.50	11.85	0.307	"	-98	17.3	4.35	70		
1358	8.50	11.93	0.305	"	-99	14.5	4.35	70		
1403	8.51	11.89	0.305	"	-99	15.2	4.34	70		
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes: Could not get consistent purge (1309) adjusted pump and tubing.
Consistent Purge begins at 1330.
Sample: 1408

SAMPLED BF-2D - 04252018 @ 0945

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 13.51' btoc
Total Well Depth (ft): 90.79' btoc
Screen Interval (ft): 80-90' bgs
PID Headspace Reading (ppm): 0.0 ppm

Site Location: EDISON, NJ
Pump Intake Depth (ft): 88' toc
Desired Purge Rate (ml/min): 200ML/MIN.
Desired Compressor Pressure (psi): 30
Purge Volume (gal): 3.5 GALLONS

Date: 4/25/18
Well No: BF-2D
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: LIGHT RAIN, WINDY 53°

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
0838	6.78	12.01	0.441	0.02	-16	579	13.55	200ML/MIN	PINK CLOUDY	
0843	6.89	12.12	0.477	0.00	-33	665	13.57	200ML/MIN	PINK CLOUDY	
0848	6.90	12.13	0.480	0.00	-43	602	13.59	200ML/MIN	PINK CLOUDY	
0853	6.89	12.11	0.472	0.00	-49	423	13.60	200ML/MIN	LT. PINK	
0858	6.81	12.12	0.446	0.00	-51	256	13.61	200ML/MIN	LT. PINK	
0903	6.65	12.12	0.401	0.00	-50	140	13.61	200ML/MIN	VRY. LT. PINK	
0908	6.58	12.14	0.377	0.00	-51	95.8	13.62	200ML/MIN	VRY LT. PINK	
0913	6.56	12.12	0.371	0.00	-52	59.1	13.62	200ML/MIN	VRY. LT. PINK	
0918	6.55	12.09	0.369	0.00	-53	51.2	13.62	200ML/MIN	CLEAR	
0923	6.54	12.12	0.367	0.00	-54	42.5	13.62	200ML/MIN	CLEAR	
0928	6.54	12.14	0.364	0.00	-57	20.5	13.63	200ML/MIN	CLEAR	
0933	6.54	12.12	0.363	0.00	-57	18.8	13.63	200ML/MIN	CLEAR	
0938	6.54	12.11	0.363	0.00	-58	19.7	13.63	200ML/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

SAMPLED BF-4 @ 1230
+MS/MSD

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 0.72 btoc
Total Well Depth (ft): 85.14 btoc
Screen Interval (ft): 75-85 bgs.
PID Headspace Reading (ppm): 0.0 ppm

Site Location: EDISON, NJ
Pump Intake Depth (ft): 80' btoc
Desired Purge Rate (ml/min): 150ml/min
Desired Compressor Pressure (psi): 60
Purge Volume (gal): 2.25 Gal.

Date: 4/25/18
Well No: BF-4
Well Permit No:
Purge/Sampling Method: BLADDER.
Weather conditions: RAIN, HEAVY 60°F

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1130	8.23	13.11	0.357	8.7	-2	10.9	0.80	150ml/min	CLEAR.	
1135	8.17	13.04	0.357	2.4	-9	11.9	0.82	150ml/min	CLEAR	
1140	8.13	13.07	0.357	1.5	-9	8.7	0.84	150ml/min	CLEAR	
1145			HAD TO ADJUST PUMP					150ml/min	CLEAR	
1150	8.20	13.32	0.356	1.69	12	11.2	0.87	150ml/min	CLEAR	
1155	8.26	13.23	0.354	1.05	13	10.5	0.89	150ml/min	CLEAR	
1200	8.17	13.23	0.354	0.28	13	7.72	0.91	150ml/min	CLEAR	
1205	8.10	13.23	0.354	0.00	2	6.54	0.93	150ml/min	CLEAR	
1210	8.07	13.24	0.354	0.00	-3	8.41	0.95	150ml/min	CLEAR	
1215	8.07	13.22	0.354	0.00	-6	7.21	0.97	150ml/min	CLEAR	
1220	8.07	13.21	0.354	0.00	-8	6.66	0.99	150ml/min	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 9.13 btoc
Total Well Depth (ft): 32.98 ft toc
Screen Interval (ft): 35-28 bgs.
PID Headspace Reading (ppm): 0.0 ppm

Site Location: Edison NJ
Pump Intake Depth (ft): 28 ft
Desired Purge Rate (ml/min): 200 ml/min
Desired Compressor Pressure (psi): ~20
Purge Volume (gal): 2.5 gallons

Date: 4/24/18
Well No: BF-5
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: 58°F, Clear

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
812	8.33	13.27	0.678	0.06	19	10.2	9.65	400	Clear	
817	8.43	12.88	0.674	0.00	-18	5.9	9.86	200	Clear	
822	8.42	12.68	0.669	0.00	-29	4.9	9.79	100	Clear	
827	8.44	12.27	0.665	0.00	-48	4.4	9.80	100	" "	
832	8.45	12.31	0.661	" "	-49	3.3	9.80	100	" "	
837	8.44	12.36	0.659	" "	-36	3.5	9.80	100	" "	
842	8.43	12.40	0.658	" "	-29	3.0	9.81	100	" "	
847	8.42	12.42	0.656	" "	-27	2.9	" "	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

Sample 8:52

Dup 1-04242018 : 12:01

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 3.81 btoc
Total Well Depth (ft): 13.76 btoc
Screen Interval (ft): 5 - 15' bgs
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): 9.64
Desired Purge Rate (ml/min): 100-200
Desired Compressor Pressure (psi): 5-15psi
Purge Volume (gal): 4 gallons

Date: 4/24/18
Well No: FU
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: 61° Mostly Sunny

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1028	7.45	14.15	1.07	0.15	24	201	3.89	200	Yellow-cloudy	
10:33	7.31	13.60	1.08	0.00	20	175	3.88	200ml/min	" "	
1038	7.27	13.45	1.07	0.00	21	142	3.88	200	" "	
1043	7.24	13.38	1.06	0.00	23	133	" "	" "		
1048	7.24	13.35	1.05	0.00	27	114	" "	" "	" "	
1053	7.18	13.32	1.04	0.00	33	100	" "	200	" "	
1058	7.08	13.39	1.03	0.00	45	90.6	" "	" "	Cloudy	
1103	6.98	13.44	1.03	0.00	56	79.8	" "	" "	Cloudy	
1108	6.84	13.47	1.02	0.00	72	70.6	" "	" "	mostly Clear	
~~1103~~ 1113	6.73	13.53	1.01	" "	86	60.5	" "	" "	" "	
1118	6.67	13.50	1.01	" "	93	56.9	" "	" "	" "	
1123	6.61	13.54	1.01	" "	101	52.7	" "	" "		
1128	6.60	13.49	1.01	" "	103	52.3	" "	" "	" "	
1133	6.58	13.48	1.00	" "	105	50.5	" "	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes: Begin Purge 1024
Sample 1138

SAMPLED GW 1445

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 1.08' btoc
Total Well Depth (ft): 35.40' btoc
Screen Interval (ft): 26-36' bgs
PID Headspace Reading (ppm): 0.0ppm.

Site Location: EDISON, NJ
Pump Intake Depth (ft): 30' btoc
Desired Purge Rate (ml/min): 100ML/MIN.
Desired Compressor Pressure (psi): 30 psi
Purge Volume (gal): 1 GAL.

Date: 4/25/10
Well No: GW.
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: RAIN, HEAVY 62°F. WINDY

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
~~1400~~ 1355	6.34	13.45	2.39	0.89	-44	77.6	1.10	<100ML/MIN	GR.	SEWER ODOR
1400	6.32	13.41	2.48	0.59	-50	72.5	1.15	<100ML/MIN	GR.	
1405	6.30	13.35	2.62	0.00	-62	74.2	1.20	<100ML/MIN	CLEAR	
1410	6.29	13.30	2.71	0.00	-71	69.7	1.22	<100ML/MIN	CLEAR	
1415	6.30	13.25	2.75	0.00	-77	64.2	1.20	<100ML/MIN	CLEAR	
1420	6.29	13.23	2.75	0.00	-80	60.8	1.21	<100ML/MIN	CLEAR	
1425	6.29	13.21	2.77	0.00	-86	62.5	1.21	<100ML/MIN	CLEAR	
1430	6.29	13.22	2.77	0.0	-87	60.1	1.22	<100ML/MIN	CLEAR	
1435	6.29	13.24	2.77	0.0	-88	58.7	1.22	<100ML/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC CPA
Initial Water Level (ft): 11.76 btoc
Total Well Depth (ft): 100 btoc
Screen Interval (ft): 90-100 bgs.
PID Headspace Reading (ppm): 0.0 ppm

Site Location: Edison NJ
Pump Intake Depth (ft): 95 bt
Desired Purge Rate (ml/min): 300 ml/min
Desired Compressor Pressure (psi): 40-50
Purge Volume (gal): 1.5-2 gallons

Date: 4/23/18
Well No: MW-1BRD
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: 65°F, Sunny

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1139	6.26	17.37	0.115	11.72	202	325	13.56	300	Gray-Brown	Water level dropping fast
1145	6.75	18.30	0.147	8.83	143	435	14.20	100	~~Clear~~ milky-yellow	
1150	6.87	18.79	0.148	8.60	132	37~~[illegible]~~	14.53	100	milky ~~Clear~~	
1155	7.04	18.75	0.148	8.40	115	301 ~~[illegible]~~	14.95	100	Milky "	
1200	7.13	19.76	0.150	8.01	127	275	15.02	75		
1205	7.19	19.79	0.150	7.98	123	262	15.21	75	Yellow-Cloudy	
1210	7.29	19.75	0.149	7.70	119	298	15.41	50	Yellow Cloudy	
1215	7.29	19.85	0.149	7.60	120	222	15.56	50	Yellow-cloudy	
1220	7.19	19.92	0.149	3.32	124	211	15.69	50	" "	
1225	7.31	20.05	0.150	2.81	123	201	15.78	50	" "	
1230	7.29	20.04	0.150	2.79	127	193	15.84	50	"	
1235	7.31	20.00	0.148	2.71	131	186	16.01	50	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes: Sample time: 1244

1220 SAMPLED MW-2I-042328

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 6.33 'btoc
Total Well Depth (ft): 34.69 'btoc
Screen Interval (ft): 25-35 'bgs
PID Headspace Reading (ppm): 1.9ppm.

Site Location: EDISON, NJ
Pump Intake Depth (ft): 30' btoc
Desired Purge Rate (ml/min): 200ML/MIN
Desired Compressor Pressure (psi): 20
Purge Volume (gal): 2.25 GAL.

Date: 4/23/2018
Well No: MW-2I
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: FAIR. 60°, CALM.

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1108	7.22	12.44	0.325	0.00	99	835	6.35	150ML/MIN	TAN.	
1113	7.18	12.34	0.323	0.00	60	OVER	6.35	150ML/MIN	V. TAN.	
1118	7.18	12.27	0.317	0.00	41	OVER	6.35	150ML/MIN	V. TAN	
1123	7.17	12.23	0.301	0.00	38	OVER.	6.35	150ML/MIN	V. TAN.	
1128	7.18	12.15	0.290	0.00	42	884	6.35	150ML/MIN	TAN	
1133	7.16	12.29	0.278	0.00	50	477	6.35	150ML/MIN	TAN.	
1138	7.15	12.41	0.270	0.00	58	259	6.35	150ML/MIN	LT. TAN.	
1143	7.15	12.48	0.265	0.00	66	156	6.35	150ML/MIN	LT. TAN.	
1148	7.15	12.51	0.263	0.00	70	107	6.35	150ML/MIN	CLOUDY	
1153	7.16	12.57	0.263	0.00	78	81	6.35	150 ML/MIN	CLOUDY	
1158	7.17	12.61	0.263	0.00	85	42.0	6.36	150ML/MIN	CLOUDY	
1203	7.18	12.61	0.263	0.00	87	35.4	6.36	150ML/MIN	~~CLOUDY~~ CLEAR	
1208	7.18	12.61	0.263	0.00	89	31.7	6.36	150ML/MIN	CLEAR	
1213	7.18	12.63	0.263	0.00	91	29.4	6.36	150ML/MIN	~~CLOUDY~~ CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

1018 SAMPLED MW-2S-04232018

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 5.40' bTOC
Total Well Depth (ft): ~~14.80~~ 13.41' bTOC
Screen Interval (ft): 4-14' bgs
PID Headspace Reading (ppm): 0.0 ppm

Site Location: EDISON, NJ
Pump Intake Depth (ft): 10' bgs.
Desired Purge Rate (ml/min): 100ML/MIN.
Desired Compressor Pressure (psi): 10
Purge Volume (gal): 1.75 GAL.

Date: 4/23/2018
Well No: MW-2S
Well Permit No:
Purge/Sampling Method: BLADDER.
Weather conditions: FAIR. 62°. BREEZY.

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
0919	~~[illegible]~~	10.31	0.522	2.91	139	72.8	5.58	100ML/MIN	LT. TAN	
0924	6.52 6.40	9.94	0.496	2.25	194	61.0	5.80	100ML/MIN	LT. TAN	
0929	6.52	9.77	0.492	2.00	199	40.3	5.91	100ML/MIN	LT. TAN	
0934	6.53	9.71	0.492	1.50	200	35.0	6.10	100ML/MIN	CLEAR.	
0939	6.53	9.70	0.490	1.36	199	31.6	6.18	100ML/MIN	CLEAR	
0944	6.53	9.58	0.486	1.01	196	27.8	6.25	100ML/MIN	CLEAR	
0949	6.52	9.49	0.477	0.80	193	18.1	6.32	100ML/MIN	CLEAR.	
0954	6.51	9.49	0.468	0.22	191	11.7	6.38	100ML/MIN	CLEAR	
0959	6.49	9.46	0.460	0.00	191	10.1	6.42	100ML/MIN	CLEAR	
1004	6.48	9.47	0.458	0.00	190	9.7	6.49	100ML/MIN	CLEAR	
1009	6.49	9.46	0.457	0.00	190	8.9	6.52	100 ML/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

SAMPLED MW-3BR @ 0950

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 3.07 btoc
Total Well Depth (ft): 40.32 btoc
Screen Interval (ft): 28-38' bgs
PID Headspace Reading (ppm): 0.0ppm

Site Location: EDISON, NJ
Pump Intake Depth (ft): 35' btoc
Desired Purge Rate (ml/min): 100ML/MIN
Desired Compressor Pressure (psi): 20
Purge Volume (gal): 4 GALLONS

Date: 4/24/2018
Well No: MW-3BR
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: FAIR 58°F

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
0840	7.16	11.68	0.221	1.87	226	176	3.38	150ML/MIN	LT. TAN	
0845	7.44	11.95	0.203	0.34	102	171	3.38	150ML/MIN	LT. TAN	
0850	7.49	12.08	0.202	0.00	69	143	3.40	150ML/MIN	LT. TAN	
0855	7.51	12.24	0.200	0.00	29	127	3.45	150ML/MIN	LT. TAN	
0900	7.52	12.34	0.200	0.00	11	98.5	3.47	150ML/MIN	CLEAR	
0905	7.52	12.41	0.200	0.00	-3	76.3	3.49	150ML/MIN	CLEAR	
0910	7.57	12.49	0.200	0.00	-12	67.4	3.50	150ML/MIN	CLEAR	
0915	7.56	12.53	0.200	0.00	-19	50.1	3.50	150ML/MIN	CLEAR	
0920	7.57	12.58	0.200	0.00	-24	43.7	3.50	150ML/MIN	CLEAR	
0925	7.57	12.58	0.200	0.00	-29	34.5	3.50	150ML/MIN	CLEAR	
0930	7.56	12.60	0.200	0.00	-31	29.6	3.50	150ML/MIN	CLEAR	
0935	7.58	12.63	0.200	0.00	-34	22.8	3.50	150ML/MIN	CLEAR	
0940	7.60	12.62	0.200	0.00	-37	23.4	3.50	150ML/MIN	CLEAR	
0945	7.59	12.63	0.200	0.00	-38	20.0	3.50	150ML/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

SAMPLED MW-3S @ 1135 & MS/MSD

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 3.67 'btoc
Total Well Depth (ft): 15.85 'btoc
Screen Interval (ft): 4-14 'bgs
PID Headspace Reading (ppm): ppm 0.0

Site Location: EDISON, NJ
Pump Intake Depth (ft): 10' btoc
Desired Purge Rate (ml/min): 100ML/MIN
Desired Compressor Pressure (psi): 10
Purge Volume (gal): 1 GALLON

Date: 4/24/2018
Well No: MW-3S
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: MOSTLY SUNNY, WINDY 62°F.

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1055	4.31	14.67	2.17	0.00	361	28.2	3.70	<100ML/MIN	CLEAR	
1100	4.24	14.83	2.24	0.00	368	29.6	3.72	<100ML/MIN	CLEAR	
1105	4.23	15.00	2.27	0.00	371	32.0	3.74	<100ML/MIN	CLEAR	
1110	4.22	15.41	2.31	0.00	372	27.3	3.76	<100ML/MIN	CLEAR	
1115	4.20	16.11	2.33	0.00	374	27.2	3.78	<100ML/MIN	CLEAR	
1120	4.19	16.15	2.32	0.00	375	28.7	3.80	<100ML/MIN	CLEAR	
1125	4.19	16.17	2.32	0.00	376	28.4	3.82	<100ML/M.	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 22.68 measured brow
Total Well Depth (ft): 58 (60.9) broc
Screen Interval (ft): 48-58 bgs.
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): 53
Desired Purge Rate (ml/min): 100-200
Desired Compressor Pressure (psi): 20-40
Purge Volume (gal): 2 gallons

Date: 4/24/18
Well No: MW4BR
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: 62°F, windy, sunny

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1258	6.48	18.25	0.357	0.75	17	433	22.70	100	Brown-Cloudy	
1303	6.47	18.53	0.355	0.16	6	280	22.72	100	Lt. Cloudy	
1308	6.44	18.76	0.353	0.00	1	206	22.72	" "	" "	
1313	6.44	18.90	0.352	" "	-3	144	22.72	" "	" "	
1318	6.43	18.89	0.351	" "	-6	109	" "	" "	" "	
1323	6.45	18.98	0.354	" "	-10	89.1	" "	" "	" "	
1328	6.46	19.01	0.355	" "	-11	75.0	" "	" "	Clear	
1333	6.48	19.02	0.356	" "	-14	65.6	" "	" "	" "	
1338	6.49	18.95	0.353	" "	-15	49.3	" "	" "	" "	
1343	6.50	19.01	0.358	" "	-15	46.5	" "	" "	" "	
1348	6.51	19.06	0.359	" "	-15	43.1	" "	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes: Sample 1353

LOW FLOW FIELD MEASUREMENT LOG

Project: GTC:EPA
Initial Water Level (ft): ~~11.76~~ 9.17 btoc
Total Well Depth (ft): ~~100~~ 19.1 btoc
Screen Interval (ft): ~~90-100~~ 7-17 bgs
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): ~16.0 ft
Desired Purge Rate (ml/min): ~/200 ml/min
Desired Compressor Pressure (psi): ~
Purge Volume (gal): 2.5 gallons

Date: 4/23/18
Well No: MW-4s
Well Permit No:
Purge/Sampling Method: Bailer - changed to bladder
Weather conditions: 62°F, Clear, breezy

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1407	6.87	16.54	0.470	4.02	170	67.3	9.17	1-bailer	Clear	
1442	6.69	15.15	0.483	7.55	150	59.1	9.65	200ml	Clear	
1447	6.66	14.38	0.487	2.96	157	18.3	9.66	180ml	Clear	
1452	6.61	13.63	0.482	3.22	161	12.2	9.71	180ml	Clear	
1457	6.61	13.55	0.481	2.21	165	6.2	9.75	180	" "	
1502	6.58	13.49	0.480	2.29	167	7.1	9.76	" "	" "	
1507	6.59	13.45	0.480	1.09	175	5.3	9.77	" "	" "	
1512	6.60	13.38	0.478	~~1.15~~ 1.15	178	5.8	9.77	" "	" "	
1517	6.61	13.14	0.479	1.09	183	5.3	9.78	" "	" "	
1522	6.61	13.20	0.479	1.03	186	4.6	9.79	" "	" "	
1527	6.62	13.18	0.478	0.99	188	4.3	9.79	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

Sample 15:32

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 8.66 btoc
Total Well Depth (ft): 64.65 btoc
Screen Interval (ft): 65-55 bgs
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): 60 btoc.
Desired Purge Rate (ml/min): 100-200
Desired Compressor Pressure (psi): 45-55
Purge Volume (gal): 1.5 gallons

Date: 4/25/18
Well No: MW-5RR
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: Light Rain, Breezy, 53

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
858	6.96	12.02	0.460	0.00	-21	82.6	9.64	225	Clear	
843	7.02	11.98	0.443	" "	-53	11.3	9.64	150	Clear	
848	7.05	11.89	0.444	" "	-62	5.75	" "	" "	"	
853	7.06	11.88	0.443	" "	-64	4.97	" "	" "	" "	
858	7.07	11.89	0.443	" "	-66	5.32	" "	" "	" "	
903	7.06	11.88	0.442	" "	-69	6.53	" "	" "	" "	
908	7.06	11.89	0.441	" "	-70	11.20	" "	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes: Sample 9:13

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 4.12 toc
Total Well Depth (ft): 44.70 ftoc
Screen Interval (ft): 45-35 bgs
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): 39~~ft~~/40ft
Desired Purge Rate (ml/min): 100mL
Desired Compressor Pressure (psi): 20
Purge Volume (gal): 1.25 Gallons

Date: 4/24
Well No: MW-7BR
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: 63°F, windy, mostly sunny

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1306	7.00	16.72	0.367	3.74	66	63.8	4.38	100	Clear	
1311	6.89	16.71	0.375	1.12	70	29.1	4.45	100	" "	
1316	6.88	16.78	0.360	0.70	91	15.3	4.52	100		
1321	6.88	16.72	0.348	0.49	109	7.99	4.57	100		
1326	6.88	16.71	0.343	0.37	122	6.38	4.53	80		
1331	6.89	16.64	0.343	0.35	131	5.85	4.55	80	" "	
1336	6.87	16.54	0.338	0.33	141	3.86	4.54	80	" "	
1341	6.85	16.63	0.330	~~0.28~~ 0.38	146	3.17	4.55	80	" "	
1346	6.82	16.65	0.328	0.32	150	3.88	4.55	80	" "	
1351	6.80	16.71	0.329	0.34	154	3.62	4.55	80	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes: 1356: Sample

~~Gone~~ SAMPLED NVS-2D @ 1350

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 15.79 btoc
Total Well Depth (ft): 105.62 btoc
Screen Interval (ft): 89 - 105 bgs
PID Headspace Reading (ppm): 0.0ppm

Site Location: EDISON NJ
Pump Intake Depth (ft): 95'
Desired Purge Rate (ml/min): 100ML/MIN.
Desired Compressor Pressure (psi): 80
Purge Volume (gal): 1.25Gal.

Date: 4/26/18
Well No: NVS-2D
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: 62°F, SUNNY, WINDY.

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1303	8.33	15.37	0.179	10.42	37	5.14	15.81	80ML/MIN	CLEAR	
1308	8.31	15.08	0.185	5.40	32	6.70	15.82	80ML/MIN	CLEAR	
1313	8.17	15.11	0.189	1.70	-8	2.91	15.83	80ML/MIN	CLEAR	
1318	8.13	15.18	0.190	0.37	-35	2.18	15.84	80ML/MIN	CLEAR	
1323	8.11	15.12	0.190	0.00	-51	2.35	15.85	80ML/MIN	CLEAR	
1328	8.11	15.12	0.190	0.00	-53	2.15	15.86	80ML/MIN	CLEAR	
1333	8.12	15.10	0.190	0.00	-58	2.09	15.87	80ML/MIN	CLEAR	
1338	8.12	15.00	0.190	0.00	-60	1.98	15.88	80ML/MIN	CLEAR	
1343	8.12	15.02	0.190	0.00	-62	2.01	15.89	80ML/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

1415 SAMPLE
NUS-3D-04232018

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 7.94 'btoc
Total Well Depth (ft): 40.00 'btoc
Screen Interval (ft): 25-43 'bgs
PID Headspace Reading (ppm): 0.0ppm

Site Location: EDISON, NJ
Pump Intake Depth (ft): 35 'btoc
Desired Purge Rate (ml/min): 20
Desired Compressor Pressure (psi): 20'
Purge Volume (gal): 2.5 GAL.

Date: 4/23/2018
Well No: NUS-3D
Well Permit No:
Purge/Sampling Method: BLADDER.
Weather conditions: SUNNY 65°, BREEZY

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1310	6.81	13.92	0.138	6.54	193	238	8.00	150ML/MIN	YELLOW	
1315	6.61	13.95	0.137	5.31	210	264	8.10	150ML/MIN	YELLOW	
1320	6.58	13.72	0.137	5.04	~~228~~ 221	247	8.15	150ML/MIN	YELLOW	
1325	6.51	13.68	0.136	4.72	228	121	8.18	150ML/MIN	YELLOW	
1330	6.51	13.63	0.136	4.74	229	97.5	8.20	150ML/MIN	YELLOW	
1335	6.52	13.74	0.136	4.71	232	80.2	8.22	150ML/MIN	CLEAR	
1340	6.51	13.80	0.136	4.69	235	67.5	8.25	150ML/MIN	CLEAR	
1345	6.53	13.85	0.136	4.64	236	48.0	8.27	150ML/MIN	CLEAR	
1350	6.53	13.85	0.136	4.66	237	40.4	8.30	150ML/MIN	CLEAR	
1355	6.53	13.84	0.136	4.67	239	37.0	8.31	150ML/MIN	CLEAR	
1400	6.53	13.84	0.136	4.67	240	35.1	8.32	150ML/MIN	CLEAR	
1405	6.53	13.83	0.136	4.68	241	33.7	8.33	150ML/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

SAMPLED NUS-3S @ 1130

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 8.66 btoc
Total Well Depth (ft): 16.55' btoc
Screen Interval (ft): 5-15 bgs
PID Headspace Reading (ppm): 0.0

Site Location: EDISON, NJ
Pump Intake Depth (ft): 10'
Desired Purge Rate (ml/min): 100mL/MIN
Desired Compressor Pressure (psi): 10
Purge Volume (gal): ~ 1 GALLON

Date: 4/26/2018
Well No: NUS-3S
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: 56°F, SUNNY, BREEZY

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1043	6.48	14.99	0.19	5.42	7	82.6	8.70	70mL/MIN	CLEAR	
1048	6.37	14.46	0.097	2.78	8	72.5	8.70	70mL/MIN	CLEAR	
1053	6.33	14.03	0.093	0.97	8	73.7	8.70	70mL/MIN	CLEAR	
1058	6.29	13.69	0.094	0.53	8	64.1	8.70	70mL/MIN	CLEAR	
1103	6.28	13.52	0.093	0.24	8	59.3	8.70	70mL/MIN	CLEAR	
1108	6.27	13.18	0.093	0.12	8	56.6	8.70	70mL/MIN	CLEAR	
1112	6.27	13.15	0.093	0.38	8	49.3	8.70	70mL/MIN	CLEAR	
1118	6.25	13.02	0.093	0.49	9	52.1	8.70	70mL/MIN	CLEAR	
1122	6.25	12.87	0.093	0.55	9	51.0	8.70	70mL/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 18.31 btoc
Total Well Depth (ft): 48 btoc
Screen Interval (ft): 38-48 bgs
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): 43
Desired Purge Rate (ml/min): 100-300
Desired Compressor Pressure (psi): 20-40
Purge Volume (gal): 5.5 Gallons

Date: 4/26/18
Well No: Q1
Well Permit No:
Purge/Sampling Method: Bladder
Weather conditions: Sunny, 56 °F Breezy

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
914	6.62	14.08	0.273	0.59	218	14.0	1846	400	Clear	
919	6.63	14.05	0.253	0.00	193	13.8	1843	200	" "	
924	6.63	13.99	0.251	" "	184	13.6	1843	" "	" "	
929	6.64	13.85	0.257	" "	166	13.9	" "	" "	" "	
934	6.65	13.85	0.259	" "	153	13.8	18.44	" "	" "	
939	6.66	13.82	0.265	" "	143	13.4	" "	" "	" "	
944	6.65	13.72	0.277	" "	127	13.4	" "	" "	" "	
949	6.65	13.71	0.285	" "	133	13.5	" "	" "	" "	
954	6.64	13.73	0.295	" "	131	14.1	" "	" "	" "	
959	6.63	13.67	0.300	" "	127	13.2	" "	" "	" "	
1004	6.62	13.68	0.312	" "	126	12.3	" "	" "	" "	
1009	6.59	13.66	0.329	" "	126	10.9	" "	" "	" "	
1014	6.59	13.66	0.338	" "	124	11.2	" "	" "	" "	
1019	6.57	13.68	0.348	" "	123	11.5	" "	" "	" "	
1024	6.57	13.71	0.356	" "	120	10.8	" "	" "	" "	
1029	6.55	13.74	0.377	" "	118	11.3	" "	" "	" "	
1034	6.55	13.68	0.379	" "	116	10.5	" "	" "	" "	
1039	6.53	13.67	0.398	" "	114	9.74	" "	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

LOW FLOW FIELD MEASUREMENT LOG

Project:
Initial Water Level (ft): 18.31 btoc
Total Well Depth (ft): 48 btoc
Screen Interval (ft): 38-48 bgs
PID Headspace Reading (ppm): 0.0

Site Location: Edison NJ
Pump Intake Depth (ft): 43
Desired Purge Rate (ml/min): 100-300
Desired Compressor Pressure (psi): 20-40
Purge Volume (gal): 6.5 Gallons

Date: 4/26/18
Well No: Q1D
Well Permit No:
Purge/Sampling Method: BLADDER
Weather conditions: SUNNY, 56°F BREEZY

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
1044	6.52	13.69	0.412	0.00	110	10.5	18.44	200	Clear	
1049	6.50	13.68	0.428	" "	108	11.3	" "	" "	" "	
1054	6.50	13.71	0.432	" "	106	10.4	" "	" "	" "	
1059	6.49	13.71	0.440	" "	103	11.3	" "	" "	" "	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:
1104 - Sample
1500 - Dup2 - 04262018
MS/MSD

SAMPLED UU-0426 2018
@ 0930

LOW FLOW FIELD MEASUREMENT LOG

Project: CIC
Initial Water Level (ft): 6.25
Total Well Depth (ft): 18.90
Screen Interval (ft): 8-18.
PID Headspace Reading (ppm): 0.0ppm.

Site Location: EDISON, NJ
Pump Intake Depth (ft): 15
Desired Purge Rate (ml/min): 100ML/MIN
Desired Compressor Pressure (psi): 20
Purge Volume (gal): 2.75 GAL.

Date: 4/26/2018
Well No: UU
Well Permit No:
Purge/Sampling Method: BLADDER.
Weather conditions: 54° SUNNY, WINDY

Time	pH (SU)	Temp (deg C)	Cond (mS)	Dissolved O2 (ppm)	ORP (mV)	Turbidity (NTUs)	DTW (feet)	Purge Rate (ml/min)	Water Color	Notes
0840	6.50	11.19	0.410	9.82	177	19.1	6.35	200ML/MIN	LT. TAN	
0845	6.52	10.18	0.415	8.78	162	10.0	6.37	200ML/MIN	CLEAR	
0850	6.49	9.95	0.415	7.21	158	7.2	6.38	200ML/MIN	CLEAR	
0855	6.49	9.86	0.416	6.53	155	6.8	6.39	200ML/MIN	CLEAR	
0900	6.47	9.82	0.417	5.01	153	3.09	6.38	200ML/MIN	CLEAR	
0905	6.47	9.84	0.419	3.87	152	5.10	6.38	200ML/MIN	CLEAR	
0910	6.47	9.87	0.420	1.23	151	3.21	6.39	200ML/MIN	CLEAR	
0915	6.47	9.87	0.421	0.94	150	4.76	6.39	200ML/MIN	CLEAR	
0920	6.47	9.86	0.422	0.89	150	4.12	6.39	200ML/MIN	CLEAR	
0925	6.47	9.85	0.422	0.91	149	5.23	6.39	200ML/MIN	CLEAR	
Stabilization	+/- 0.1	+/- 3%	+/- 3%	+/- 10%	+/- 10	+/- 10%	0.3 ft			

*Stabilization is achieved after all parameters have stabilized for three consecutive readings.

Turbidity readings should be below 50 NTUs OR if all other field parameters are stable and turbidity cannot be lowered below 50 NTUs, where turbidity readings are within +/- 10% over three, 5-minute readings. Note that approval must be obtained from the Project Manager prior to sampling in turbid conditions.

Notes:

APPENDIX D

Chain-of-Custody Records

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 812774700510

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042418-162541-0005

Cooler #: 1
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	TB-04232018	TB-042232018	BE908	CLP Trace Volatiles	Blank	4/23/2018	10:00	2	40 ml VOA	HCl	
	MW-1BRD-04232018	MW-1BRD	BE909	CLP Trace Volatiles	Ground Water	4/23/2018	12:44	2	40 ml VOA	HCl	
	MW-1BRD-04232018	MW-1BRD	BE909	CLP Trace Volatiles SIM	Ground Water	4/23/2018	12:44	1	40 ml VOA	HCl	
	MW-2I-04232018	MW-2I	BE910	CLP Trace Volatiles	Ground Water	4/23/2018	12:20	2	40 ml VOA	HCl	
	MW-2I-04232018	MW-2I	BE910	CLP Trace Volatiles SIM	Ground Water	4/23/2018	12:20	1	40 ml VOA	HCl	
	MW-2S-04232018	MW-2S	BE911	CLP Trace Volatiles	Ground Water	4/23/2018	10:18	2	40 ml VOA	HCl	
	MW-2S-04232018	MW-2S	BE911	CLP Trace Volatiles SIM	Ground Water	4/23/2018	10:18	1	40 ml VOA	HCl	
	MW-4S-40232018	MW-4S	BE912	CLP Trace Volatiles	Ground Water	4/23/2018	15:32	2	40 ml VOA	HCl	
	MW-4S-40232018	MW-4S	BE912	CLP Trace Volatiles SIM	Ground Water	4/23/2018	15:32	1	40 ml VOA	HCl	
	NUS-3D-04232018	NUS-3D	BE913	CLP Trace Volatiles	Ground Water	4/23/2018	14:15	2	40 ml VOA	HCl	
	NUS-3D-04232018	NUS-3D	BE913	CLP Trace Volatiles SIM	Ground Water	4/23/2018	14:15	1	40 ml VOA	HCl	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA
DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 812774700510

CHAIN OF CUSTODY RECORD
Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042418-162541-0005
Cooler #: 1
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	MW-3BR-04242018	MW-3BR	BE914	CLP Trace Volatiles	Ground Water	4/24/2018	09:50	2	40 ml VOA	HCI	
	MW-3BR-04242018	MW-3BR	BE914	CLP Trace Volatiles SIM	Ground Water	4/24/2018	09:50	1	40 ml VOA	HCI	
	MW-3S-04242018	MW-3S	BE915	CLP Trace Volatiles	Ground Water	4/24/2018	11:35	6	40 ml VOA	HCI	Y
	MW-3S-04242018	MW-3S	BE915	CLP Trace Volatiles SIM	Ground Water	4/24/2018	11:35	3	40 ml VOA	HCI	Y
	DUP1-04242018	DUP1	BE916	CLP Trace Volatiles	Ground Water	4/24/2018	12:01	2	40 ml VOA	HCI	
	DUP1-04242018	DUP1	BE916	CLP Trace Volatiles SIM	Ground Water	4/24/2018	12:01	1	40 ml VOA	HCI	
	FU-04242018	FU	BE917	CLP Trace Volatiles	Ground Water	4/24/2018	11:38	2	40 ml VOA	HCI	
	FU-04242018	FU	BE917	CLP Trace Volatiles SIM	Ground Water	4/24/2018	11:38	1	40 ml VOA	HCI	
	FB-04242018	Field Blank	BE918	CLP Trace Volatiles	Blank	4/24/2018	10:15	2	40 ml VOA	HCI	
	FB-04242018	Field Blank	BE918	CLP Trace Volatiles SIM	Blank	4/24/2018	10:15	1	40 ml VOA	HCI	
	BF-5-04242018	BF-5	BE919	CLP Trace Volatiles	Ground Water	4/24/2018	08:52	2	40 ml VOA	HCI	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 812774700510

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042418-162541-0005

Cooler #: 1
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	BF-5-04242018	BF-5	BE919	CLP Trace Volatiles SIM	Ground Water	4/24/2018	08:52	1	40 ml VOA	HCI	
	MW-7BR-04242018	MW-7BR	BE920	CLP Trace Volatiles	Ground Water	4/24/2018	13:56	2	40 ml VOA	HCI	
	MW-7BR-04242018	MW-7BR	BE920	CLP Trace Volatiles SIM	Ground Water	4/24/2018	13:56	1	40 ml VOA	HCI	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 812774700587

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042418-164214-0006

Cooler #: 2
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	MW-2I-04232018	MW-2I	BE910	CLP Pesticides	Ground Water	4/23/2018	12:20	2	1 liter amber	Wet ice	
	MW-2S-04232018	MW-2S	BE911	CLP Pesticides	Ground Water	4/23/2018	10:18	2	1 liter amber	Wet ice	
	MW-4S-40232018	MW-4S	BE912	CLP Pesticides	Ground Water	4/23/2018	15:32	2	1 liter amber	Wet ice	
	NUS-3D-04232018	NUS-3D	BE913	CLP Pesticides	Ground Water	4/23/2018	14:15	2	1 liter amber	Wet ice	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 812774700554

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 6572759400

No: 2-042418-164732-0007

Cooler #: 3
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	MW-1BRD-04232018	MW-1BRD	BE909	CLP Pesticides	Ground Water	4/23/2018	12:44	2	1 liter amber	Wet ice	
	MW-3S-04242018	MW-3S	BE915	CLP Pesticides	Ground Water	4/24/2018	11:35	6	1 liter amber	None	Y

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 812774700576

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 6572759400

No: 2-042418-165233-0008

Cooler #: 4
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	DUP1-04242018	DUP1	BE916	CLP Pesticides	Ground Water	4/24/2018	12:01	2	1 liter amber	None	
	FU-04242018	FU	BE917	CLP Pesticides	Ground Water	4/24/2018	11:38	2	1 liter amber	None	
	BF-5-04242018	BF-5	BE919	CLP Pesticides	Ground Water	4/24/2018	08:52	2	1 liter amber	None	
	MW-7BR-04242018	MW-7BR	BE920	CLP Pesticides	Ground Water	4/24/2018	13:56	2	1 liter amber	None	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 812774700565

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 6572759400

No: 2-042418-165625-0009

Cooler #: 5
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	MW-3BR-04242018	MW-3BR	BE914	CLP Pesticides	Ground Water	4/24/2018	09:50	2	1 liter amber	None	
	FB-04242018	Field Blank	BE918	CLP Pesticides	Blank	4/24/2018	10:15	2	1 liter amber	None	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 811757306699

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042418-170107-0010

Cooler #: 1
Lab: ALS Laboratory Group - Salt Lake City
Lab Phone: 801-266-7700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	MW-1BRD-04232018	MW-1BRD	MBE909	CLP ICP-MS Metals	Ground Water	4/23/2018	12:44	1	250ml - Plastic	HNO3 pH<2	
	MW-2I-04232018	MW-2I	MBE910	CLP ICP-MS Metals	Ground Water	4/23/2018	12:20	1	250ml - Plastic	HNO3 pH<2	
	MW-2S-04232018	MW-2S	MBE911	CLP ICP-MS Metals	Ground Water	4/23/2018	10:18	1	250ml - Plastic	HNO3 pH<2	
	MW-4S-40232018	MW-4S	MBE912	CLP ICP-MS Metals	Ground Water	4/23/2018	15:32	1	250ml - Plastic	HNO3 pH<2	
	NUS-3D-04232018	NUS-3D	MBE913	CLP ICP-MS Metals	Ground Water	4/23/2018	14:15	1	250ml - Plastic	HNO3 pH<2	
	MW-3BR-04242018	MW-3BR	MBE914	CLP ICP-MS Metals	Ground Water	4/24/2018	09:50	1	250ml - Plastic	HNO3 pH<2	
	MW-3S-04242018	MW-3S	MBE915	CLP ICP-MS Metals	Ground Water	4/24/2018	11:35	3	250ml - Plastic	HNO3 pH<2	Y
	DUP1-04242018	DUP1	MBE916	CLP ICP-MS Metals	Ground Water	4/24/2018	12:01	1	250ml - Plastic	HNO3 pH<2	
	FU-04242018	FU	MBE917	CLP ICP-MS Metals	Ground Water	4/24/2018	11:38	1	250ml - Plastic	HNO3 pH<2	
	FB-04242018	Field Blank	MBE918	CLP ICP-MS Metals	Blank	4/24/2018	10:15	1	250ml - Plastic	HNO3 pH<2	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/24/2018
CarrierName: FedEx
AirbillNo: 811757306699

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042418-170107-0010

Cooler #: 1
Lab: ALS Laboratory Group - Salt Lake City
Lab Phone: 801-266-7700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	BF-5-04242018	BF-5	MBE919	CLP ICP-MS Metals	Ground Water	4/24/2018	08:52	1	250ml - Plastic	HNO3 pH<2	
	MW-7BR-04242018	MW-7BR	MBE920	CLP ICP-MS Metals	Ground Water	4/24/2018	13:56	1	250ml - Plastic	HNO3 pH<2	

Special Instructions:

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA
DateShipped: 4/25/2018
CarrierName: FedEx
AirbillNo: 804117133622

CHAIN OF CUSTODY RECORD
Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042518-175616-0011
Cooler #: 1
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	TB-04252018	Field Blank	BE921	CLP Trace Volatiles	Blank	4/25/2018	09:00	2	4 oz. sept	HCI	
	GU-04252018	GU	BE922	CLP Trace Volatiles	Ground Water	4/25/2018	14:45	2	40 ml VOA	HCI	
	GU-04252018	GU	BE922	CLP Trace Volatiles SIM	Ground Water	4/25/2018	14:45	1	40 ml VOA	HCI	
	GU-04252018	GU	BE922	CLP Pesticides	Ground Water	4/25/2018	14:45	2	1 liter amber	None	
	MW-5BR-04252018	MW-5BR	BE923	CLP Trace Volatiles	Ground Water	4/25/2018	09:13	2	40 ml VOA	HCI	
	MW-5BR-04252018	MW-5BR	BE923	CLP Trace Volatiles SIM	Ground Water	4/25/2018	09:13	1	40 ml VOA	HCI	
	BF-2D-04252018	BF-2D	BE924	CLP Trace Volatiles	Ground Water	4/25/2018	09:45	2	40 ml VOA	HCI	
	BF-2D-04252018	BF-2D	BE924	CLP Trace Volatiles SIM	Ground Water	4/25/2018	09:45	1	40 ml VOA	HCI	
	FB-05252018	Field Blank	BE925	CLP Trace Volatiles	Blank	4/25/2018	10:15	2	40 ml VOA	HCI	
	FB-05252018	Field Blank	BE925	CLP Trace Volatiles SIM	Blank	4/25/2018	10:15	1	40 ml VOA	HCI	
	FB-05252018	Field Blank	BE925	CLP Pesticides	Blank	4/25/2018	10:15	2	1 liter amber	None	
	BF-2-05252018	BF-2	BE926	CLP Trace Volatiles	Ground Water	4/25/2018	10:47	2	40 ml VOA	HCI	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA
DateShipped: 4/25/2018
CarrierName: FedEx
AirbillNo: 804117133622

CHAIN OF CUSTODY RECORD
Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042518-175616-0011
Cooler #: 1
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	BF-2-05252018	BF-2	BE926	CLP Pesticides	Ground Water	4/25/2018	10:47	2	1 liter amber	None	
	BF-2-05252018	BF-2	BE926	CLP Trace Volatiles SIM	Ground Water	4/25/2018	10:47	1	40 ml VOA	HCL	
	BF-4-042520108	BF-4	BE927	CLP Trace Volatiles	Ground Water	4/25/2018	12:30	4	40 ml VOA	HCI	Y
	BF-4-042520108	BF-4	BE927	CLP Trace Volatiles SIM	Ground Water	4/25/2018	12:30	2	40 ml VOA	HCI	Y
	BF-2BR	BF-2BR	BE928	CLP Trace Volatiles	Ground Water	4/25/2018	14:08	2	40 ml VOA	HCI	
	BF-2BR	BF-2BR	BE928	CLP Trace Volatiles	Ground Water	4/25/2018	14:08	1	40 ml VOA	HCI	
	BF-2BR	BF-2BR	BE928	CLP Pesticides	Ground Water	4/25/2018	14:08	2	1 liter amber	None	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/25/2018
CarrierName: FedEx
AirbillNo: 804117133673

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042518-181029-0012

Cooler #: 2
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	MW-5BR-04252018	MW-5BR	BE923	CLP Pesticides	Ground Water	4/25/2018	09:13	2	1 liter amber	None	
	BF-2D-04252018	BF-2D	BE924	CLP Pesticides	Ground Water	4/25/2018	09:45	2	1 liter amber	None	
	BF-4-042520108	BF-4	BE927	CLP Pesticides	Ground Water	4/25/2018	12:30	4	1 liter amber	None	Y

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/25/2018
CarrierName: FedEx
AirbillNo: 804117133684

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 675-275-9400

No: 2-042518-181615-0013

Cooler #: 1
Lab: ALS Laboratory Group - Salt Lake City
Lab Phone: 801-266-7700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	GU-04252018	GU	MBE922	CLP ICP-MS Metals	Ground Water	4/25/2018	14:45	1	250ml - Plastic	HNO3 pH<2	
	MW-5BR-04252018	MW-5BR	MBE923	CLP ICP-MS Metals	Ground Water	4/25/2018	09:13	1	250ml - Plastic	HNO3 pH<2	
	BF-2D-04252018	BF-2D	MBE924	CLP ICP-MS Metals	Ground Water	4/25/2018	09:45	1	250ml - Plastic	HNO3 pH<2	
	FB-05252018	Field Blank	MBE925	CLP ICP-MS Metals	Blank	4/25/2018	10:15	1	250ml - Plastic	HNO3 pH<2	
	BF-2-05252018	BF-2	MBE926	CLP ICP-MS Metals	Ground Water	4/25/2018	10:47	1	250ml - Plastic	HNO3 pH<2	
	BF-4-042520108	BF-4	MBE927	CLP ICP-MS Metals	Ground Water	4/25/2018	12:30	2	250ml - Plastic	HNO3 pH<2	Y
	BF-2BR	BF-2BR	MBE928	CLP ICP-MS Metals	Ground Water	4/25/2018	14:08	1	250ml - Plastic	HNO3 pH<2	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/26/2018
CarrierName: FedEx
AirbillNo: 812774278731

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042618-164757-0018

Cooler #: 1
Lab: ALS Laboratory Group - Salt Lake City
Lab Phone: 801-266-7700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	DUP2-04262018	DUP2	MBE929	CLP ICP-MS Metals	Ground Water	4/26/2018	09:00	1	250ml - Plastic	HNO3 pH<2	
	UU-04262018	UU	MBE930	CLP ICP-MS Metals	Ground Water	4/26/2018	09:30	1	250ml - Plastic	HNO3 pH<2	
	QD-04262018	QD	MBE931	CLP ICP-MS Metals	Ground Water	4/26/2018	11:04	1	250ml - Plastic	HNO3 pH<2	
	NUS-3S-04262018	NUS-3S	MBE933	CLP ICP-MS Metals	Ground Water	4/26/2018	11:30	1	250ml - Plastic	HNO3 pH<2	
	NUS-2D-04262018	NUS-2D	MBE934	CLP ICP-MS Metals	Ground Water	4/26/2018	13:50	1	250ml - Plastic	HNO3 pH<2	
	MW-4BR-04262018	MW-4BR	MBE935	CLP ICP-MS Metals	Ground Water	4/26/2018	13:53	1	250ml - Plastic	HNO3 pH<2	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/26/2018
CarrierName: FedEx
AirbillNo: 812774278720

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042618-161412-0016

Cooler #: 1
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	DUP2-04262018	DUP2	BE929	CLP Trace Volatiles	Ground Water	4/26/2018	09:00	2	40 ml VOA	HCl	
	DUP2-04262018	DUP2	BE929	CLP Trace Volatiles SIM	Ground Water	4/26/2018	09:00	1	40 ml VOA	HCl	
	DUP2-04262018	DUP2	BE929	CLP Pesticides	Ground Water	4/26/2018	09:00	2	1 liter amber	None	
	UU-04262018	UU	BE930	CLP Trace Volatiles	Ground Water	4/26/2018	09:30	2	40 ml VOA	HCl	
	UU-04262018	UU	BE930	CLP Trace Volatiles SIM	Ground Water	4/26/2018	09:30	1	40 ml VOA	HCl	
	UU-04262018	UU	BE930	CLP Pesticides	Ground Water	4/26/2018	09:30	2	1 liter amber	None	
	QD-04262018	QD	BE931	CLP Trace Volatiles	Ground Water	4/26/2018	11:04	2	40 ml VOA	HCl	
	QD-04262018	QD	BE931	CLP Trace Volatiles SIM	Ground Water	4/26/2018	11:04	1	40 ml VOA	HCl	
	TB-04262018	Trip Blank	BE932	CLP Trace Volatiles	Blank	4/26/2018	08:30	2	40 ml VOA	HCl	
	NUS-3S-04262018	NUS-3S	BE933	CLP Trace Volatiles	Ground Water	4/26/2018	11:30	2	40 ml VOA	HCl	
	NUS-3S-04262018	NUS-3S	BE933	CLP Trace Volatiles SIM	Ground Water	4/26/2018	11:30	1	40 ml VOA	HCl	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA
DateShipped: 4/26/2018
CarrierName: FedEx
AirbillNo: 812774278720

CHAIN OF CUSTODY RECORD
Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042618-161412-0016
Cooler #: 1
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	NUS-3S-04262018	NUS-3S	BE933	CLP Pesticides	Ground Water	4/26/2018	11:30	2	1 liter amber	None	
	NUS-2D-04262018	NUS-2D	BE934	CLP Trace Volatiles	Ground Water	4/26/2018	13:50	2	40 ml VOA	HCl	
	NUS-2D-04262018	NUS-2D	BE934	CLP Trace Volatiles SIM	Ground Water	4/26/2018	13:50	1	40 ml VOA	HCl	
	NUS-2D-04262018	NUS-2D	BE934	CLP Pesticides	Ground Water	4/26/2018	13:50	2	1 liter amber	None	
	MW-4BR-04262018	MW-4BR	BE935	CLP Trace Volatiles	Ground Water	4/26/2018	13:53	2	40 ml VOA	HCl	
	MW-4BR-04262018	MW-4BR	BE935	CLP Trace Volatiles SIM	Ground Water	4/26/2018	13:53	1	40 ml VOA	HCl	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA

DateShipped: 4/26/2018
CarrierName: FedEx
AirbillNo: 812774278742

CHAIN OF CUSTODY RECORD

Chemical Insecticide Corp./NJ
Contact Name: Nick Weinberger
Contact Phone: 657-275-9400

No: 2-042618-163440-0017

Cooler #: 2
Lab: Shealy Environmental Services
Lab Phone: 803-791-9700

Lab #	Sample #	Location	CLP Sample #	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	Lab QC
	QD-04262018	QD	BE931	CLP Pesticides	Ground Water	4/26/2018	11:04	2	1 liter amber	None	
	MW-4BR-04262018	MW-4BR	BE935	CLP Pesticides	Ground Water	4/26/2018	13:53	2	1 liter amber	None	

Special Instructions:	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: ALEX VALLI	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-73288-24361.1
Client Contact: Jennifer Mumper	Phone: 908-581-7553	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 1
Company: Insight Environmental Engineering & Cons				Job #:
Address: 2749 Saturn Street	Due Date Requested:			
City: Brea	TAT Requested (days): 21 DAYS			
State, Zip: CA, 92821				
Phone: 913-909-2411(Tel)	PO #:			
Email: jmumper@ieeci.com	WO #:			
Project Name: CIC Edison LTM March 2018	Project #: 28012347			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	HERBICIDES	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FU-04242018	4/24/18	1138	Gr.	W			2		
BF-2BR-04252016	4/25/18	1408	Gr	W			2		
DUP2-04262018	4/26/18	0900	Gr.	W			2		
QD-04262018	4/26/18	1104	Gr.	W		X	4		

280-109117 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: Alex Valli	Date/Time: 4/26/2018 1737	Company: TETRA TECH	Received by:	Date/Time: 4/26/18 1737	Company: TA-ED1
Relinquished by:	Date/Time: 4-27-18	Company: TTEC	Received by:	Date/Time: 1804	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/28/18 0900	Company: TA-DEN

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: IR#1 3.6°C

2.3°C=0.0 IR #8 (TA-DEN)

Ver: 08/04/2016

APPENDIX E

Equipment Calibration Logs

INSTRUMENT CALIBRATION FORM

Project Name: CIC
Project Number:
Project Location: Edison NJ

Date	Time	Instrument Type	Model	Serial Number	Field Parameter	Measured Conc.	Final Calibrated Conc.	Accepted (Yes/No)	Initials	Comments
4/23/18	726	Horiba	U-52	21202	PH/Dn/NTU/Dep	2.09/444/0.0/x	3.9/4.52/0.0/4.56	~~Yes~~ NO	GW	Returned equipment to Pine
4/23/18	749	HACH	2100Q	041647	NTU 20/100/800/10	—	19.5/102/815/998	Yes	GW	PH sensor broken
4/23/18	801	MiniRae	2000	3573	VOC PPM	0/100	0/100	Yes	GW	
4/23/18	1104	Horiba	U-52	21437	PH/ms/cm/NTU DO	4.01/4.53 0.0/11.07	3.84/464/10.35/0.0	Yes	GW	
4/24/18	658	HACH	2100Q	024768	NTU	20/100/800/10	19.5/99.3/804 9.95	Yes	GW	
4/24/18	658	HACH	2100Q	041647	NTU	20/100/800/10	20.1/100/799 ~~2.05~~ 9.71	Yes	GW	
4/24/18	702	MiniRAE	2000	3573	VOC	FA / SPAN	0.0/100	Yes	GW	
4/24/18	702	MiniRae	2000	—	VOC	FA/ SPAN	0.0/99.5	Yes	GW	
4/24/18	717	Horiba	U-52	21437	PH/ms/s/NTU/DO	3.85/4.55/0.0/13.24	3.99/4.53 0.2/10.79	Yes	GW	
4/24/18	717	Horiba	U-52	25343	PH/ms/s/NTU/DO	4.02/4.58/0.5 11.13	4.01/4.49 0.0/12.42	Yes	GW	
4/25/18	736	HACH	2100Q	024768	NTU	20/100/800 10	20.0/101/807 9.88	Yes	GW	
4/25/18	736	HACH	2100Q	041647	NTU	20/100/800 10	19.9/101/799 10.1	Yes	GW	
4/25/18	748	Horiba	U-52	21437 ~~2123~~	PH/ms/s/NTU DO	3.96/4.59/5.0 13.05	4.09/4.51 0.0/1054	Yes	GW	
4/25/18	748	Horiba	U-52	25343	PH/ms/s/NTU DO	4.04/4.59/0.0 11.81	4.00, 4.5, 0.0 10.39	Yes	GW	
4/25/18	751	MiniRAE	2000	3573	VOC	—	0.0/99.8	Yes	GW	
4/25/18	751	MiniRAE	2000	—	VOC	—	0.0/100	Yes	GW	
4/26/18	711	Hach	2100Q	041647	NTU	20/100/800 TO	20.2/99.2/782 9.55	Yes	GW	
4/26/18	711	MiniRae	2000	—	VOC	0.0-100	0.0/99.6	Yes	GW	

INSTRUMENT CALIBRATION FORM

Project Name: CIC
Project Number:
Project Location: Edison NJ

Date	Time	Instrument Type	Model	Serial Number	Field Parameter	Measured Conc.	Final Calibrated Conc.	Accepted (Yes/No)	Initials	Comments
4/26/18	733	Horiba	U-52	21437	PH/ms/cm/Turb/DO	4.04, 4.41/1.2 10.68	4.00/4.48/0.1 11.35	GW	Yes	
4/26/18	733	Horiba	U-52	25943	PH/ms/cm/Turb/DO	4.06/4.24/0.3 9.99	4.00/4.51/0.0 11.04	GW	Yes	

APPENDIX F

Daily Quality Control Logs

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 04/23/2018

Contract No. W912DQ-12-D-3012, DO0002	Title and Location Demolition Management Plan Chemical Insecitcide Corporation	Report No. CIC 005

Contractor **Tetra Tech**		Superintendent	
AM Weather Sunny 41°, Winds ENE @ 5mph	PM Weather Sunny High 63°, Winds E @ 5-10mph	Min Temp. (°F) **41°**	Max Temp (°F) **63°**

Work Location & Description	Employer	No.	Trade	Hours
1. Performed round of synoptic water level reading in overburden and bedrock wells - Matt Pingitor (Insight) **2.** Alex Valli and Greg Wissink completed sampling of wells MW-1BRD, MW-2S, MW-2I, MW-4S and NUS3D; Five (5) samples total from 5 wells. **ISSUES:** No issues at this time.	**TETRA TECH**	**1**	**Geo**	**9**
	TETRA TECH	**2**	**Tech**	**9**
	InSight	**3**	**Tech**	**5**

H&S Level D	**Was a job safety meeting held this date?** (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date: 23
	Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report: 53
	Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No	
	Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction: 76

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Setup Decon area. Conducted H&S briefing. H&S Concerns - Discussed Proper Lifting Techniques.

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
QED MP-50	9	Sample Pro - Bladder pump	9	Solinst WL Meter	5
QED MP-50	9	Sample Pro - Bladder pump	9		

Calibrated 2xMiniRae 2000 PID and 2xHoriba U-52s - SEE CALIBRATION LOGS.

Fedex samples - for overnight delivery.

Subcontractor Date SDV QC Supervisor Date

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 04/24/2018

Contract No.	Title and Location	Report No.
W912DQ-12-D-3012, DO0002	Demolition Management Plan Chemical Insecitcide Corporation	CIC 006

Contractor	Superintendent
Tetra Tech	

AM Weather	PM Weather	Min Temp. (°F)	Max Temp (°F)
Sunny 42°, Winds ENE @ 7mph	Cloudy High 65°, Winds ENE @ 10-15mph	**42°**	**65°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli and Greg Wissink completed sampling of wells MW-3BR, MW-3S, BF-5, FU and MW-7BR; five (5) samples total from 5 wells. **2.** A Duplicate Sample (DUP1-04242018) was collected at BF-5 and an MS/MSD was collected at Well MW-3S. **3.** A field blank sample (FB-04242018 was collected) **4.** Michele (USACOE) was onsite to view sampling procedures. **ISSUES:** No issues at this time.	**TETRA TECH**	**1**	**Geo**	**11**
	TETRA TECH	**2**	**Tech**	**11**

H&S Level D	**Was a job safety meeting held this date?** (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date: 22
	Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report: 75
	Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No	
	Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction: 97

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Setup Decon area. Conducted H&S briefing. H&S Concerns - Discussed Proper Slips and Trips.

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
QED MP-50	9	Sample Pro - Bladder pump	9	Solinst WL Meter	5
QED MP-50	9	Sample Pro - Bladder pump	9		

Calibrated 2xMiniRae 2000 PID and 2xHoriba U-52s - SEE CALIBRATION LOGS.

Lynn Arabia and Robert Cantagallo onsite briefly to review GW Sampling Procedure. Fedex samples - for overnight delivery.

Subcontractor Date SDV QC Supervisor Date

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 04/25/2018

Contract No.	Title and Location	Report No.
W912DQ-12-D-3012, DO0002	Demolition Management Plan Chemical Insecitcide Corporation	CIC 007

Contractor	Superintendent
Tetra Tech	

AM Weather	PM Weather	Min Temp. (°F)	Max Temp (°F)
Rain 38°, Winds E @ 5mph	Rain heavy at Times, High 57°, Winds ENE @ 10-15mph	**38°**	**57°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli and Greg Wissink completed sampling of wells GU, BF-4, BF-2BR, MW-5BR, BF-2 and BF-2D; six (6) samples total from 6 wells.	**TETRA TECH**	**1**	**Geo**	**12**
2. An MS/MSD was collected at Well BF-4. **3.** A field blank sample (FB-04252018 was collected)	**TETRA TECH**	**2**	**Tech**	**12**
ISSUES: No issues at this time.				

H&S Level D	**Was a job safety meeting held this date?** (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date: 24
	Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report: 97
	Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No	
	Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction: 121

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Setup Decon area. Conducted H&S briefing. H&S Concerns - Discussed Working in the Rain and Slippery Surfaces.

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
QED MP-50	9	Sample Pro - Bladder pump	9		
QED MP-50	9	Sample Pro - Bladder pump	9		

Calibrated 2xMiniRae 2000 PID and 2xHoriba U-52s - SEE CALIBRATION LOGS.

Fedex samples - for overnight delivery.

Subcontractor Date SDV QC Supervisor Date

SDV
ENGINEERING & CONSTRUCTION, JV

CONTRACTOR DAILY QUALITY CONTROL REPORT

(Attach additional sheets as necessary)

Date 04/26/2018

Contract No.	Title and Location	Report No.
W912DQ-12-D-3012, DO0002	Demolition Management Plan Chemical Insecitcide Corporation	CIC 008

Contractor	Superintendent
Tetra Tech	

AM Weather	PM Weather	Min Temp. (°F)	Max Temp (°F)
Sunny 45°, Winds W @ 8mph	Sunny, High 67°, Winds WNW @ 10-15mph	**45°**	**71°**

Work Location & Description	Employer	No.	Trade	Hours
1. Alex Valli and Greg Wissink completed sampling of wells UU, QD, NUS-3S, NUS-2D and MW-4BR; five (5) samples total from 6 wells. **2.** An Duplicate Sample DUP2-04262018 was collected at Well QD **ISSUES:** No issues at this time.	**TETRA TECH**	**1**	**Geo**	**12**
	TETRA TECH	**2**	**Tech**	**12**

H&S Level D	**Was a job safety meeting held this date?** (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date: 24
	Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report: 121
	Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No	
	Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction: 145

List Safety Actions Taken Today/Safety Inspections Conducted

No safety issues today - Setup Decon area. Conducted H&S briefing. H&S Concerns - Discussed Ticks and proper Sun Screen

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

EQUIP	Hrs	Equipment	Hrs	Equipment	Hrs
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
MiniRae 2000	9	Horiba U-52	9	Solinst WL Meter	9
QED MP-50	9	Sample Pro - Bladder pump	9		
QED MP-50	9	Sample Pro - Bladder pump	9		

Calibrated 2xMiniRae 2000 PID and 2xHoriba U-52s - SEE CALIBRATION LOGS.

Fedex samples - for overnight delivery.

Subcontractor Date SDV QC Supervisor Date

APPENDIX G

Laboratory Analytical and QA/QC Checklists

Laboratory Reports

ANALYTICAL REPORT

Job Number: 280-109117-1

Job Description: CIC Edison LTM March 2018

For:
Insight Environmental Engineering & Cons
9314 Wenoga Road
Leawood, KS 66206

Attention: Hillary Weber

Approved for release.
Stephanie K Rothmeyer
Project Manager I
6/6/2018 10:30 AM

Stephanie K Rothmeyer, Project Manager I
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0182
stephanie.rothmeyer@testamericainc.com
06/06/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
D	The reported value is from a dilution.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Insight Environmental Engineering & Cons

Project: CIC Edison LTM March 2018

Report Number: 280-109117-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 4/28/2018 at 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3º C.

There were no custody seals present on the cooler at the time of sample receipt at TA Denver. It can be noted that the package tape was intact at the time of sample receipt. The client was notified on 4/30/18.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): BF-2BR-04252018 (280-109117-2). The container labels list Sample ID BF-2BR-04252018, while the COC lists BF-2BR-04252016. The client was notified on 4/30/18 and the laboratory was instructed to log per the container labels.

Per client request on 4/30/18, the sample ID on sample -2 was updated.

HERBICIDES (GC)

Samples FU-04242018 (280-109117-1), BF-2BR-04252018 (280-109117-2), DUP2-04262018 (280-109117-3) and QD-04262018 (280-109117-4) were analyzed for Herbicides (GC) in accordance with 8151A. The samples were prepared on 05/01/2018 and analyzed on 05/22/2018.

Several analytes failed the recovery criteria low for the MS of sample QD-04262018 (280-109117-4) in batch 280-415679. Dinoseb and Silvex (2,4,5-TP) failed the recovery criteria high. For the MSD of sample QD-04262018 (280-109117-4) in batch 280-415679, Several analytes failed the recovery criteria low. Dinoseb and Silvex (2,4,5-TP) failed the recovery criteria high. Also, Dichlorprop exceeded the RPD limit. Refer to the QC report for details.

Samples DUP2-04262018 (280-109117-3)[10X] and QD-04262018 (280-109117-4)[10X] required dilution prior to analysis due to the nature of the sample matrix. The reporting limits have been adjusted accordingly.

The following samples have chromatographic interferences that could adversely impact the identification and quantitation of target analytes: DUP2-04262018 (280-109117-3), QD-04262018 (280-109117-4). These interferences could cause false positive and/or false negative results.

The continuing calibration verification (CCV) associated with batch 280-414085 was out of control for several compounds on the back column: Dicamba, Dinoseb, MCPA, MCPP. The front column was in control. The samples were ND for all impacted compounds on the front, in control, column; therefore, the data is reported.

The continuing calibration verification (CCV) associated with batch 280-415679 demonstrated a drift on the confirmation column for Dalapon and Dinoseb. These analytes were reported from the primary column, which was in control. The samples were either ND or had detections in which the confirmation column data confirmed the detections within the method defined 40% difference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

Client Sample ID: FU-04242018 — Lab Sample ID: 280-109117-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
2,4-DB	0.90	J J1	3.9	0.35	ug/L	1		8151A DOD	Total/NA
MCPP	140	J	390	32	ug/L	1		8151A DOD	Total/NA

Client Sample ID: BF-2BR-04252018 — Lab Sample ID: 280-109117-2

No Detections.

Client Sample ID: DUP2-04262018 — Lab Sample ID: 280-109117-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Dinoseb	7.7	J D	9.5	4.3	ug/L	10		8151A DOD	Total/NA

Client Sample ID: QD-04262018 — Lab Sample ID: 280-109117-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: FU-04242018

Lab Sample ID: 280-109117-1

Date Collected: 04/24/18 11:38
Matrix: Water
Date Received: 04/28/18 09:00

Method: 8151A DOD - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.58	U	3.9	0.20	ug/L		05/01/18 11:30	05/22/18 00:46	1
Dalapon	1.8	U	1.9	0.88	ug/L		05/01/18 11:30	05/22/18 00:46	1
2,4-DB	**0.90**	**J J1**	3.9	0.35	ug/L		05/01/18 11:30	05/22/18 00:46	1
Dicamba	0.58	U	1.9	0.15	ug/L		05/01/18 11:30	05/22/18 00:46	1
Dichlorprop	1.8	U	3.9	0.63	ug/L		05/01/18 11:30	05/22/18 00:46	1
Dinoseb	0.89	U	0.97	0.44	ug/L		05/01/18 11:30	05/22/18 00:46	1
MCPA	58	U	390	17	ug/L		05/01/18 11:30	05/22/18 00:46	1
MCPP	**140**	**J**	390	32	ug/L		05/01/18 11:30	05/22/18 00:46	1
2,4,5-T	0.58	U	0.97	0.18	ug/L		05/01/18 11:30	05/22/18 00:46	1
Silvex (2,4,5-TP)	0.58	U	0.97	0.17	ug/L		05/01/18 11:30	05/22/18 00:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*63*		*32 - 138*	*05/01/18 11:30*	*05/22/18 00:46*	*1*

Client Sample ID: BF-2BR-04252018

Lab Sample ID: 280-109117-2

Date Collected: 04/25/18 14:08
Matrix: Water
Date Received: 04/28/18 09:00

Method: 8151A DOD - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.60	U	4.0	0.21	ug/L		05/01/18 11:30	05/22/18 01:03	1
Dalapon	1.8	U	2.0	0.91	ug/L		05/01/18 11:30	05/22/18 01:03	1
2,4-DB	0.92	U	4.0	0.36	ug/L		05/01/18 11:30	05/22/18 01:03	1
Dicamba	0.60	U	2.0	0.15	ug/L		05/01/18 11:30	05/22/18 01:03	1
Dichlorprop	1.8	U	4.0	0.65	ug/L		05/01/18 11:30	05/22/18 01:03	1
Dinoseb	0.92	U	1.0	0.45	ug/L		05/01/18 11:30	05/22/18 01:03	1
MCPA	60	U	400	17	ug/L		05/01/18 11:30	05/22/18 01:03	1
MCPP	92	U	400	33	ug/L		05/01/18 11:30	05/22/18 01:03	1
2,4,5-T	0.60	U	1.0	0.19	ug/L		05/01/18 11:30	05/22/18 01:03	1
Silvex (2,4,5-TP)	0.60	U	1.0	0.17	ug/L		05/01/18 11:30	05/22/18 01:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*72*		*32 - 138*	*05/01/18 11:30*	*05/22/18 01:03*	*1*

Client Sample ID: DUP2-04262018

Lab Sample ID: 280-109117-3

Date Collected: 04/26/18 09:00
Matrix: Water
Date Received: 04/28/18 09:00

Method: 8151A DOD - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	5.7	U	38	2.0	ug/L		05/01/18 11:30	05/22/18 01:21	10
Dalapon	18	U	19	8.7	ug/L		05/01/18 11:30	05/22/18 01:21	10
2,4-DB	8.8	U	38	3.4	ug/L		05/01/18 11:30	05/22/18 01:21	10
Dicamba	5.7	U	19	1.4	ug/L		05/01/18 11:30	05/22/18 01:21	10
Dichlorprop	18	U	38	6.2	ug/L		05/01/18 11:30	05/22/18 01:21	10
Dinoseb	**7.7**	**J D**	9.5	4.3	ug/L		05/01/18 11:30	05/22/18 01:21	10
MCPA	570	U	3800	160	ug/L		05/01/18 11:30	05/22/18 01:21	10
MCPP	880	U	3800	310	ug/L		05/01/18 11:30	05/22/18 01:21	10
2,4,5-T	5.7	U	9.5	1.8	ug/L		05/01/18 11:30	05/22/18 01:21	10
Silvex (2,4,5-TP)	5.7	U	9.5	1.6	ug/L		05/01/18 11:30	05/22/18 01:21	10

Client Sample ID: DUP2-04262018

Lab Sample ID: 280-109117-3

Date Collected: 04/26/18 09:00

Matrix: Water

Date Received: 04/28/18 09:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*73*	*D*	*32 - 138*	*05/01/18 11:30*	*05/22/18 01:21*	*10*

Client Sample ID: QD-04262018

Lab Sample ID: 280-109117-4

Date Collected: 04/26/18 11:04

Matrix: Water

Date Received: 04/28/18 09:00

Method: 8151A DOD - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	5.8	U J1	39	2.0	ug/L		05/01/18 11:30	05/22/18 01:38	10
Dalapon	18	U	19	8.8	ug/L		05/01/18 11:30	05/22/18 01:38	10
2,4-DB	8.9	U J1	39	3.5	ug/L		05/01/18 11:30	05/22/18 01:38	10
Dicamba	5.8	U J1	19	1.4	ug/L		05/01/18 11:30	05/22/18 01:38	10
Dichlorprop	18	U J1	39	6.3	ug/L		05/01/18 11:30	05/22/18 01:38	10
Dinoseb	8.9	U J1	9.7	4.3	ug/L		05/01/18 11:30	05/22/18 01:38	10
MCPA	580	U J1	3900	160	ug/L		05/01/18 11:30	05/22/18 01:38	10
MCPP	890	U J1	3900	320	ug/L		05/01/18 11:30	05/22/18 01:38	10
2,4,5-T	5.8	U	9.7	1.8	ug/L		05/01/18 11:30	05/22/18 01:38	10
Silvex (2,4,5-TP)	5.8	U J1	9.7	1.6	ug/L		05/01/18 11:30	05/22/18 01:38	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*45*	*D*	*32 - 138*	*05/01/18 11:30*	*05/22/18 01:38*	*10*

Default Detection Limits

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

Method: 8151A DOD - Herbicides (GC)

Prep: 8151A

Analyte	LOQ	DL	Units	Method
2,4,5-T	1.0	0.19	ug/L	8151A DOD
2,4-D	4.0	0.21	ug/L	8151A DOD
2,4-DB	4.0	0.36	ug/L	8151A DOD
Dalapon	2.0	0.91	ug/L	8151A DOD
Dicamba	2.0	0.15	ug/L	8151A DOD
Dichlorprop	4.0	0.65	ug/L	8151A DOD
Dinoseb	1.0	0.45	ug/L	8151A DOD
MCPA	400	17	ug/L	8151A DOD
MCPP	400	33	ug/L	8151A DOD
Silvex (2,4,5-TP)	1.0	0.17	ug/L	8151A DOD

Surrogate Summary

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

Method: 8151A DOD - Herbicides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**DCPAA1 (32-138)**							
280-109117-1	FU-04242018	63							
280-109117-2	BF-2BR-04252018	72							
280-109117-3	DUP2-04262018	73 D							
280-109117-4	QD-04262018	45 D							
280-109117-4 MS	QD-04262018	85 D							
280-109117-4 MSD	QD-04262018	88 D							
LCS 280-413309/2-A	Lab Control Sample	68							
MB 280-413309/1-A	Method Blank	72							

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Method: 8151A DOD - Herbicides (GC)

Lab Sample ID: MB 280-413309/1-A
Matrix: Water
Analysis Batch: 415679

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413309

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.60	U	4.0	0.21	ug/L		05/01/18 11:30	05/22/18 00:11	1
Dalapon	1.8	U	2.0	0.91	ug/L		05/01/18 11:30	05/22/18 00:11	1
2,4-DB	0.92	U	4.0	0.36	ug/L		05/01/18 11:30	05/22/18 00:11	1
Dicamba	0.60	U	2.0	0.15	ug/L		05/01/18 11:30	05/22/18 00:11	1
Dichlorprop	1.8	U	4.0	0.65	ug/L		05/01/18 11:30	05/22/18 00:11	1
Dinoseb	0.92	U	1.0	0.45	ug/L		05/01/18 11:30	05/22/18 00:11	1
MCPA	60	U	400	17	ug/L		05/01/18 11:30	05/22/18 00:11	1
MCPP	92	U	400	33	ug/L		05/01/18 11:30	05/22/18 00:11	1
2,4,5-T	0.60	U	1.0	0.19	ug/L		05/01/18 11:30	05/22/18 00:11	1
Silvex (2,4,5-TP)	0.60	U	1.0	0.17	ug/L		05/01/18 11:30	05/22/18 00:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*72*		*32 - 138*	*05/01/18 11:30*	*05/22/18 00:11*	*1*

Lab Sample ID: LCS 280-413309/2-A
Matrix: Water
Analysis Batch: 415679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413309

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	5.00	3.58	J	ug/L		72	45 - 152
Dalapon	5.00	4.15		ug/L		83	19 - 139
2,4-DB	5.00	2.77	J	ug/L		55	35 - 153
Dicamba	5.00	3.25		ug/L		65	50 - 141
Dichlorprop	5.00	3.26	J	ug/L		65	46 - 159
Dinoseb	5.00	2.31		ug/L		46	25 - 132
MCPA	500	292	J	ug/L		58	35 - 144
MCPP	500	375	J	ug/L		75	33 - 157
2,4,5-T	5.00	3.30		ug/L		66	42 - 147
Silvex (2,4,5-TP)	5.00	3.29		ug/L		66	51 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*68*		*32 - 138*

Lab Sample ID: 280-109117-4 MS
Matrix: Water
Analysis Batch: 415679

Client Sample ID: QD-04262018
Prep Type: Total/NA
Prep Batch: 413309

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	5.8	U J1	4.82	5.8	U J1 D	ug/L		0	45 - 152
Dalapon	18	U	4.82	18	U D	ug/L		NC	19 - 139
2,4-DB	8.9	U J1	4.82	8.9	U J1 D	ug/L		0	35 - 153
Dicamba	5.8	U J1	4.82	1.62	J J1 D	ug/L		34	50 - 141
Dichlorprop	18	U J1	4.82	13.6	J D	ug/L		NC	46 - 159
Dinoseb	8.9	U J1 Q	4.82	7.74	J J1 D	ug/L		161	25 - 132
MCPA	580	U J1	482	580	U J1 D	ug/L		0	35 - 144
MCPP	890	U J1	482	890	U J1 D	ug/L		0	33 - 157
2,4,5-T	5.8	U J1	4.82	3.99	J D	ug/L		83	42 - 147

Method: 8151A DOD - Herbicides (GC) (Continued)

Lab Sample ID: 280-109117-4 MS
Matrix: Water
Analysis Batch: 415679

Client Sample ID: QD-04262018
Prep Type: Total/NA
Prep Batch: 413309

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP)	5.8	U J1	4.82	38.2	J1 D	ug/L		792	51 - 134

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*85*	*D*	*32 - 138*

Lab Sample ID: 280-109117-4 MSD
Matrix: Water
Analysis Batch: 415679

Client Sample ID: QD-04262018
Prep Type: Total/NA
Prep Batch: 413309

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	5.8	U J1	4.87	5.8	U J1 D	ug/L		0	45 - 152	NC	30
Dalapon	18	U Q	4.87	18	U D	ug/L		NC	19 - 139	NC	30
2,4-DB	8.9	U J1	4.87	9.0	U J1 D	ug/L		0	35 - 153	NC	30
Dicamba	5.8	U J1	4.87	1.86	J D J1	ug/L		38	50 - 141	14	30
Dichlorprop	18	U J1	4.87	8.71	J D J1	ug/L		NC	46 - 159	44	30
Dinoseb	8.9	U J1 Q	4.87	6.68	J J1 D	ug/L		137	25 - 132	15	30
MCPA	580	U J1	487	580	U J1 D	ug/L		0	35 - 144	NC	30
MCPP	890	U J1	487	900	U J1 D	ug/L		0	33 - 157	NC	30
2,4,5-T	5.8	U J1	4.87	3.27	J D	ug/L		67	42 - 147	20	30
Silvex (2,4,5-TP)	5.8	U J1	4.87	42.2	J1 D	ug/L		866	51 - 134	10	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*88*	*D*	*32 - 138*

QC Association Summary

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

GC Semi VOA

Prep Batch: 413309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-109117-1	FU-04242018	Total/NA	Water	8151A	
280-109117-2	BF-2BR-04252018	Total/NA	Water	8151A	
280-109117-3	DUP2-04262018	Total/NA	Water	8151A	
280-109117-4	QD-04262018	Total/NA	Water	8151A	
MB 280-413309/1-A	Method Blank	Total/NA	Water	8151A	
LCS 280-413309/2-A	Lab Control Sample	Total/NA	Water	8151A	
280-109117-4 MS	QD-04262018	Total/NA	Water	8151A	
280-109117-4 MSD	QD-04262018	Total/NA	Water	8151A	

Analysis Batch: 415679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-109117-1	FU-04242018	Total/NA	Water	8151A DOD	413309
280-109117-2	BF-2BR-04252018	Total/NA	Water	8151A DOD	413309
280-109117-3	DUP2-04262018	Total/NA	Water	8151A DOD	413309
280-109117-4	QD-04262018	Total/NA	Water	8151A DOD	413309
MB 280-413309/1-A	Method Blank	Total/NA	Water	8151A DOD	413309
LCS 280-413309/2-A	Lab Control Sample	Total/NA	Water	8151A DOD	413309
280-109117-4 MS	QD-04262018	Total/NA	Water	8151A DOD	413309
280-109117-4 MSD	QD-04262018	Total/NA	Water	8151A DOD	413309

Lab Chronicle

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

Client Sample ID: FU-04242018 — Lab Sample ID: 280-109117-1

Date Collected: 04/24/18 11:38 — **Matrix: Water**
Date Received: 04/28/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			1030.3 mL	10 mL	413309	05/01/18 11:30	RPC	TAL DEN
Total/NA	Analysis	8151A DOD		1			415679	05/22/18 00:46	TEM	TAL DEN

Client Sample ID: BF-2BR-04252018 — Lab Sample ID: 280-109117-2

Date Collected: 04/25/18 14:08 — **Matrix: Water**
Date Received: 04/28/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			1003.8 mL	10 mL	413309	05/01/18 11:30	RPC	TAL DEN
Total/NA	Analysis	8151A DOD		1			415679	05/22/18 01:03	TEM	TAL DEN

Client Sample ID: DUP2-04262018 — Lab Sample ID: 280-109117-3

Date Collected: 04/26/18 09:00 — **Matrix: Water**
Date Received: 04/28/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			1049.6 mL	10 mL	413309	05/01/18 11:30	RPC	TAL DEN
Total/NA	Analysis	8151A DOD		10			415679	05/22/18 01:21	TEM	TAL DEN

Client Sample ID: QD-04262018 — Lab Sample ID: 280-109117-4

Date Collected: 04/26/18 11:04 — **Matrix: Water**
Date Received: 04/28/18 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			1034.8 mL	10 mL	413309	05/01/18 11:30	RPC	TAL DEN
Total/NA	Analysis	8151A DOD		10			415679	05/22/18 01:38	TEM	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19
New Jersey	NELAP	2	CO004	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8151A DOD	8151A	Water	2,4,5-T
8151A DOD	8151A	Water	2,4-D
8151A DOD	8151A	Water	2,4-DB
8151A DOD	8151A	Water	Dalapon
8151A DOD	8151A	Water	Dicamba
8151A DOD	8151A	Water	Dichlorprop
8151A DOD	8151A	Water	Dinoseb
8151A DOD	8151A	Water	MCPA
8151A DOD	8151A	Water	MCPP
8151A DOD	8151A	Water	Silvex (2,4,5-TP)

Method Summary

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

Method	Method Description	Protocol	Laboratory
8151A DOD	Herbicides (GC)	SW846	TAL DEN
8151A	Extraction (Herbicides)	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Insight Environmental Engineering & Cons
Project/Site: CIC Edison LTM March 2018

TestAmerica Job ID: 280-109117-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-109117-1	FU-04242018	Water	04/24/18 11:38	04/28/18 09:00
280-109117-2	BF-2BR-04252018	Water	04/25/18 14:08	04/28/18 09:00
280-109117-3	DUP2-04262018	Water	04/26/18 09:00	04/28/18 09:00
280-109117-4	QD-04262018	Water	04/26/18 11:04	04/28/18 09:00

HERBICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Instrument ID: SGC_M Analysis Batch Number: 415109

Lab Sample ID: STD1 280-415109/9 IC Client Sample ID:

Date Analyzed: 05/16/18 16:58 Lab File ID: 05160009.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dalapon	1.12	Incomplete Integration	mooret	05/17/18 11:46

HERBICIDES MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Instrument ID: SGC_M Analysis Batch Number: 415679

Lab Sample ID: 280-109117-1 Client Sample ID: FU-04242018

Date Analyzed: 05/22/18 00:46 Lab File ID: 05210022.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
MCPP	4.95	Baseline Smoothing	mooret	05/22/18 10:10

Lab Sample ID: CCV 280-415679/28 Client Sample ID:

Date Analyzed: 05/22/18 02:30 Lab File ID: 05210028.D GC Column: CLP2 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dicamba	4.79	Incomplete Integration	mooret	05/22/18 10:02

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8151 LCS_00095	06/09/18	04/09/18	P&T Methanol, Lot MethanolP&T_00197	100 mL	8151_LCS_Stck_00049	1 mL	2,4,5-T	10 ug/mL
							2,4-D	10 ug/mL
							2,4-DB	10 ug/mL
							Dalapon	10 ug/mL
							Dicamba	10 ug/mL
							Dichlorprop	10 ug/mL
							Dinoseb	10 ug/mL
							MCPA	1000 ug/mL
							MCPP	1000 ug/mL
							Picloram	10 ug/mL
							Silvex (2,4,5-TP)	10 ug/mL
					MCPA&MCPP_00025	1 mL	MCPA	1000 ug/mL
							MCPP	1000 ug/mL
.8151_LCS_Stck_00049	12/06/18	Accustandard, Lot 216111344			(Purchased Reagent)		2,4,5-T	1000 ug/mL
							2,4-D	1000 ug/mL
							2,4-DB	1000 ug/mL
							Dalapon	1000 ug/mL
							Dicamba	1000 ug/mL
							Dichlorprop	1000 ug/mL
							Dinoseb	1000 ug/mL
							MCPA	10000 ug/mL
							MCPP	10000 ug/mL
							Picloram	1000 ug/mL
							Silvex (2,4,5-TP)	1000 ug/mL
.MCPA&MCPP_00025	05/25/19	AccuStandard, Lot 217041338			(Purchased Reagent)		MCPA	90 mg/mL
							MCPP	90 mg/mL
8151ICALL1_00065	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	5 mL	8151ICALL6_00062	0.25 mL	Pentachlorophenol	0.0477375 ug/mL
							2,4,5-T	0.04787 ug/mL
							2,4-D	0.047015 ug/mL
							2,4-DB	0.0475575 ug/mL
							Dicamba	0.0474625 ug/mL
							Dichlorprop	0.0476575 ug/mL
							Dinoseb	0.0477125 ug/mL
							Silvex (2,4,5-TP)	0.048 ug/mL
							Dalapon	0.0452675 ug/mL
							MCPA	4.69917 ug/mL
							MCPP	4.71271 ug/mL
							2,4-Dichlorophenylacetic acid	0.0464 ug/mL
.8151ICALL6_00062	10/18/18	04/18/18	HEXANE, Lot Hexane_Cycl_00049	10 mL	8151WorkALT_00013	1 mL	Pentachlorophenol	0.95475 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4,5-T	0.9574 ug/mL
							2,4-D	0.9403 ug/mL
							2,4-DB	0.95115 ug/mL
							Dicamba	0.94925 ug/mL
							Dichlorprop	0.95315 ug/mL
							Dinoseb	0.95425 ug/mL
							Silvex (2,4,5-TP)	0.96 ug/mL
							Dalapon	0.90535 ug/mL
							MCPA	93.9834 ug/mL
							MCPP	94.2542 ug/mL
							2,4-Dichlorophenylacetic acid	0.928 ug/mL
..8151WorkALT_00013	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	10 mL	8151PCP_Mrkr_00004	0.1 mL	Pentachlorophenol	9.5475 ug/mL
					8151ResMix#1_00010	0.5 mL	2,4,5-T	9.574 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5115 ug/mL
							Dicamba	9.4925 ug/mL
							Dichlorprop	9.5315 ug/mL
							Dinoseb	9.5425 ug/mL
							Silvex (2,4,5-TP)	9.6 ug/mL
					8151ResMix#2_00009	50 uL	Dalapon	9.0535 ug/mL
					8151ResMix#3_00014	0.5 mL	MCPA	939.834 ug/mL
							MCPP	942.542 ug/mL
					8151StkSurr_00062	1 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
...8151PCP_Mrkr_00004	10/18/18	Restek, Lot A0128694			(Purchased Reagent)		Pentachlorophenol	954.75 ug/mL
...8151ResMix#1_00010	10/18/18	Restek, Lot A0122579			(Purchased Reagent)		2,4,5-T	191.48 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.23 ug/mL
							Dicamba	189.85 ug/mL
							Dichlorprop	190.63 ug/mL
							Dinoseb	190.85 ug/mL
							Silvex (2,4,5-TP)	192 ug/mL
...8151ResMix#2_00009	10/18/18	Restek, Lot A0124376			(Purchased Reagent)		Dalapon	1810.7 ug/mL
...8151ResMix#3_00014	10/18/18	Restek, Lot A0130139			(Purchased Reagent)		MCPA	18796.7 ug/mL
							MCPP	18850.8 ug/mL
...8151StkSurr_00062	10/18/18	AccuStandard, Lot 217031077			(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICALL2_00067	10/18/18	04/18/18	Hexane, Lot HEx_cycl_00049	5 mL	8151ICALL6_00062	0.5 mL	Pentachlorophenol	0.095475 ug/mL
							2,4,5-T	0.09574 ug/mL
							2,4-D	0.09403 ug/mL
							2,4-DB	0.095115 ug/mL
							Dicamba	0.094925 ug/mL
							Dichlorprop	0.095315 ug/mL
							Dinoseb	0.095425 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Silvex (2,4,5-TP)	0.096 ug/mL
							Dalapon	0.090535 ug/mL
							MCPA	9.39834 ug/mL
							MCPP	9.42542 ug/mL
							2,4-Dichlorophenylacetic acid	0.0928 ug/mL
.8151ICALL6_00062	10/18/18	04/18/18	HEXANE, Lot Hexane_Cycl_00049	10 mL	8151WorkALT_00013	1 mL	Pentachlorophenol	0.95475 ug/mL
							2,4,5-T	0.9574 ug/mL
							2,4-D	0.9403 ug/mL
							2,4-DB	0.95115 ug/mL
							Dicamba	0.94925 ug/mL
							Dichlorprop	0.95315 ug/mL
							Dinoseb	0.95425 ug/mL
							Silvex (2,4,5-TP)	0.96 ug/mL
							Dalapon	0.90535 ug/mL
							MCPA	93.9834 ug/mL
							MCPP	94.2542 ug/mL
							2,4-Dichlorophenylacetic acid	0.928 ug/mL
..8151WorkALT_00013	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	10 mL	8151PCP_Mrkr_00004	0.1 mL	Pentachlorophenol	9.5475 ug/mL
					8151ResMix#1_00010	0.5 mL	2,4,5-T	9.574 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5115 ug/mL
							Dicamba	9.4925 ug/mL
							Dichlorprop	9.5315 ug/mL
							Dinoseb	9.5425 ug/mL
							Silvex (2,4,5-TP)	9.6 ug/mL
					8151ResMix#2_00009	50 uL	Dalapon	9.0535 ug/mL
					8151ResMix#3_00014	0.5 mL	MCPA	939.834 ug/mL
							MCPP	942.542 ug/mL
					8151StkSurr_00062	1 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
...8151PCP_Mrkr_00004	10/18/18	Restek, Lot A0128694			(Purchased Reagent)		Pentachlorophenol	954.75 ug/mL
...8151ResMix#1_00010	10/18/18	Restek, Lot A0122579			(Purchased Reagent)		2,4,5-T	191.48 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.23 ug/mL
							Dicamba	189.85 ug/mL
							Dichlorprop	190.63 ug/mL
							Dinoseb	190.85 ug/mL
							Silvex (2,4,5-TP)	192 ug/mL
...8151ResMix#2_00009	10/18/18	Restek, Lot A0124376			(Purchased Reagent)		Dalapon	1810.7 ug/mL
...8151ResMix#3_00014	10/18/18	Restek, Lot A0130139			(Purchased Reagent)		MCPA	18796.7 ug/mL
							MCPP	18850.8 ug/mL
...8151StkSurr_00062	10/18/18	AccuStandard, Lot 217031077			(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICALL3_00060	10/18/18	04/18/18	Hexane, Lot Hex_cycl_00049	5 mL	8151WorkALT_00013	0.125 mL	Pentachlorophenol	0.238688 ug/mL
							2,4,5-T	0.23935 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4-D	0.235075 ug/mL
							2,4-DB	0.237788 ug/mL
							Dicamba	0.237313 ug/mL
							Dichlorprop	0.238288 ug/mL
							Dinoseb	0.238563 ug/mL
							Silvex (2,4,5-TP)	0.24 ug/mL
							Dalapon	0.226338 ug/mL
							MCPA	23.4959 ug/mL
							MCPP	23.5635 ug/mL
							2,4-Dichlorophenylacetic acid	0.232 ug/mL
.8151WorkALT_00013	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	10 mL	8151PCP_Mrkr_00004	0.1 mL	Pentachlorophenol	9.5475 ug/mL
					8151ResMix#1_00010	0.5 mL	2,4,5-T	9.574 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5115 ug/mL
							Dicamba	9.4925 ug/mL
							Dichlorprop	9.5315 ug/mL
							Dinoseb	9.5425 ug/mL
							Silvex (2,4,5-TP)	9.6 ug/mL
					8151ResMix#2_00009	50 uL	Dalapon	9.0535 ug/mL
					8151ResMix#3_00014	0.5 mL	MCPA	939.834 ug/mL
							MCPP	942.542 ug/mL
					8151StkSurr_00062	1 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
..8151PCP_Mrkr_00004	10/18/18	Restek, Lot A0128694			(Purchased Reagent)		Pentachlorophenol	954.75 ug/mL
..8151ResMix#1_00010	10/18/18	Restek, Lot A0122579			(Purchased Reagent)		2,4,5-T	191.48 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.23 ug/mL
							Dicamba	189.85 ug/mL
							Dichlorprop	190.63 ug/mL
							Dinoseb	190.85 ug/mL
							Silvex (2,4,5-TP)	192 ug/mL
..8151ResMix#2_00009	10/18/18	Restek, Lot A0124376			(Purchased Reagent)		Dalapon	1810.7 ug/mL
..8151ResMix#3_00014	10/18/18	Restek, Lot A0130139			(Purchased Reagent)		MCPA	18796.7 ug/mL
							MCPP	18850.8 ug/mL
..8151StkSurr_00062	10/18/18	AccuStandard, Lot 217031077			(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICALL4_00128	10/18/18	04/18/18	Hexane, Lot Hex_cycl_00049	50 mL	8151WorkALT_00013	2.5 mL	Pentachlorophenol	0.477375 ug/mL
							2,4,5-T	0.4787 ug/mL
							2,4-D	0.47015 ug/mL
							2,4-DB	0.475575 ug/mL
							Dicamba	0.474625 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dichlorprop	0.476575 ug/mL
							Dinoseb	0.477125 ug/mL
							Silvex (2,4,5-TP)	0.48 ug/mL
							Dalapon	0.452675 ug/mL
							MCPA	46.9917 ug/mL
							MCPP	47.1271 ug/mL
							2,4-Dichlorophenylacetic acid	0.464 ug/mL
.8151WorkALT_00013	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	10 mL	8151PCP_Mrkr_00004	0.1 mL	Pentachlorophenol	9.5475 ug/mL
					8151ResMix#1_00010	0.5 mL	2,4,5-T	9.574 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5115 ug/mL
							Dicamba	9.4925 ug/mL
							Dichlorprop	9.5315 ug/mL
							Dinoseb	9.5425 ug/mL
							Silvex (2,4,5-TP)	9.6 ug/mL
					8151ResMix#2_00009	50 uL	Dalapon	9.0535 ug/mL
					8151ResMix#3_00014	0.5 mL	MCPA	939.834 ug/mL
							MCPP	942.542 ug/mL
					8151StkSurr_00062	1 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
..8151PCP_Mrkr_00004	10/18/18		Restek, Lot A0128694		(Purchased Reagent)		Pentachlorophenol	954.75 ug/mL
..8151ResMix#1_00010	10/18/18		Restek, Lot A0122579		(Purchased Reagent)		2,4,5-T	191.48 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.23 ug/mL
							Dicamba	189.85 ug/mL
							Dichlorprop	190.63 ug/mL
							Dinoseb	190.85 ug/mL
							Silvex (2,4,5-TP)	192 ug/mL
..8151ResMix#2_00009	10/18/18		Restek, Lot A0124376		(Purchased Reagent)		Dalapon	1810.7 ug/mL
..8151ResMix#3_00014	10/18/18		Restek, Lot A0130139		(Purchased Reagent)		MCPA	18796.7 ug/mL
							MCPP	18850.8 ug/mL
..8151StkSurr_00062	10/18/18		AccuStandard, Lot 217031077		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICALL5_00059	10/18/18	04/18/18	HEXANE, Lot Hex_cycl_00049	5 mL	8151WorkALT_00013	0.375 mL	Pentachlorophenol	0.716063 ug/mL
							2,4,5-T	0.71805 ug/mL
							2,4-D	0.705225 ug/mL
							2,4-DB	0.713363 ug/mL
							Dicamba	0.711938 ug/mL
							Dichlorprop	0.714862 ug/mL
							Dinoseb	0.715688 ug/mL
							Silvex (2,4,5-TP)	0.72 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dalapon	0.679013 ug/mL
							MCPA	70.4875 ug/mL
							MCPP	70.6907 ug/mL
							2,4-Dichlorophenylacetic acid	0.696 ug/mL
.8151WorkALT_00013	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	10 mL	8151PCP_Mrkr_00004	0.1 mL	Pentachlorophenol	9.5475 ug/mL
					8151ResMix#1_00010	0.5 mL	2,4,5-T	9.574 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5115 ug/mL
							Dicamba	9.4925 ug/mL
							Dichlorprop	9.5315 ug/mL
							Dinoseb	9.5425 ug/mL
							Silvex (2,4,5-TP)	9.6 ug/mL
					8151ResMix#2_00009	50 uL	Dalapon	9.0535 ug/mL
					8151ResMix#3_00014	0.5 mL	MCPA	939.834 ug/mL
							MCPP	942.542 ug/mL
					8151StkSurr_00062	1 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
..8151PCP_Mrkr_00004	10/18/18	Restek, Lot A0128694			(Purchased Reagent)		Pentachlorophenol	954.75 ug/mL
..8151ResMix#1_00010	10/18/18	Restek, Lot A0122579			(Purchased Reagent)		2,4,5-T	191.48 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.23 ug/mL
							Dicamba	189.85 ug/mL
							Dichlorprop	190.63 ug/mL
							Dinoseb	190.85 ug/mL
							Silvex (2,4,5-TP)	192 ug/mL
..8151ResMix#2_00009	10/18/18	Restek, Lot A0124376			(Purchased Reagent)		Dalapon	1810.7 ug/mL
..8151ResMix#3_00014	10/18/18	Restek, Lot A0130139			(Purchased Reagent)		MCPA	18796.7 ug/mL
							MCPP	18850.8 ug/mL
..8151StkSurr_00062	10/18/18	AccuStandard, Lot 217031077			(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICALL6_00062	10/18/18	04/18/18	HEXANE, Lot Hexane_Cycl_00049	10 mL	8151WorkALT_00013	1 mL	Pentachlorophenol	0.95475 ug/mL
							2,4,5-T	0.9574 ug/mL
							2,4-D	0.9403 ug/mL
							2,4-DB	0.95115 ug/mL
							Dicamba	0.94925 ug/mL
							Dichlorprop	0.95315 ug/mL
							Dinoseb	0.95425 ug/mL
							Silvex (2,4,5-TP)	0.96 ug/mL
							Dalapon	0.90535 ug/mL
							MCPA	93.9834 ug/mL
							MCPP	94.2542 ug/mL
							2,4-Dichlorophenylacetic acid	0.928 ug/mL
.8151WorkALT_00013	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	10 mL	8151PCP_Mrkr_00004	0.1 mL	Pentachlorophenol	9.5475 ug/mL
					8151ResMix#1_00010	0.5 mL	2,4,5-T	9.574 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5115 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dicamba	9.4925 ug/mL
							Dichlorprop	9.5315 ug/mL
							Dinoseb	9.5425 ug/mL
							Silvex (2,4,5-TP)	9.6 ug/mL
					8151ResMix#2_00009	50 uL	Dalapon	9.0535 ug/mL
					8151ResMix#3_00014	0.5 mL	MCPA	939.834 ug/mL
							MCPP	942.542 ug/mL
					8151StkSurr_00062	1 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
..8151PCP_Mrkr_00004	10/18/18		Restek, Lot A0128694		(Purchased Reagent)		Pentachlorophenol	954.75 ug/mL
..8151ResMix#1_00010	10/18/18		Restek, Lot A0122579		(Purchased Reagent)		2,4,5-T	191.48 ug/mL
							2,4-D	188.06 ug/mL
							2,4-DB	190.23 ug/mL
							Dicamba	189.85 ug/mL
							Dichlorprop	190.63 ug/mL
							Dinoseb	190.85 ug/mL
							Silvex (2,4,5-TP)	192 ug/mL
..8151ResMix#2_00009	10/18/18		Restek, Lot A0124376		(Purchased Reagent)		Dalapon	1810.7 ug/mL
..8151ResMix#3_00014	10/18/18		Restek, Lot A0130139		(Purchased Reagent)		MCPA	18796.7 ug/mL
							MCPP	18850.8 ug/mL
..8151StkSurr_00062	10/18/18		AccuStandard, Lot 217031077		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICALL7_00059	10/18/18	04/18/18	HEXANE, Lot Hex_Cycl_00049	5 mL	8151WorkALT_00013	1 mL	Pentachlorophenol	1.9095 ug/mL
							2,4,5-T	1.9148 ug/mL
							2,4-D	1.8806 ug/mL
							2,4-DB	1.9023 ug/mL
							Dicamba	1.8985 ug/mL
							Dichlorprop	1.9063 ug/mL
							Dinoseb	1.9085 ug/mL
							Silvex (2,4,5-TP)	1.92 ug/mL
							Dalapon	1.8107 ug/mL
							MCPA	187.967 ug/mL
							MCPP	188.508 ug/mL
							2,4-Dichlorophenylacetic acid	1.856 ug/mL
.8151WorkALT_00013	10/18/18	04/18/18	Hexane, Lot Hex_Cycl_00049	10 mL	8151PCP_Mrkr_00004	0.1 mL	Pentachlorophenol	9.5475 ug/mL
					8151ResMix#1_00010	0.5 mL	2,4,5-T	9.574 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.5115 ug/mL
							Dicamba	9.4925 ug/mL
							Dichlorprop	9.5315 ug/mL
							Dinoseb	9.5425 ug/mL
							Silvex (2,4,5-TP)	9.6 ug/mL
					8151ResMix#2_00009	50 uL	Dalapon	9.0535 ug/mL
					8151ResMix#3_00014	0.5 mL	MCPA	939.834 ug/mL
							MCPP	942.542 ug/mL
					8151StkSurr_00062	1 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
..8151PCP_Mrkr_00004	10/18/18		Restek, Lot A0128694		(Purchased Reagent)		Pentachlorophenol	954.75 ug/mL
..8151ResMix#1_00010	10/18/18		Restek, Lot A0122579		(Purchased Reagent)		2,4,5-T	191.48 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4-D	188.06 ug/mL
							2,4-DB	190.23 ug/mL
							Dicamba	189.85 ug/mL
							Dichlorprop	190.63 ug/mL
							Dinoseb	190.85 ug/mL
							Silvex (2,4,5-TP)	192 ug/mL
..8151ResMix#2_00009	10/18/18		Restek, Lot A0124376		(Purchased Reagent)		Dalapon	1810.7 ug/mL
..8151ResMix#3_00014	10/18/18		Restek, Lot A0130139		(Purchased Reagent)		MCPA	18796.7 ug/mL
							MCPP	18850.8 ug/mL
..8151StkSurr_00062	10/18/18		AccuStandard, Lot 217031077		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICV_00018	10/18/18	04/18/18	Hexane, Lot Hex_cycl_00049	10 mL	8151SSWrking_00031	0.375 mL	2,4-Dichlorophenylacetic acid	0.348 ug/mL
.8151SSWrking_00031	10/18/18	04/18/18	Hexane, Lot Hex_cycl_00049	5 mL	8151StkSurr_00063	0.5 mL	2,4-Dichlorophenylacetic acid	9.28 ug/mL
..8151StkSurr_00063	10/18/18		AccuStandard, Lot 217031077		(Purchased Reagent)		2,4-Dichlorophenylacetic acid	92.8 ug/mL
8151ICV_00018	10/18/18	04/18/18	Hexane, Lot Hex_cycl_00049	10 mL	8151SSWrking_00031	0.375 mL	2,4,5-T	0.355463 ug/mL
							2,4-D	0.352613 ug/mL
							2,4-DB	0.355013 ug/mL
							Dalapon	0.341475 ug/mL
							Dicamba	0.352613 ug/mL
							Dichlorprop	0.353888 ug/mL
							Dinoseb	0.3543 ug/mL
							MCPA	35.0475 ug/mL
							MCPP	35.1975 ug/mL
							Silvex (2,4,5-TP)	0.356438 ug/mL
.8151SSWrking_00031	10/18/18	04/18/18	Hexane, Lot Hex_cycl_00049	5 mL	8151SSStk_00034	0.5 mL	2,4,5-T	9.479 ug/mL
							2,4-D	9.403 ug/mL
							2,4-DB	9.467 ug/mL
							Dalapon	9.106 ug/mL
							Dicamba	9.403 ug/mL
							Dichlorprop	9.437 ug/mL
							Dinoseb	9.448 ug/mL
							MCPA	934.6 ug/mL
							MCPP	938.6 ug/mL
							Silvex (2,4,5-TP)	9.505 ug/mL
..8151SSStk_00034	10/18/18		UltraScientific, Lot CP-2639		(Purchased Reagent)		2,4,5-T	94.79 ug/mL
							2,4-D	94.03 ug/mL
							2,4-DB	94.67 ug/mL
							Dalapon	91.06 ug/mL
							Dicamba	94.03 ug/mL
							Dichlorprop	94.37 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dinoseb	94.48 ug/mL
							MCPA	9346 ug/mL
							MCPP	9386 ug/mL
							Silvex (2,4,5-TP)	95.05 ug/mL
8151Surrogate_00157	06/20/18	04/20/18	P&T Methanol, Lot MethanolP&T 00197	200 mL	8151-SurStock_00091	1 mL	2,4-Dichlorophenylacetic acid	5 ug/mL
.8151-SurStock_00091	04/20/19	Restek, Lot A0117232			(Purchased Reagent)		2,4-Dichlorophenylacetic acid	1000 ug/mL

8151A_DOD5

Herbicides (GC)

FORM II
HERBICIDES SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): CLP1 ID: 0.32(mm)

Client Sample ID	Lab Sample ID	DCPAA1 #	
FU-04242018	280-109117-1	63	
BF-2BR-04252018	280-109117-2	72	
DUP2-04262018	280-109117-3	73	D
QD-04262018	280-109117-4	45	D
	MB 280-413309/1-A	72	
	LCS 280-413309/2-A	68	
QD-04262018 MS	280-109117-4 MS	85	D
QD-04262018 MSD	280-109117-4 MSD	88	D

	QC LIMITS
DCPAA = 2,4-Dichlorophenylacetic acid	32-138

Column to be used to flag recovery values

FORM II 8151A DOD

FORM III
HERBICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 05210021.D

Lab ID: LCS 280-413309/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
2,4-D	5.00	3.58 J	72	45-152	
Dalapon	5.00	4.15	83	19-139	
2,4-DB	5.00	2.77 J	55	35-153	
Dicamba	5.00	3.25	65	50-141	
Dichlorprop	5.00	3.26 J	65	46-159	
Dinoseb	5.00	2.31	46	25-132	
MCPA	500	292 J	58	35-144	
MCPP	500	375 J	75	33-157	
2,4,5-T	5.00	3.30	66	42-147	
Silvex (2,4,5-TP)	5.00	3.29	66	51-134	

Column to be used to flag recovery and RPD values

FORM III 8151A DOD

FORM III
HERBICIDES MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 05210026.D

Lab ID: 280-109117-4 MS Client ID: QD-04262018 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
2,4-D	4.82	5.8 U	5.8 U	0	45-152	J1 D
Dalapon	4.82	18 U	18 U	NC	19-139	D
2,4-DB	4.82	8.9 U	8.9 U	0	35-153	J1 D
Dicamba	4.82	5.8 U	1.62 J	34	50-141	J1 D
Dichlorprop	4.82	18 U	13.6 J	NC	46-159	D
Dinoseb	4.82	8.9 U	7.74 J	161	25-132	J1 D
MCPA	482	580 U	580 U	0	35-144	J1 D
MCPP	482	890 U	890 U	0	33-157	J1 D
2,4,5-T	4.82	5.8 U	3.99 J	83	42-147	D
Silvex (2,4,5-TP)	4.82	5.8 U	38.2	792	51-134	J1 D

Column to be used to flag recovery and RPD values

FORM III 8151A DOD

FORM III
HERBICIDES MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 05210027.D

Lab ID: 280-109117-4 MSD Client ID: QD-04262018 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,4-D	4.87	5.8 U	0	NC	30	45-152	J1 D
Dalapon	4.87	18 U	NC	NC	30	19-139	D
2,4-DB	4.87	9.0 U	0	NC	30	35-153	J1 D
Dicamba	4.87	1.86 J	38	14	30	50-141	D J1
Dichlorprop	4.87	8.71 J	NC	44	30	46-159	D J1
Dinoseb	4.87	6.68 J	137	15	30	25-132	J1 D
MCPA	487	580 U	0	NC	30	35-144	J1 D
MCPP	487	900 U	0	NC	30	33-157	J1 D
2,4,5-T	4.87	3.27 J	67	20	30	42-147	D
Silvex (2,4,5-TP)	4.87	42.2	866	10	30	51-134	J1 D

Column to be used to flag recovery and RPD values

FORM III 8151A DOD

FORM IV
HERBICIDES METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: MB 280-413309/1-A

Matrix: Water Date Extracted: 05/01/2018 11:30

Lab File ID:(1) 05210020.D Lab File ID:(2) 05210020.D

Date Analyzed:(1) 05/22/2018 00:11 Date Analyzed:(2) 05/22/2018 00:11

Instrument ID:(1) SGC_M Instrument ID:(2) SGC_M

GC Column:(1) CLP1 ID: 0.32(mm) GC Column:(2) CLP2 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-413309/2-A	05/22/2018 00:29	05/22/2018 00:29
FU-04242018	280-109117-1	05/22/2018 00:46	05/22/2018 00:46
BF-2BR-04252018	280-109117-2	05/22/2018 01:03	05/22/2018 01:03
DUP2-04262018	280-109117-3	05/22/2018 01:21	05/22/2018 01:21
QD-04262018	280-109117-4	05/22/2018 01:38	05/22/2018 01:38
QD-04262018 MS	280-109117-4 MS	05/22/2018 01:55	05/22/2018 01:55
QD-04262018 MSD	280-109117-4 MSD	05/22/2018 02:13	05/22/2018 02:13

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Sample No.: STD4 280-415109/6 Date Analyzed: 05/16/2018 15:58

Instrument ID: SGC_M GC Column: CLP1 ID: 0.32(mm)

Lab File ID (Standard): 05160006.D Heated Purge: (Y/N) N

Calibration ID: 32395

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA		
				RT #		
INITIAL CALIBRATION SURROGATE				4.89		
UPPER LIMIT				4.92		
LOWER LIMIT				4.86		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
STD4 280-415109/6 ICRT		05/16/2018 15:58	05160006.D	4.89		
ICV 280-415109/10		05/16/2018 17:18	05160010.D	4.90		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Sample No.: STD4 280-415109/6 Date Analyzed: 05/16/2018 15:58

Instrument ID: SGC_M GC Column: CLP2 ID: 0.32(mm)

Lab File ID (Standard): 05160006.D Heated Purge: (Y/N) N

Calibration ID: 32396

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA		
				RT #		
INITIAL CALIBRATION SURROGATE				4.63		
UPPER LIMIT				4.66		
LOWER LIMIT				4.60		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
STD4 280-415109/6 ICRT		05/16/2018 15:58	05160006.D	4.63		
ICV 280-415109/10		05/16/2018 17:18	05160010.D	4.63		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Sample No.: CCVRT 280-415679/3 Date Analyzed: 05/21/2018 19:16

Instrument ID: SGC_M GC Column: CLP1 ID: 0.32(mm)

Lab File ID (Standard): 05210003.D Heated Purge: (Y/N) N

Calibration ID: 32395

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA		
				RT #		
CONTINUING CALIBRATION SURROGATE				4.89		
UPPER LIMIT				4.92		
LOWER LIMIT				4.86		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
CCVRT 280-415679/3		05/21/2018 19:16	05210003.D	4.89		
CCV 280-415679/19		05/21/2018 23:54	05210019.D	4.89		
MB 280-413309/1-A		05/22/2018 00:11	05210020.D	4.89		
LCS 280-413309/2-A		05/22/2018 00:29	05210021.D	4.89		
280-109117-1	FU-04242018	05/22/2018 00:46	05210022.D	4.89		
280-109117-2	BF-2BR-04252018	05/22/2018 01:03	05210023.D	4.89		
280-109117-3	DUP2-04262018	05/22/2018 01:21	05210024.D	4.89		
280-109117-4	QD-04262018	05/22/2018 01:38	05210025.D	4.89		
280-109117-4 MS	QD-04262018 MS	05/22/2018 01:55	05210026.D	4.89		
280-109117-4 MSD	QD-04262018 MSD	05/22/2018 02:13	05210027.D	4.89		
CCV 280-415679/28		05/22/2018 02:30	05210028.D	4.89		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM VIII
HERBICIDES ANALYTICAL SEQUENCE

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Sample No.: CCVRT 280-415679/3 Date Analyzed: 05/21/2018 19:16

Instrument ID: SGC_M GC Column: CLP2 ID: 0.32(mm)

Lab File ID (Standard): 05210003.D Heated Purge: (Y/N) N

Calibration ID: 32396

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, STANDARDS, MS/MSDs AND LCSs IS GIVEN BELOW:

				DCPAA RT #		
CONTINUING CALIBRATION SURROGATE				4.63		
UPPER LIMIT				4.66		
LOWER LIMIT				4.60		
LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	LAB FILE ID			
CCVRT 280-415679/3		05/21/2018 19:16	05210003.D	4.63		
CCV 280-415679/19		05/21/2018 23:54	05210019.D	4.63		
CCV 280-415679/28		05/22/2018 02:30	05210028.D	4.62		

DCPAA = 2,4-Dichlorophenylacetic acid

DCPAA RT Limit = ± 0.03 minutes of surrogate RT

Column used to flag values outside QC limits

FORM VIII 8151A DOD

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Client Sample ID: FU-04242018 Lab Sample ID: 280-109117-1

Instrument ID (1): SGC_M Instrument ID (2): SGC_M

Date Analyzed (1): 05/22/2018 00:46 Date Analyzed (2): 05/22/2018 00:46

GC Column (1): CLP1 ID: 0.32(mm) GC Column (2): CLP2 ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
2,4-DB	1		6.78	6.75	6.81	0.90		99.3
	2		6.63	6.61	6.67	2.7		

FORM X 8151A DOD

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Client Sample ID: DUP2-04262018 Lab Sample ID: 280-109117-3

Instrument ID (1): SGC_M Instrument ID (2): SGC_M

Date Analyzed (1): 05/22/2018 01:21 Date Analyzed (2): 05/22/2018 01:21

GC Column (1): CLP1 ID: 0.32(mm) GC Column (2): CLP2 ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Dinoseb	1		7.11	7.08	7.14	7.7		7.7
	2		6.76	6.73	6.79	8.3		

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Client Sample ID: QD-04262018 MS Lab Sample ID: 280-109117-4 MS

Instrument ID (1): SGC_M Instrument ID (2): SGC_M

Date Analyzed (1): 05/22/2018 01:55 Date Analyzed (2): 05/22/2018 01:55

GC Column (1): CLP1 ID: 0.32(mm) GC Column (2): CLP2 ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Dicamba	1		5.06	5.03	5.09	1.62		85.3
	2		4.79	4.76	4.82	4.02		
Silvex (2,4,5-TP)	1		6.35	6.34	6.40	38.2		159.7
	2		6.13	6.11	6.17	4.27		
2,4,5-T	1		6.54	6.51	6.57	3.99		58.3
	2		6.36	6.33	6.39	7.26		
Dinoseb	1		7.11	7.08	7.14	7.74		52.8
	2		6.76	6.73	6.79	13.3		

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Client Sample ID: QD-04262018 MSD Lab Sample ID: 280-109117-4 MSD

Instrument ID (1): SGC_M Instrument ID (2): SGC_M

Date Analyzed (1): 05/22/2018 02:13 Date Analyzed (2): 05/22/2018 02:13

GC Column (1): CLP1 ID: 0.32(mm) GC Column (2): CLP2 ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Dicamba	1		5.06	5.03	5.09	1.86		90.5
	2		4.79	4.76	4.82	4.93		
Silvex (2,4,5-TP)	1		6.35	6.34	6.40	42.2		169.0
	2		6.13	6.11	6.17	3.54		
2,4,5-T	1		6.54	6.51	6.57	3.27		96.0
	2		6.37	6.33	6.39	9.32		
Dinoseb	1		7.11	7.08	7.14	6.68		40.4
	2		6.76	6.73	6.79	10.1		

FORM X
IDENTIFICATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 280-413309/2-A

Instrument ID (1): SGC_M Instrument ID (2): SGC_M

Date Analyzed (1): 05/22/2018 00:29 Date Analyzed (2): 05/22/2018 00:29

GC Column (1): CLP1 ID: 0.32(mm) GC Column (2): CLP2 ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Dalapon	1		1.36	1.33	1.39	4.15		9.1
	2		1.13	1.10	1.16	4.54		
Dicamba	1		5.06	5.03	5.09	3.25		16.3
	2		4.79	4.76	4.82	3.82		
MCPP	1		5.25	5.22	5.28	375		1.4
	2		4.93	4.90	4.96	370		
MCPA	1		5.37	5.34	5.40	292		4.9
	2		5.13	5.10	5.16	306		
Dichlorprop	1		5.66	5.63	5.69	3.26		9.8
	2		5.39	5.36	5.42	3.59		
2,4-D	1		5.83	5.80	5.86	3.58		8.2
	2		5.62	5.59	5.65	3.89		
Silvex (2,4,5-TP)	1		6.37	6.34	6.40	3.29		11.5
	2		6.13	6.11	6.17	3.69		
2,4,5-T	1		6.54	6.51	6.57	3.30		6.8
	2		6.36	6.33	6.39	3.53		
2,4-DB	1		6.78	6.75	6.81	2.77		1.9
	2		6.63	6.61	6.67	2.82		
Dinoseb	1		7.11	7.08	7.14	2.31		0.1
	2		6.76	6.73	6.79	2.30		

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-109117-1

SDG No.:

Client Sample ID: FU-04242018 | Lab Sample ID: 280-109117-1

Matrix: Water | Lab File ID: 05210022.D

Analysis Method: 8151A DOD | Date Collected: 04/24/2018 11:38

Extraction Method: 8151A | Date Extracted: 05/01/2018 11:30

Sample wt/vol: 1030.3(mL) | Date Analyzed: 05/22/2018 00:46

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: CLP1 ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 415679 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	0.58	U	3.9	0.58	0.20
75-99-0	Dalapon	1.8	U	1.9	1.8	0.88
94-82-6	2,4-DB	0.90	J J1	3.9	0.89	0.35
1918-00-9	Dicamba	0.58	U	1.9	0.58	0.15
120-36-5	Dichlorprop	1.8	U	3.9	1.8	0.63
88-85-7	Dinoseb	0.89	U	0.97	0.89	0.44
94-74-6	MCPA	58	U	390	58	17
93-65-2	MCPP	140	J	390	89	32
93-76-5	2,4,5-T	0.58	U	0.97	0.58	0.18
93-72-1	Silvex (2,4,5-TP)	0.58	U	0.97	0.58	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	63		32-138

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-109117-1

SDG No.:

Client Sample ID: BF-2BR-04252018 | Lab Sample ID: 280-109117-2

Matrix: Water | Lab File ID: 05210023.D

Analysis Method: 8151A DOD | Date Collected: 04/25/2018 14:08

Extraction Method: 8151A | Date Extracted: 05/01/2018 11:30

Sample wt/vol: 1003.8(mL) | Date Analyzed: 05/22/2018 01:03

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | GC Column: CLP1 ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 415679 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	0.60	U	4.0	0.60	0.21
75-99-0	Dalapon	1.8	U	2.0	1.8	0.91
94-82-6	2,4-DB	0.92	U	4.0	0.92	0.36
1918-00-9	Dicamba	0.60	U	2.0	0.60	0.15
120-36-5	Dichlorprop	1.8	U	4.0	1.8	0.65
88-85-7	Dinoseb	0.92	U	1.0	0.92	0.45
94-74-6	MCPA	60	U	400	60	17
93-65-2	MCPP	92	U	400	92	33
93-76-5	2,4,5-T	0.60	U	1.0	0.60	0.19
93-72-1	Silvex (2,4,5-TP)	0.60	U	1.0	0.60	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	72		32-138

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-109117-1

SDG No.:

Client Sample ID: DUP2-04262018 | Lab Sample ID: 280-109117-3

Matrix: Water | Lab File ID: 05210024.D

Analysis Method: 8151A DOD | Date Collected: 04/26/2018 09:00

Extraction Method: 8151A | Date Extracted: 05/01/2018 11:30

Sample wt/vol: 1049.6(mL) | Date Analyzed: 05/22/2018 01:21

Con. Extract Vol.: 10(mL) | Dilution Factor: 10

Injection Volume: 1(uL) | GC Column: CLP1 ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 415679 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	5.7	U	38	5.7	2.0
75-99-0	Dalapon	18	U	19	18	8.7
94-82-6	2,4-DB	8.8	U	38	8.8	3.4
1918-00-9	Dicamba	5.7	U	19	5.7	1.4
120-36-5	Dichlorprop	18	U	38	18	6.2
88-85-7	Dinoseb	7.7	J D	9.5	8.8	4.3
94-74-6	MCPA	570	U	3800	570	160
93-65-2	MCPP	880	U	3800	880	310
93-76-5	2,4,5-T	5.7	U	9.5	5.7	1.8
93-72-1	Silvex (2,4,5-TP)	5.7	U	9.5	5.7	1.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	73	D	32-138

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-109117-1

SDG No.:

Client Sample ID: QD-04262018 | Lab Sample ID: 280-109117-4

Matrix: Water | Lab File ID: 05210025.D

Analysis Method: 8151A DOD | Date Collected: 04/26/2018 11:04

Extraction Method: 8151A | Date Extracted: 05/01/2018 11:30

Sample wt/vol: 1034.8(mL) | Date Analyzed: 05/22/2018 01:38

Con. Extract Vol.: 10(mL) | Dilution Factor: 10

Injection Volume: 1(uL) | GC Column: CLP1 ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 415679 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	5.8	U J1	39	5.8	2.0
75-99-0	Dalapon	18	U	19	18	8.8
94-82-6	2,4-DB	8.9	U J1	39	8.9	3.5
1918-00-9	Dicamba	5.8	U J1	19	5.8	1.4
120-36-5	Dichlorprop	18	U J1	39	18	6.3
88-85-7	Dinoseb	8.9	U J1	9.7	8.9	4.3
94-74-6	MCPA	580	U J1	3900	580	160
93-65-2	MCPP	890	U J1	3900	890	320
93-76-5	2,4,5-T	5.8	U	9.7	5.8	1.8
93-72-1	Silvex (2,4,5-TP)	5.8	U J1	9.7	5.8	1.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	45	D	32-138

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1 Analy Batch No.: 415109

SDG No.:

Instrument ID: SGC_M GC Column: CLP1 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/16/2018 14:58 Calibration End Date: 05/16/2018 16:58 Calibration ID: 32395

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-415109/9	05160009.D
Level 2	STD2 280-415109/8	05160008.D
Level 3	STD3 280-415109/7	05160007.D
Level 4	STD4 280-415109/6	05160006.D
Level 5	STD5 280-415109/5	05160005.D
Level 6	STD6 280-415109/4	05160004.D
Level 7	STD7 280-415109/3	05160003.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Dalapon	1.356	1.356	1.357	1.357	1.357	1.357	1.357				1.327 - 1.387	1.357
Dicamba	5.062	5.061	5.062	5.063	5.062	5.062	5.063				5.033 - 5.093	5.062
MCPP	5.249	5.249	5.249	5.251	5.252	5.253	5.256				5.221 - 5.281	5.251
MCPA	5.376	5.376	5.376	5.378	5.379	5.380	5.383				5.348 - 5.408	5.378
Dichlorprop	5.664	5.664	5.664	5.664	5.664	5.663	5.664				5.634 - 5.694	5.664
2,4-D	5.834	5.831	5.830	5.830	5.830	5.829	5.829				5.800 - 5.860	5.830
Pentachlorophenol	5.982	5.982	5.982	5.984	5.984	5.983	5.985				5.884 - 6.084	5.983
Silvex (2,4,5-TP)	6.375	6.374	6.374	6.375	6.375	6.374	6.375				6.345 - 6.405	6.375
2,4,5-T	6.544	6.540	6.541	6.540	6.541	6.539	6.540				6.510 - 6.570	6.541
2,4-DB	6.786	6.785	6.784	6.784	6.784	6.783	6.783				6.754 - 6.814	6.784
Dinoseb	7.114	7.114	7.114	7.114	7.114	7.114	7.115				7.084 - 7.144	7.114
2,4-Dichlorophenylacetic acid	4.895	4.895	4.896	4.894	4.895	4.895	4.895				4.864 - 4.924	4.895

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-109117-1 Analy Batch No.: 415109

SDG No.:

Instrument ID: SGC_M GC Column: CLP1 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/16/2018 14:58 Calibration End Date: 05/16/2018 16:58 Calibration ID: 32395

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-415109/9	05160009.D
Level 2	STD2 280-415109/8	05160008.D
Level 3	STD3 280-415109/7	05160007.D
Level 4	STD4 280-415109/6	05160006.D
Level 5	STD5 280-415109/5	05160005.D
Level 6	STD6 280-415109/4	05160004.D
Level 7	STD7 280-415109/3	05160003.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
Dalapon	293898426 233519841	278882631 223658760	234246035 194689883	239540721	Lin2	3805549.74	219314885							0.9930		0.9900
Dicamba	905368617 712300435	852411377 654144754	699513216 567986274	704496088	Lin2	13746783.4	647692409							0.9910		0.9900
MCPP	1337642 824737	1204326 752954	920038 626459	861654	Qua	2721482.84	861840.685	-1328.2955						1.0000		0.9900
MCPA	1972671 1112742	1696601 1016205	1251266 846637	1160924	Qua	4402587.17	1146461.77	-1722.9397						1.0000		0.9900
Dichlorprop	235682862 185477530	224575271 171039346	185558344 146033709	185356288	Lin2	3609155.29	169525541							0.9900		0.9900
2,4-D	248444667 211458330	239507349 194761771	204725415 168062394	209776624	Lin2	2967638.00	193453777							0.9920		0.9900
Pentachlorophenol	2841631946 2349281638	2654122985 2161707562	2202321672 1927542612	2271597126	Lin2	37115799.5	2128366293							0.9940		0.9900
Silvex (2,4,5-TP)	1134564188 940478850	1071739563 860918768	899036725 757537394	914471269	Lin2	15077624.1	852690846							0.9930		0.9900
2,4,5-T	1032504846 899250620	969695707 813907871	843215997 735035725	872969588	Lin2	11318551.4	815355121							0.9940		0.9900
2,4-DB	157929433 141997815	162817926 133222895	138407124 112937708	137661391	Lin2	1640354.75	131143181							0.9900		0.9900
Dinoseb	673448635 523110279	604815782 472465817	520543795 429080599	507982851	Lin2	10234791.3	473563076							0.9950		0.9900
2,4-Dichlorophenylacetic acid	265127802 205102261	250938039 187041772	206802496 159063970	203976362	Qua	1929209.42	217707442	-32186914						0.9990		0.9900

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-109117-1 Analy Batch No.: 415109

SDG No.:

Instrument ID: SGC_M GC Column: CLP1 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/16/2018 14:58 Calibration End Date: 05/16/2018 16:58 Calibration ID: 32395

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-415109/9	05160009.D
Level 2	STD2 280-415109/8	05160008.D
Level 3	STD3 280-415109/7	05160007.D
Level 4	STD4 280-415109/6	05160006.D
Level 5	STD5 280-415109/5	05160005.D
Level 6	STD6 280-415109/4	05160004.D
Level 7	STD7 280-415109/3	05160003.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Dalapon	Lin2	13304047 202489458	25248639 352524971	53018662	108434096	158562891	0.0453 0.905	0.0905 1.81	0.226	0.453	0.679
Dicamba	Lin2	42971058 620946908	80915150 1078321942	166003230	334371456	507113391	0.0475 0.949	0.0949 1.90	0.237	0.475	0.712
MCPP	Qua	6303920 70969049	11351282 118092876	21679359	40607260	58301160	4.71 94.3	9.43 189	23.6	47.1	70.7
MCPA	Qua	9269916 95506381	15945235 159139673	29399557	54553812	78434448	4.70 94.0	9.40 188	23.5	47.0	70.5
Dichlorprop	Lin2	11232056 163026153	21405392 278384060	44216234	88336173	132590931	0.0477 0.953	0.0953 1.91	0.238	0.477	0.715
2,4-D	Lin2	11680626 183134493	22520876 316058139	48125827	98626480	149125701	0.0470 0.940	0.0940 1.88	0.235	0.470	0.705
Pentachlorophenol	Lin2	135652405 2063890295	253402392 3680642617	525666654	1084403678	1682232483	0.0477 0.955	0.0955 1.91	0.239	0.477	0.716
Silvex (2,4,5-TP)	Lin2	54459081 826482017	102886998 1454471796	215768814	438946209	677144772	0.0480 0.960	0.0960 1.92	0.240	0.480	0.720
2,4,5-T	Lin2	49426007 779235396	92838667 1407446406	201823749	417890542	645706908	0.0479 0.957	0.0957 1.91	0.239	0.479	0.718
2,4-DB	Lin2	7510729 126714957	15486427 214841401	32911484	65468316	101295916	0.0476 0.951	0.0951 1.90	0.238	0.476	0.713
Dinoseb	Lin2	32131918 450850506	57714546 818900323	124182229	242371318	374383488	0.0477 0.954	0.0954 1.91	0.239	0.477	0.716
2,4-Dichlorophenylacetic acid	Qua	12301930 173574764	23287050 295222729	47978179	94645032	142751174	0.0464 0.928	0.0928 1.86	0.232	0.464	0.696

Curve Type Legend:

Lin2 = Linear 1/conc^2
Qua = Quadratic

Calibration / Dalapon

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

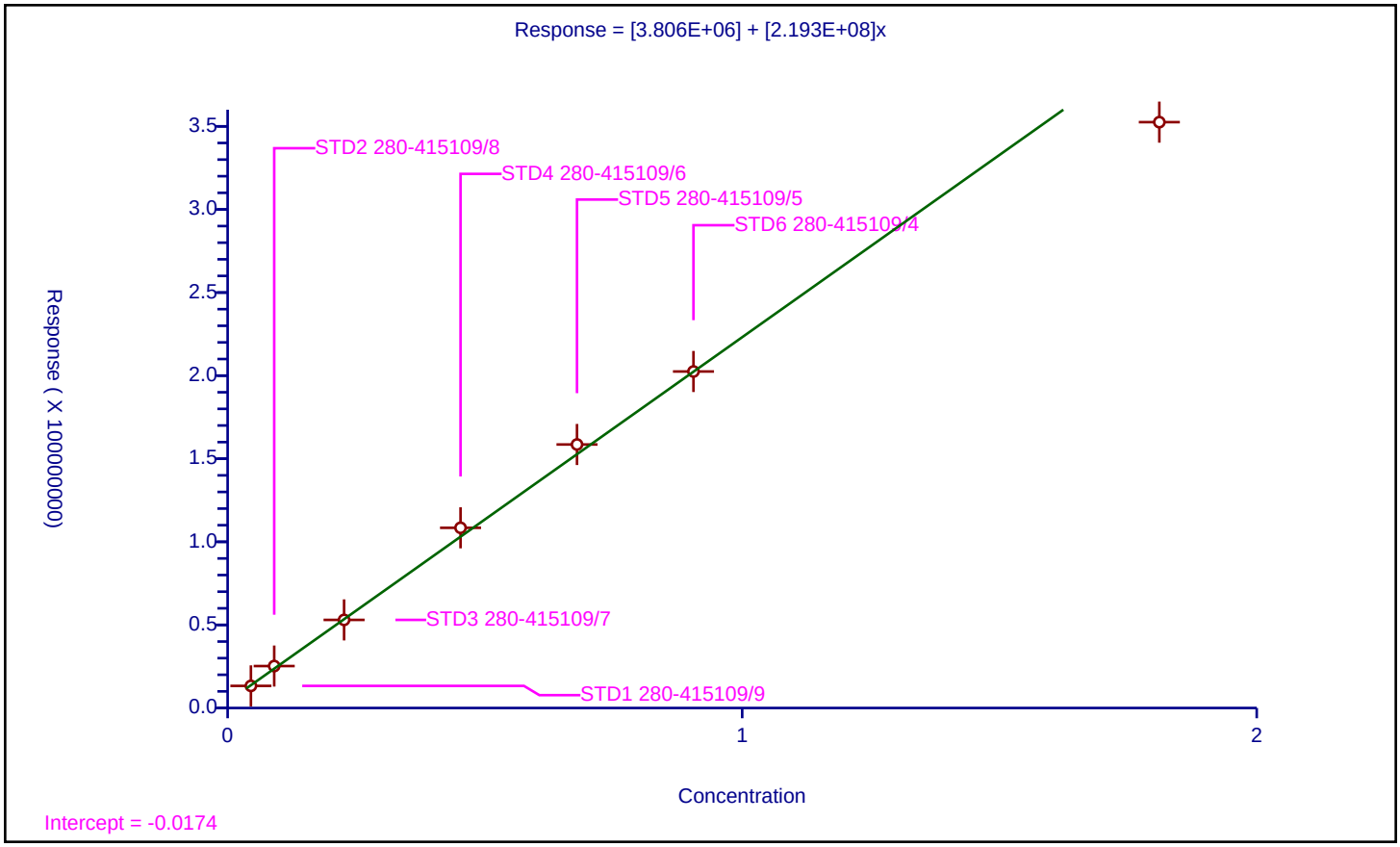
Curve Coefficients

Intercept:	3.806E+06
Slope:	2.193E+08

Error Coefficients

Standard Error:	21900000
Relative Standard Error:	7.4
Correlation Coefficient:	0.992
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.045268	13304047.0			293898426.023085	Y
2	STD2 280-415109/8	0.090535	25248639.0			278882631.026675	Y
3	STD3 280-415109/7	0.226338	53018662.0			234246035.234992	Y
4	STD4 280-415109/6	0.452675	108434096.0			239540721.268018	Y
5	STD5 280-415109/5	0.679013	158562891.0			233519840.945491	Y
6	STD6 280-415109/4	0.90535	202489458.0			223658759.595736	Y
7	STD7 280-415109/3	1.8107	352524971.0			194689882.918208	Y



Calibration / 2,4-Dichlorophenylacetic acid

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

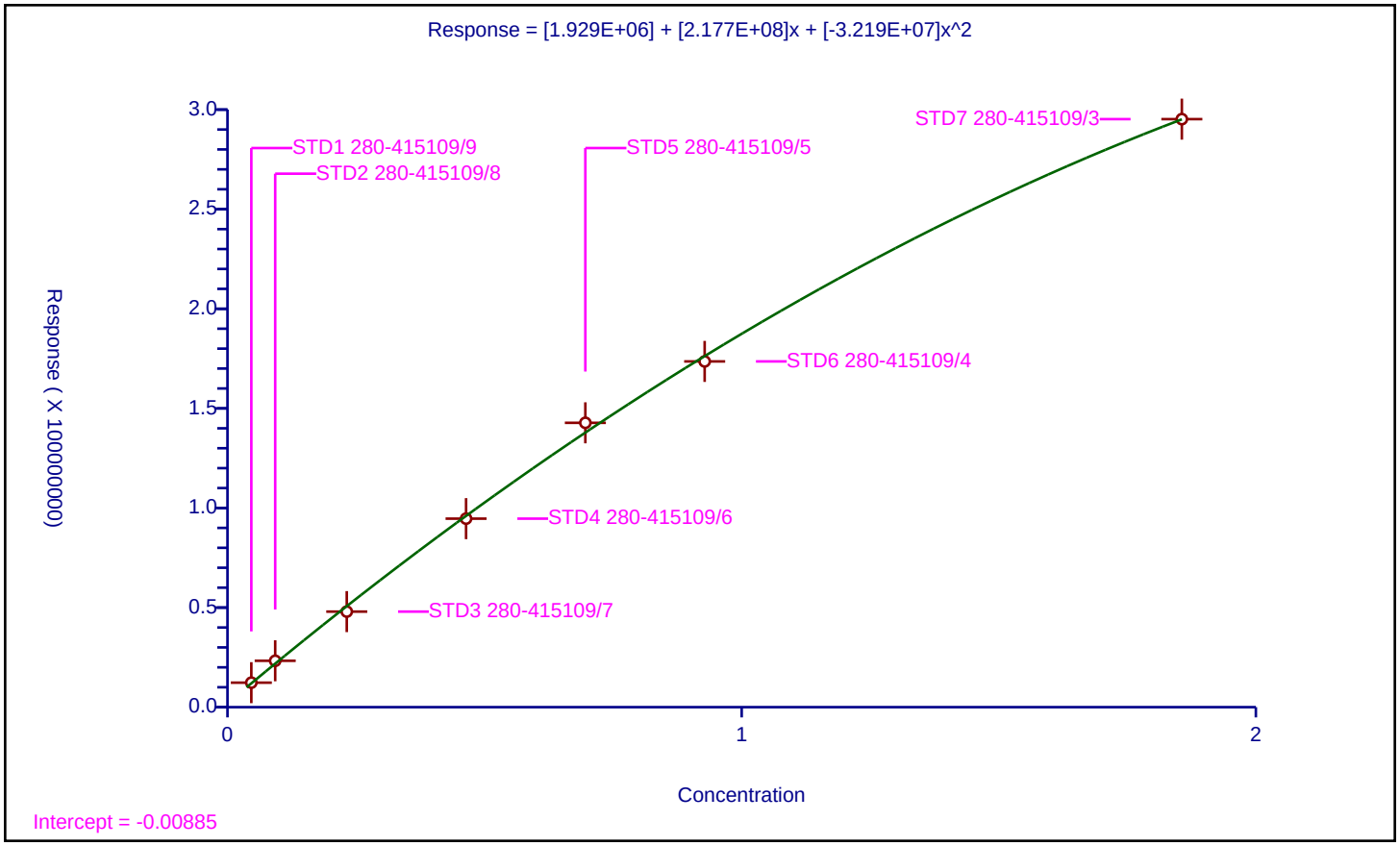
Curve Coefficients

Intercept:	1.929E+06
Slope:	2.177E+08
Second Order:	-3.219E+07

Error Coefficients

Standard Error:	3260000
Relative Standard Error:	5.5
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.0464	12301930.0			265127801.724138	Y
2	STD2 280-415109/8	0.0928	23287050.0			250938038.793103	Y
3	STD3 280-415109/7	0.232	47978179.0			206802495.689655	Y
4	STD4 280-415109/6	0.464	94645032.0			203976362.068965	Y
5	STD5 280-415109/5	0.696	142751174.0			205102261.494253	Y
6	STD6 280-415109/4	0.928	173574764.0			187041771.551724	Y
7	STD7 280-415109/3	1.856	295222729.0			159063970.366379	Y



Calibration / Dicamba

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

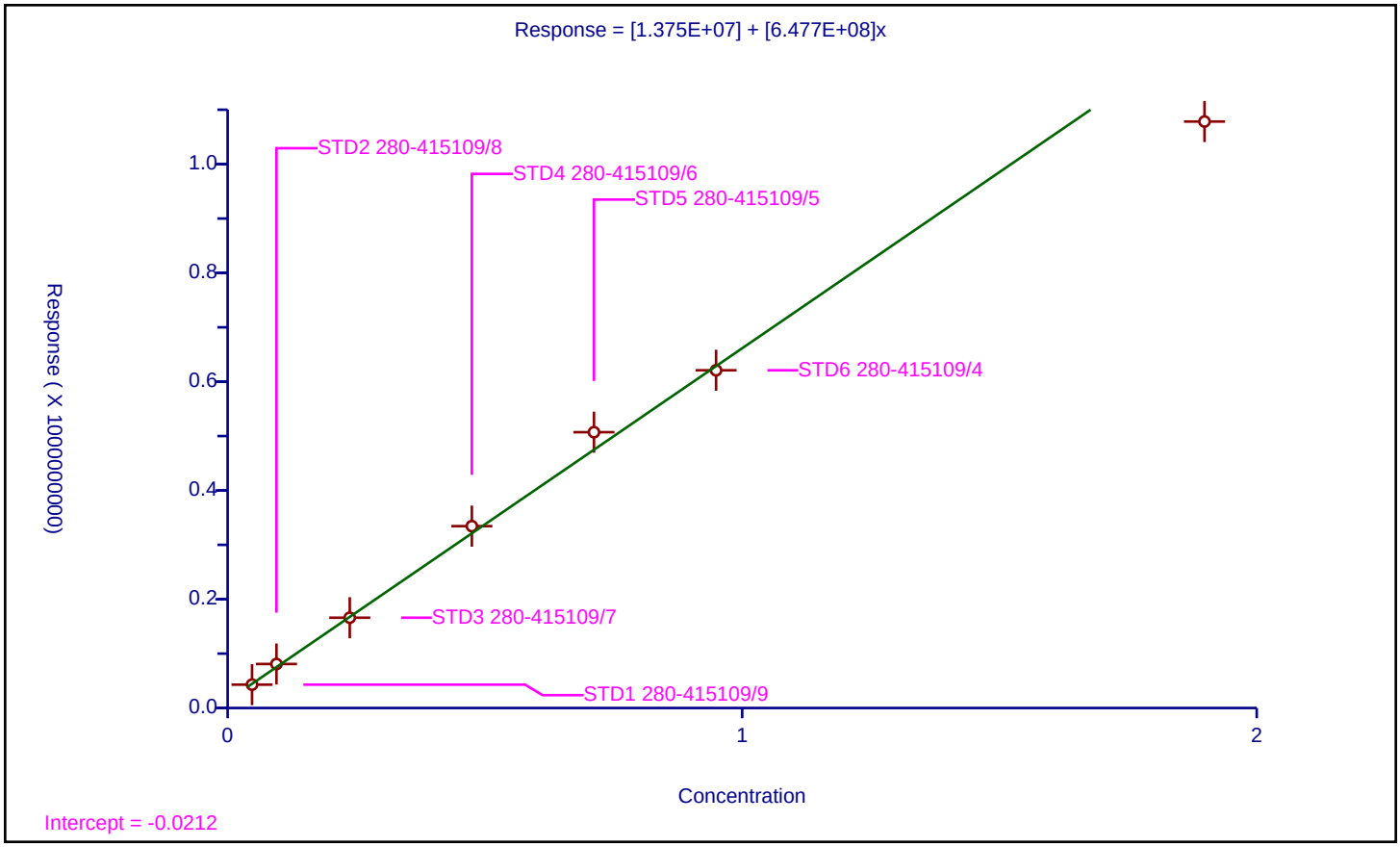
Curve Coefficients

Intercept:	1.375E+07
Slope:	6.477E+08

Error Coefficients

Standard Error:	75600000
Relative Standard Error:	8.5
Correlation Coefficient:	0.990
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047463	42971058.0			905368617.329471	Y
2	STD2 280-415109/8	0.094925	80915150.0			852411377.403213	Y
3	STD3 280-415109/7	0.237313	166003230.0			699513215.696603	Y
4	STD4 280-415109/6	0.474625	334371456.0			704496088.490914	Y
5	STD5 280-415109/5	0.711938	507113391.0			712300435.080327	Y
6	STD6 280-415109/4	0.94925	620946908.0			654144754.279694	Y
7	STD7 280-415109/3	1.8985	1078321942.0			567986274.427179	Y



Calibration / MCPP

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

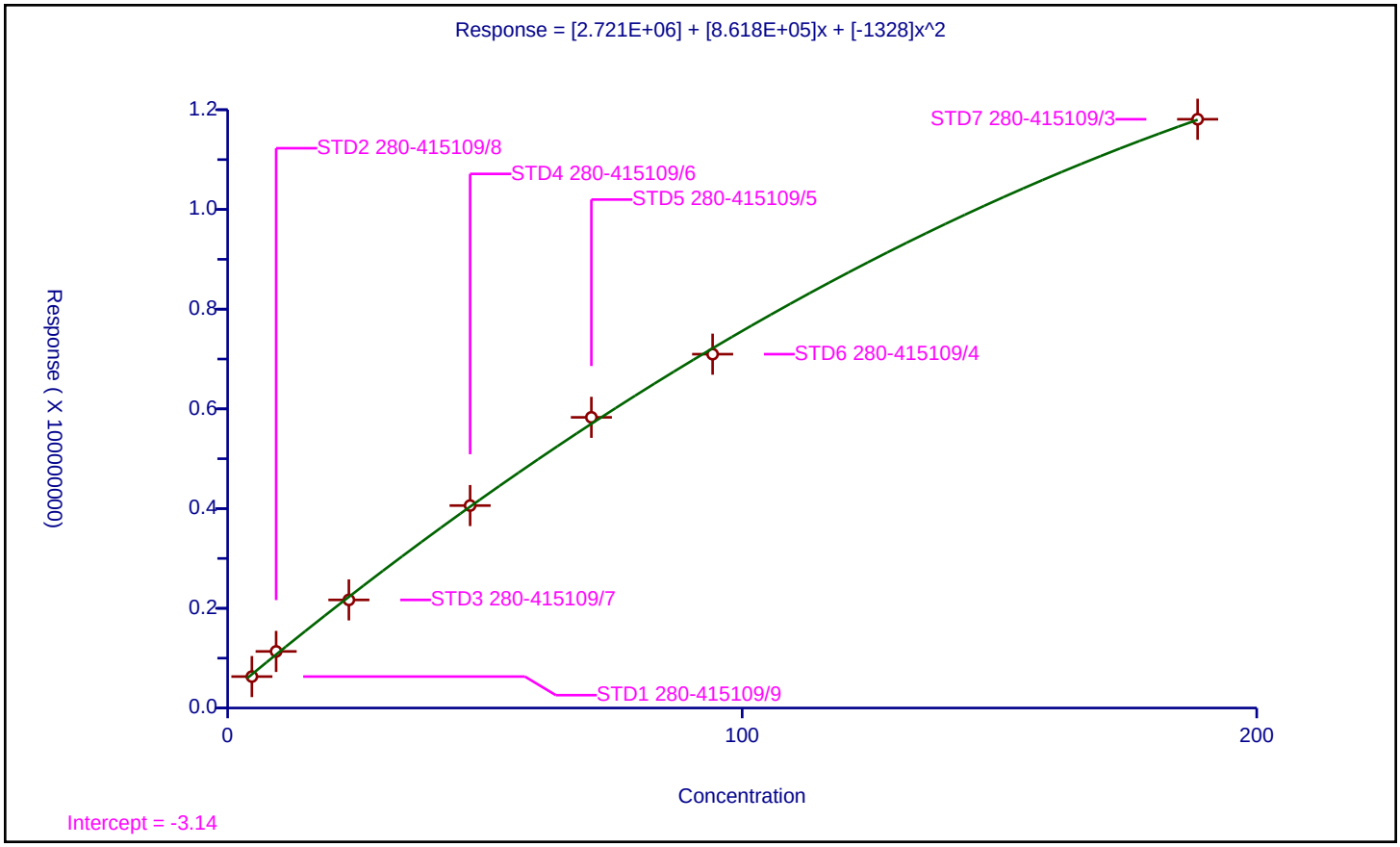
Curve Coefficients

Intercept:	2.721E+06
Slope:	8.618E+05
Second Order:	-1328

Error Coefficients

Standard Error:	1010000
Relative Standard Error:	7.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	4.71271	6303920.0			1337642.248303	Y
2	STD2 280-415109/8	9.42542	11351282.0			1204326.385456	Y
3	STD3 280-415109/7	23.56355	21679359.0			920037.897515	Y
4	STD4 280-415109/6	47.1271	40607260.0			861654.122575	Y
5	STD5 280-415109/5	70.69065	58301160.0			824736.510415	Y
6	STD6 280-415109/4	94.2542	70969049.0			752953.70392	Y
7	STD7 280-415109/3	188.5084	118092876.0			626459.489338	Y



Calibration / MCPA

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

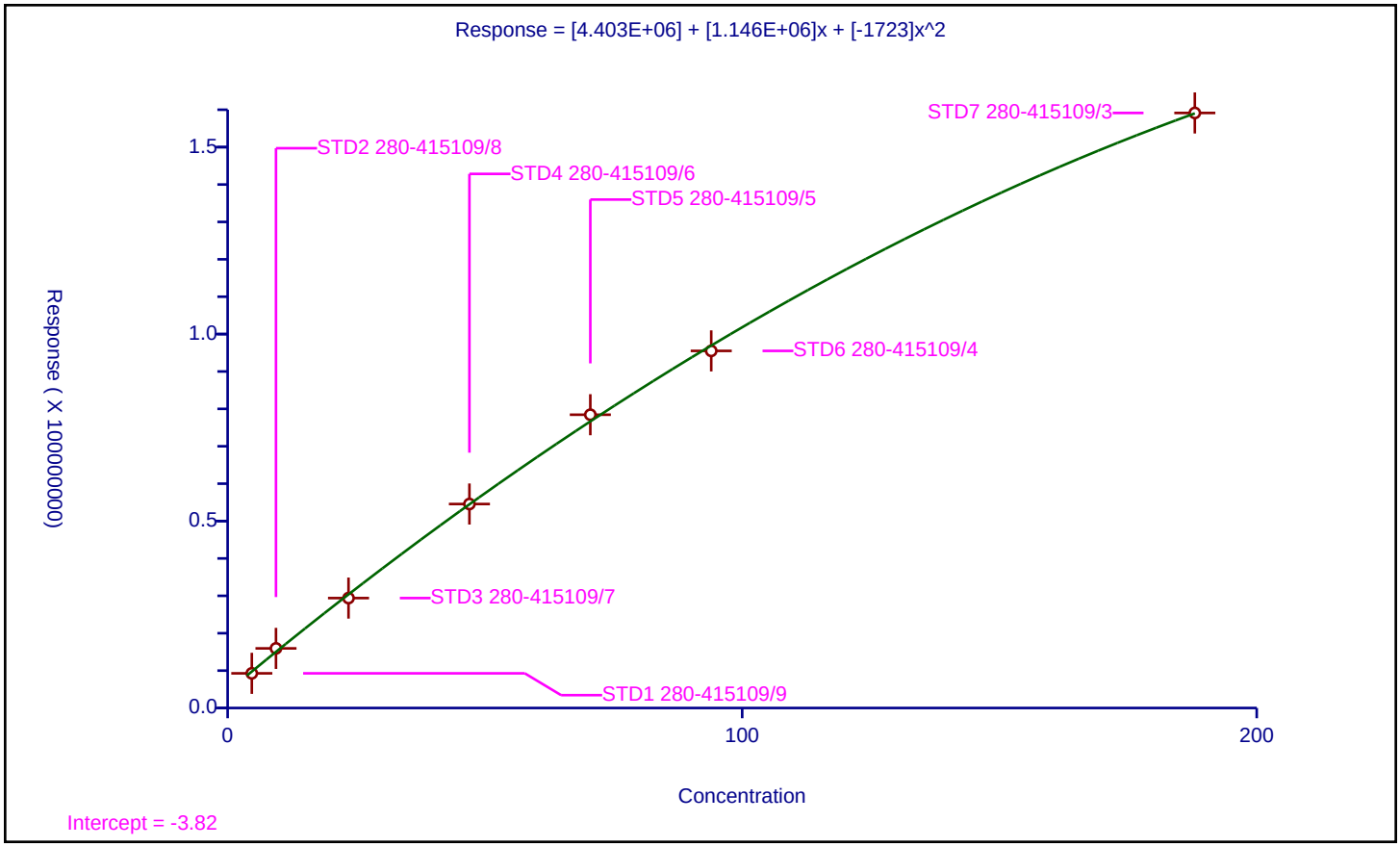
Curve Coefficients

Intercept:	4.403E+06
Slope:	1.146E+06
Second Order:	-1723

Error Coefficients

Standard Error:	1350000
Relative Standard Error:	6.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	4.69917	9269916.0			1972670.918481	Y
2	STD2 280-415109/8	9.39834	15945235.0			1696601.208298	Y
3	STD3 280-415109/7	23.49585	29399557.0			1251265.946965	Y
4	STD4 280-415109/6	46.9917	54553812.0			1160924.418568	Y
5	STD5 280-415109/5	70.48755	78434448.0			1112741.867181	Y
6	STD6 280-415109/4	93.9834	95506381.0			1016204.787228	Y
7	STD7 280-415109/3	187.9668	159139673.0			846637.134856	Y



Calibration / Dichlorprop

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

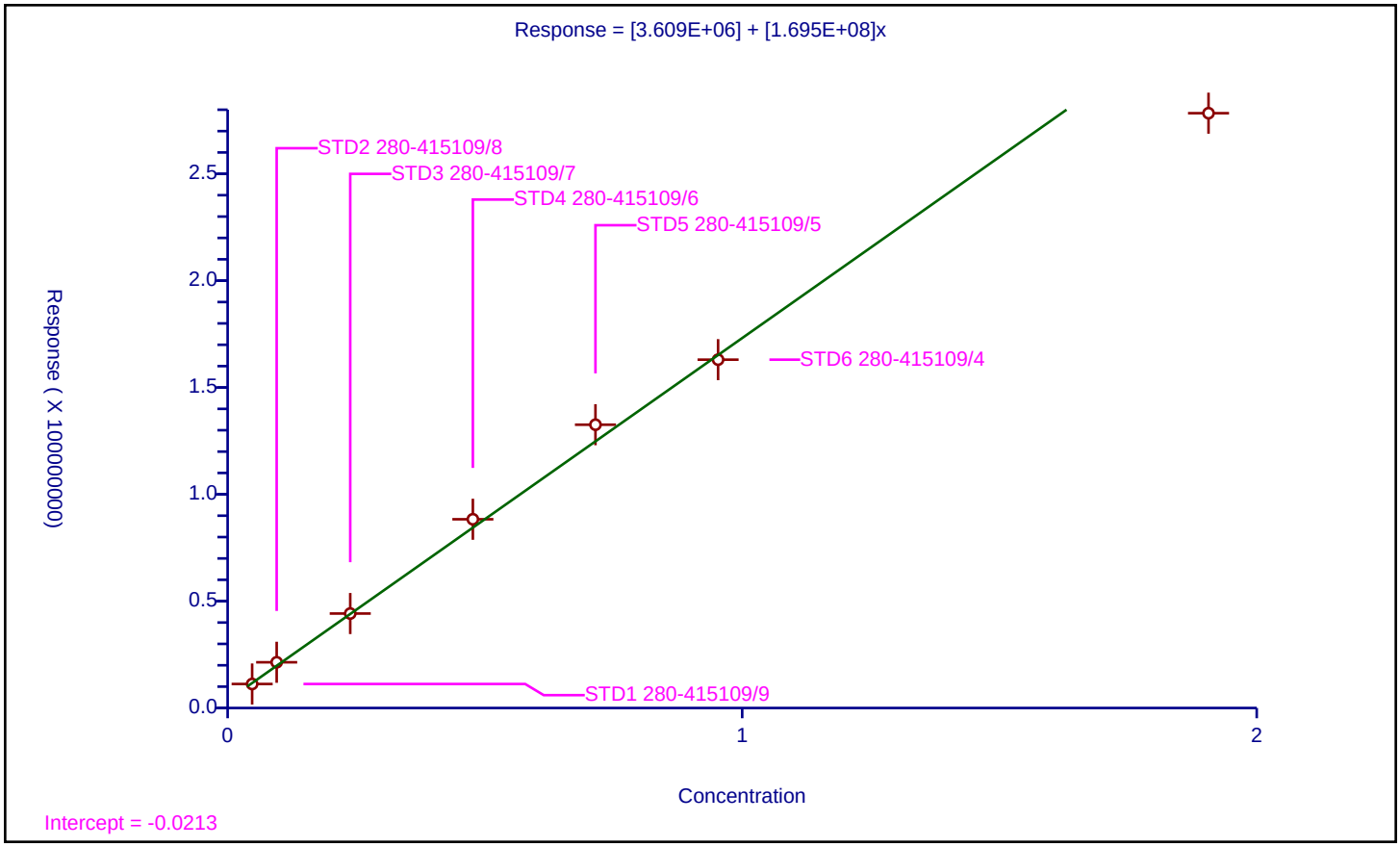
Curve Coefficients

Intercept:	3.609E+06
Slope:	1.695E+08

Error Coefficients

Standard Error:	22000000
Relative Standard Error:	9.2
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047658	11232056.0			235682862.088863	Y
2	STD2 280-415109/8	0.095315	21405392.0			224575271.468289	Y
3	STD3 280-415109/7	0.238288	44216234.0			185558344.436867	Y
4	STD4 280-415109/6	0.476575	88336173.0			185356288.097361	Y
5	STD5 280-415109/5	0.714863	132590931.0			185477530.294287	Y
6	STD6 280-415109/4	0.95315	163026153.0			171039346.3778	Y
7	STD7 280-415109/3	1.9063	278384060.0			146033709.279757	Y



Calibration / 2,4-D

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

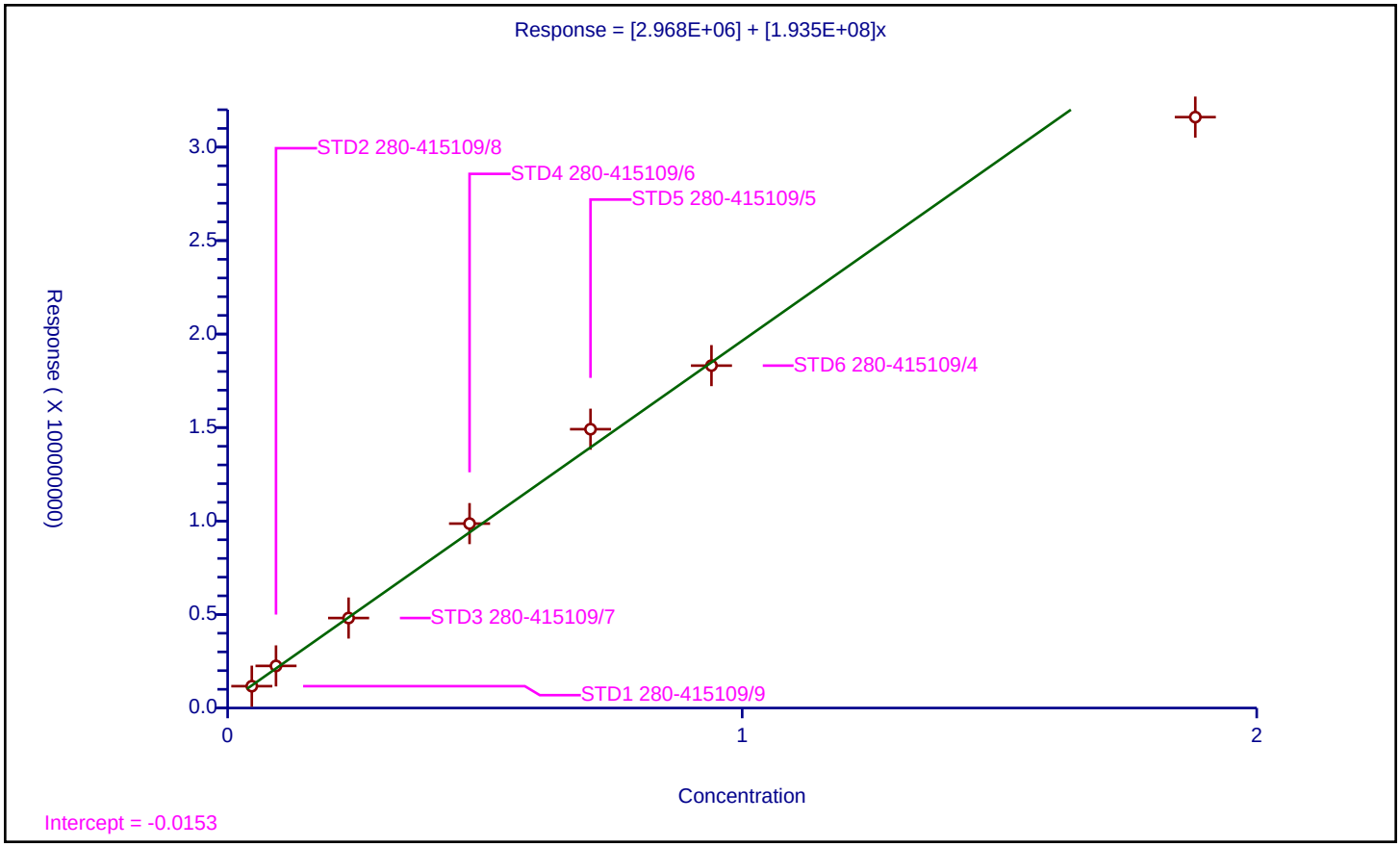
Curve Coefficients

Intercept:	2.968E+06
Slope:	1.935E+08

Error Coefficients

Standard Error:	23200000
Relative Standard Error:	8.3
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047015	11680626.0			248444666.595767	Y
2	STD2 280-415109/8	0.09403	22520876.0			239507348.718494	Y
3	STD3 280-415109/7	0.235075	48125827.0			204725415.292992	Y
4	STD4 280-415109/6	0.47015	98626480.0			209776624.481548	Y
5	STD5 280-415109/5	0.705225	149125701.0			211458330.320111	Y
6	STD6 280-415109/4	0.9403	183134493.0			194761770.711475	Y
7	STD7 280-415109/3	1.8806	316058139.0			168062394.44858	Y



Calibration / Pentachlorophenol

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

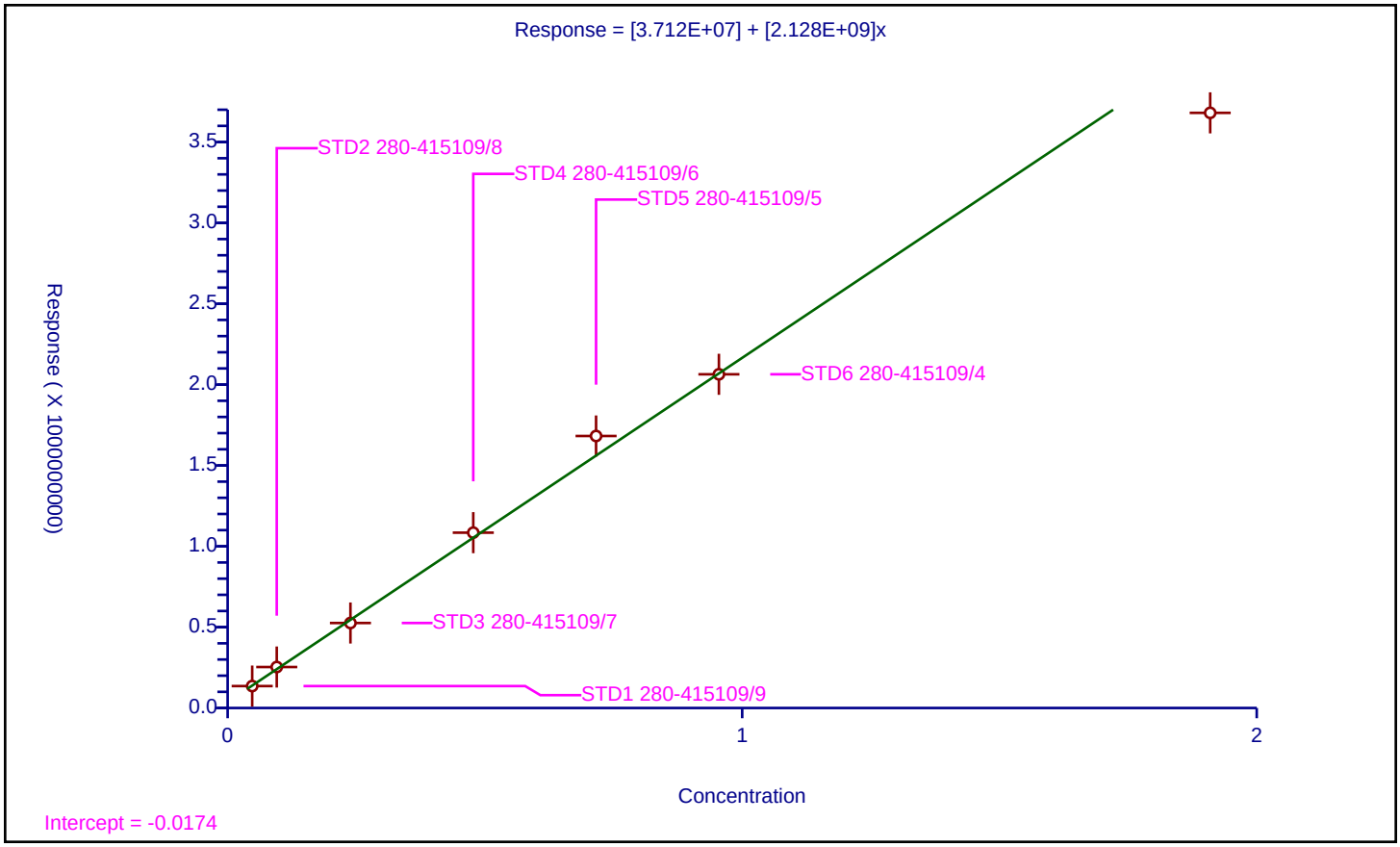
Curve Coefficients

Intercept:	3.712E+07
Slope:	2.128E+09

Error Coefficients

Standard Error:	197000000
Relative Standard Error:	7.0
Correlation Coefficient:	0.992
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047738	135652405.0			2841631945.53548	Y
2	STD2 280-415109/8	0.095475	253402392.0			2654122985.07463	Y
3	STD3 280-415109/7	0.238688	525666654.0			2202321671.64179	Y
4	STD4 280-415109/6	0.477375	1084403678.0			2271597125.9492	Y
5	STD5 280-415109/5	0.716063	1682232483.0			2349281638.12516	Y
6	STD6 280-415109/4	0.95475	2063890295.0			2161707562.18906	Y
7	STD7 280-415109/3	1.9095	3680642617.0			1927542611.67845	Y



Calibration / Silvex (2,4,5-TP)

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

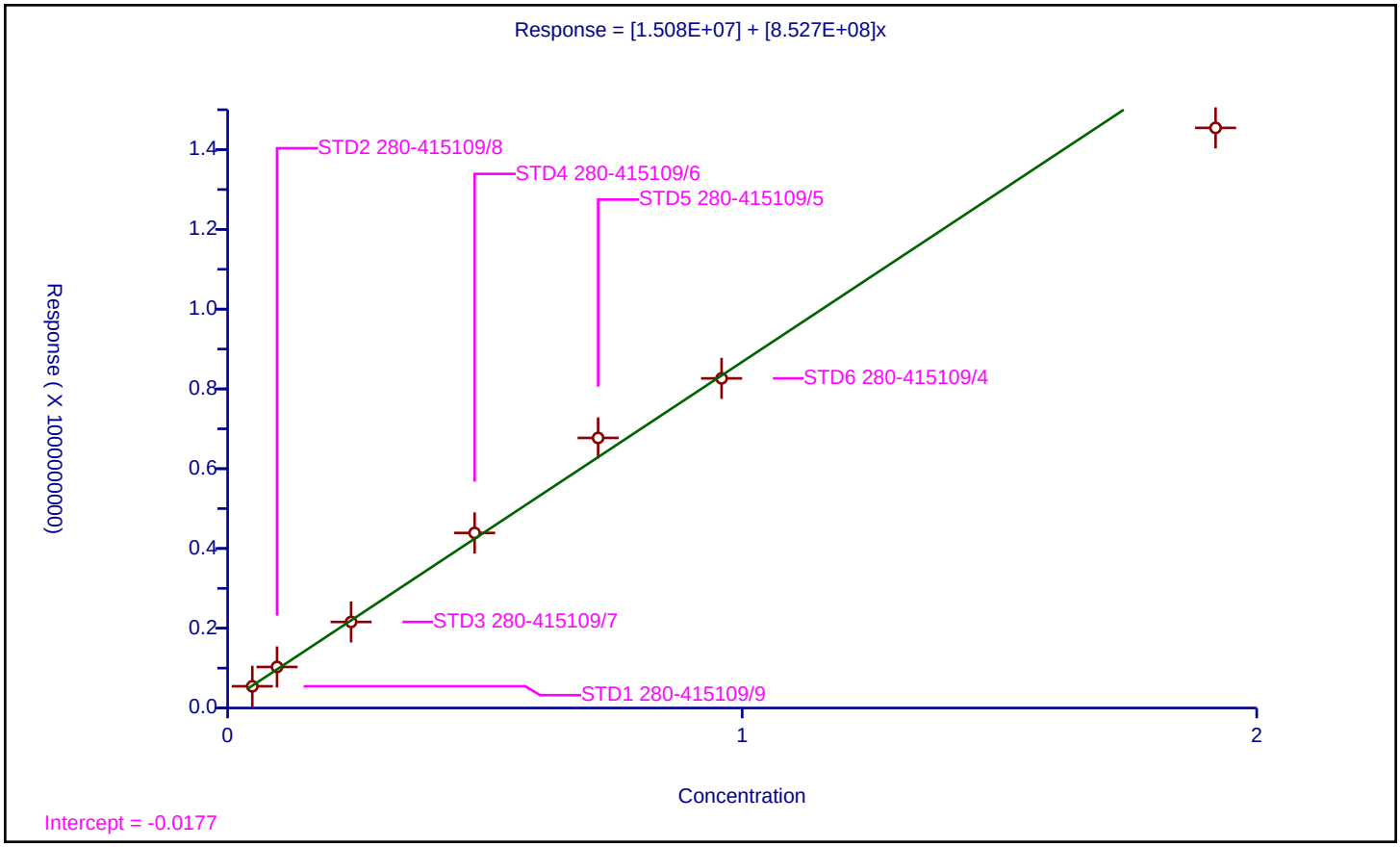
Curve Coefficients

Intercept:	1.508E+07
Slope:	8.527E+08

Error Coefficients

Standard Error:	91400000
Relative Standard Error:	7.6
Correlation Coefficient:	0.991
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.048	54459081.0			1134564187.5	Y
2	STD2 280-415109/8	0.096	102886998.0			1071739562.5	Y
3	STD3 280-415109/7	0.24	215768814.0			899036725.0	Y
4	STD4 280-415109/6	0.48	438946209.0			914471268.75	Y
5	STD5 280-415109/5	0.72	677144772.0			940478850.0	Y
6	STD6 280-415109/4	0.96	826482017.0			860918767.708333	Y
7	STD7 280-415109/3	1.92	1454471796.0			757537393.75	Y



Calibration / 2,4,5-T

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

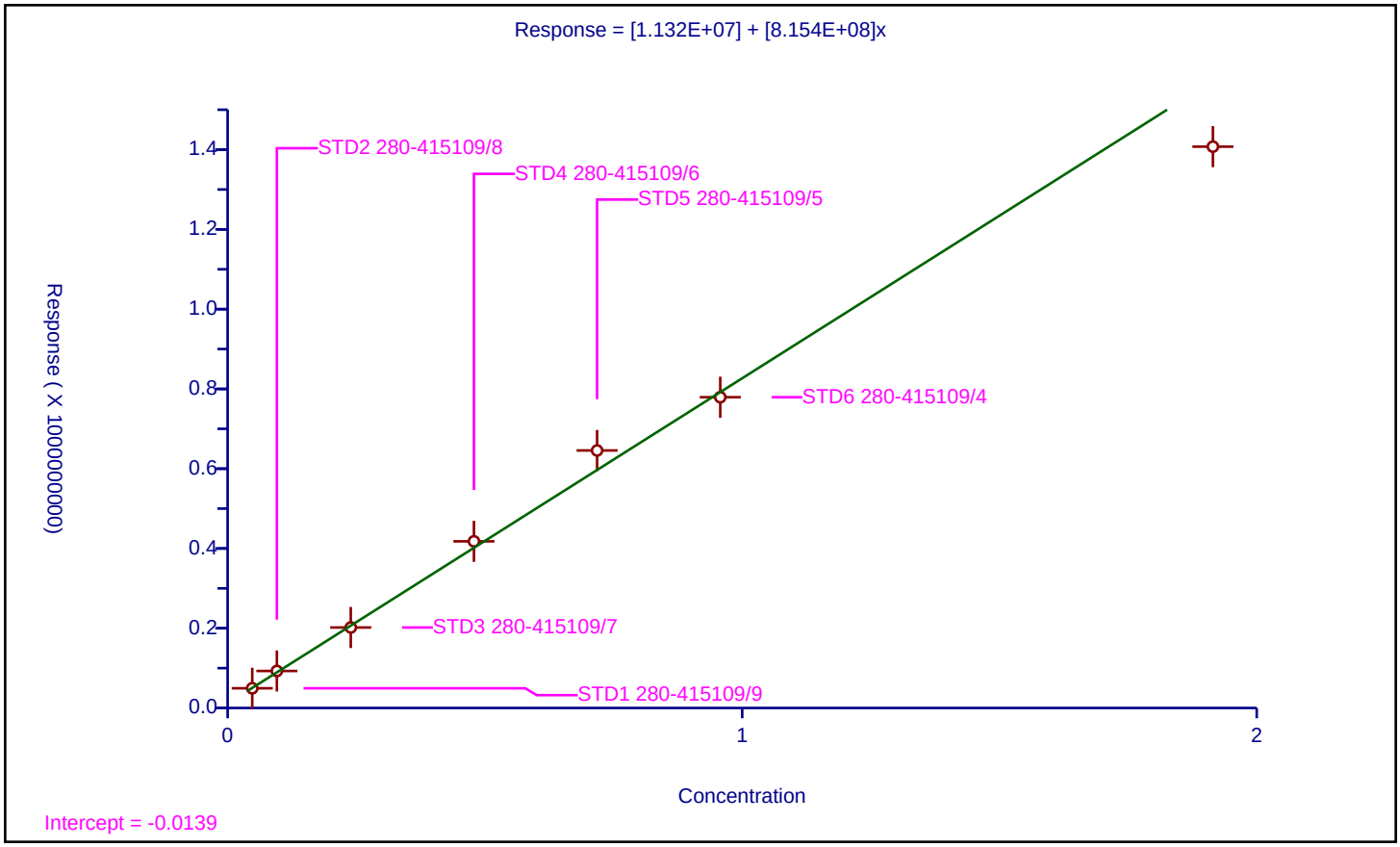
Curve Coefficients

Intercept:	1.132E+07
Slope:	8.154E+08

Error Coefficients

Standard Error:	77600000
Relative Standard Error:	6.8
Correlation Coefficient:	0.992
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.04787	49426007.0			1032504846.45916	Y
2	STD2 280-415109/8	0.09574	92838667.0			969695707.123459	Y
3	STD3 280-415109/7	0.23935	201823749.0			843215997.493211	Y
4	STD4 280-415109/6	0.4787	417890542.0			872969588.46877	Y
5	STD5 280-415109/5	0.71805	645706908.0			899250620.430332	Y
6	STD6 280-415109/4	0.9574	779235396.0			813907871.318153	Y
7	STD7 280-415109/3	1.9148	1407446406.0			735035724.879883	Y



Calibration / 2,4-DB

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

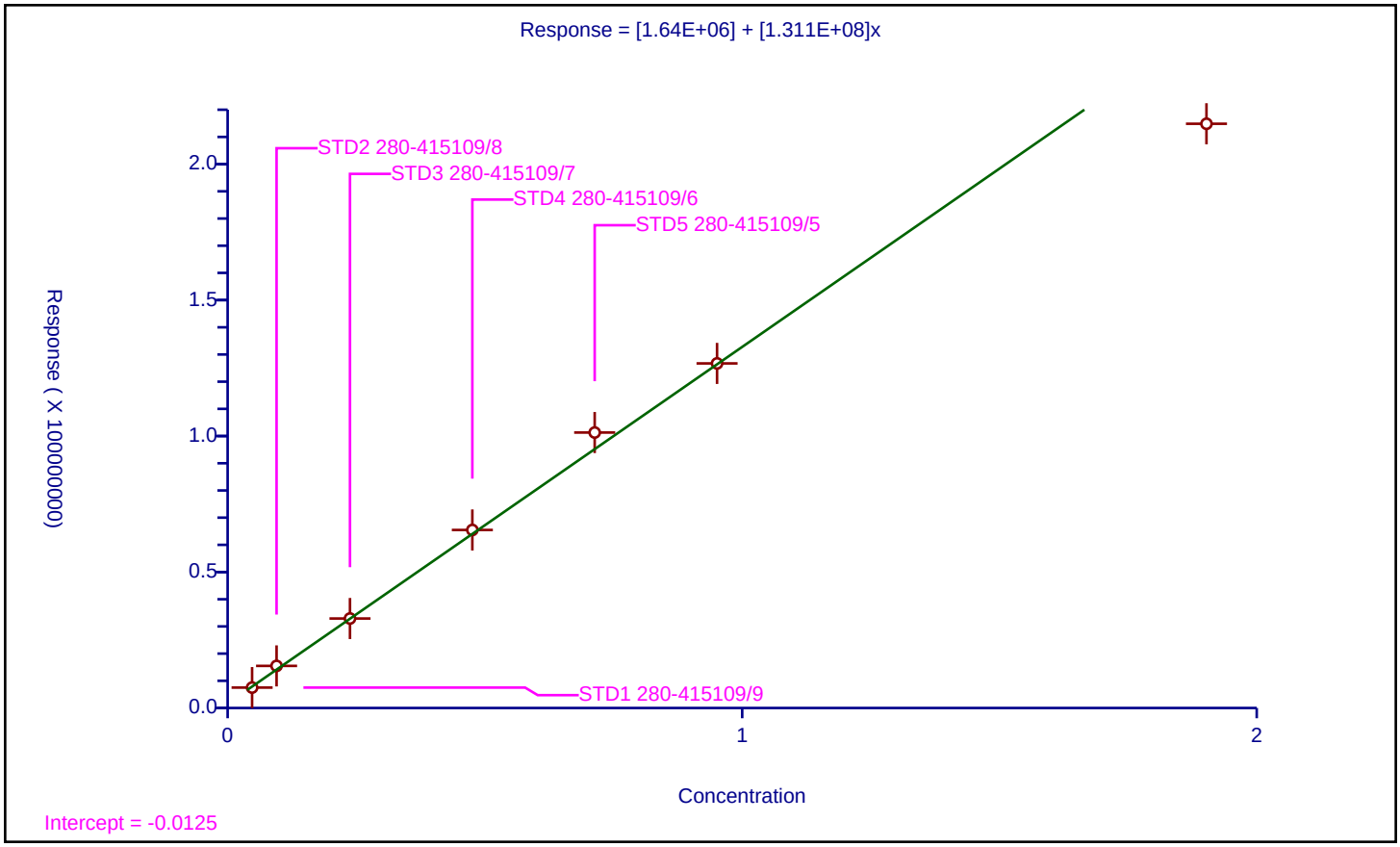
Curve Coefficients

Intercept:	1.64E+06
Slope:	1.311E+08

Error Coefficients

Standard Error:	16500000
Relative Standard Error:	9.1
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047558	7510729.0			157929432.791883	Y
2	STD2 280-415109/8	0.095115	15486427.0			162817925.668927	Y
3	STD3 280-415109/7	0.237788	32911484.0			138407124.00778	Y
4	STD4 280-415109/6	0.475575	65468316.0			137661390.9478	Y
5	STD5 280-415109/5	0.713363	101295916.0			141997814.575339	Y
6	STD6 280-415109/4	0.95115	126714957.0			133222895.442359	Y
7	STD7 280-415109/3	1.9023	214841401.0			112937707.511959	Y



Calibration / Dinoseb

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

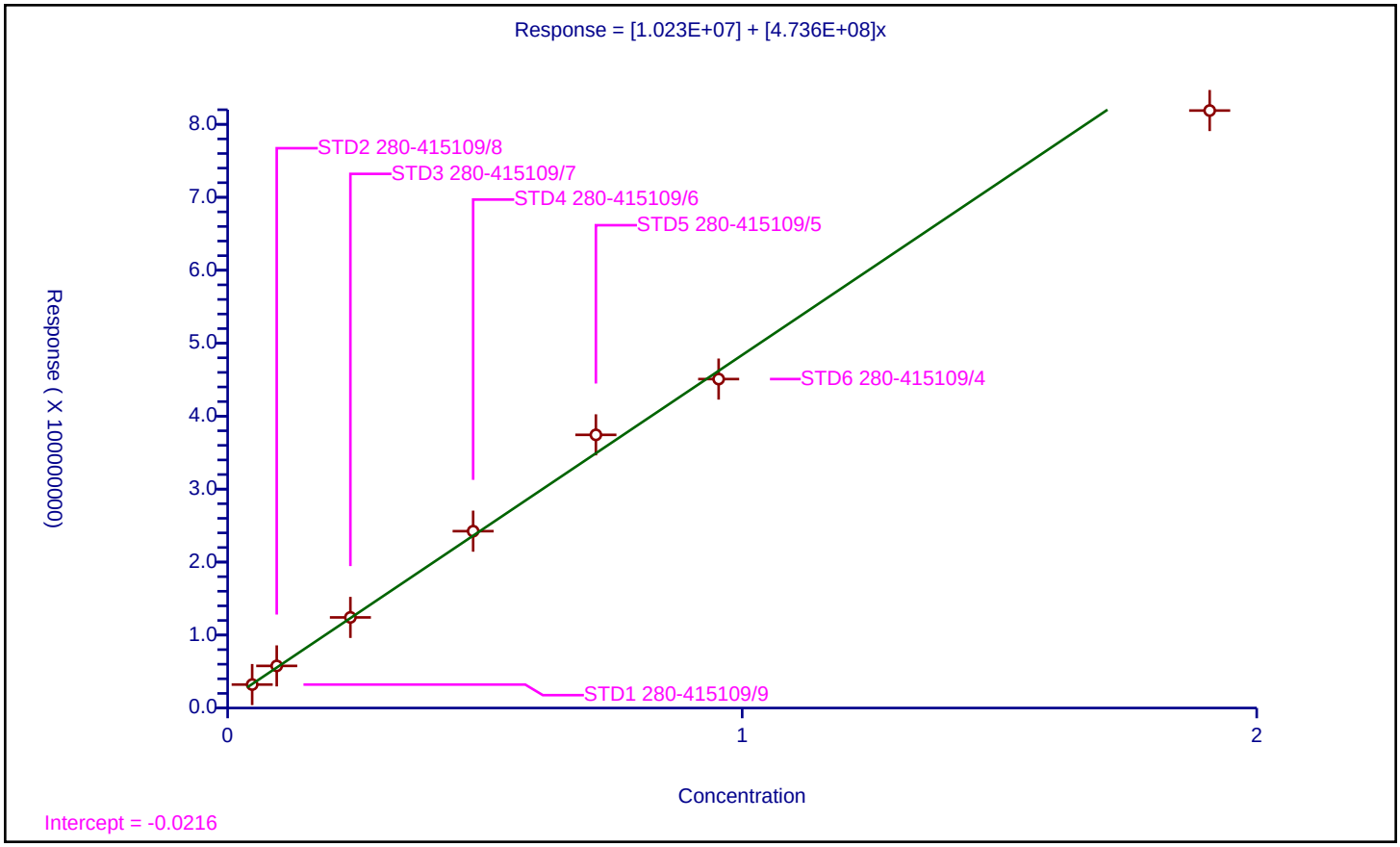
Curve Coefficients

Intercept:	1.023E+07
Slope:	4.736E+08

Error Coefficients

Standard Error:	44400000
Relative Standard Error:	6.6
Correlation Coefficient:	0.994
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047713	32131918.0			673448635.053707	Y
2	STD2 280-415109/8	0.095425	57714546.0			604815782.027771	Y
3	STD3 280-415109/7	0.238563	124182229.0			520543794.603091	Y
4	STD4 280-415109/6	0.477125	242371318.0			507982851.454021	Y
5	STD5 280-415109/5	0.715688	374383488.0			523110279.276919	Y
6	STD6 280-415109/4	0.95425	450850506.0			472465817.133875	Y
7	STD7 280-415109/3	1.9085	818900323.0			429080598.899659	Y



FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1 Analy Batch No.: 415109

SDG No.:

Instrument ID: SGC_M GC Column: CLP2 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/16/2018 14:58 Calibration End Date: 05/16/2018 16:58 Calibration ID: 32396

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-415109/9	05160009.D
Level 2	STD2 280-415109/8	05160008.D
Level 3	STD3 280-415109/7	05160007.D
Level 4	STD4 280-415109/6	05160006.D
Level 5	STD5 280-415109/5	05160005.D
Level 6	STD6 280-415109/4	05160004.D
Level 7	STD7 280-415109/3	05160003.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Dalapon	1.124	1.125	1.126	1.126	1.126	1.125	1.126				1.096 - 1.156	1.125
Dicamba	4.794	4.794	4.794	4.794	4.794	4.794	4.795				4.764 - 4.824	4.794
MCPP	4.930	4.930	4.930	4.931	4.933	4.934	4.938				4.901 - 4.961	4.932
MCPA	5.134	5.133	5.133	5.135	5.136	5.138	5.143				5.105 - 5.165	5.136
Dichlorprop	5.396	5.396	5.396	5.396	5.396	5.397	5.396				5.366 - 5.426	5.396
2,4-D	5.624	5.623	5.623	5.622	5.622	5.623	5.622				5.592 - 5.652	5.623
Pentachlorophenol	5.855	5.855	5.856	5.856	5.856	5.858	5.857				5.756 - 5.956	5.856
Silvex (2,4,5-TP)	6.139	6.138	6.138	6.139	6.138	6.138	6.139				6.109 - 6.169	6.138
2,4,5-T	6.364	6.364	6.363	6.363	6.363	6.363	6.362				6.333 - 6.393	6.363
2,4-DB	6.638	6.639	6.638	6.638	6.636	6.638	6.637				6.608 - 6.668	6.638
Dinoseb	6.763	6.764	6.764	6.764	6.764	6.764	6.764				6.734 - 6.794	6.764
2,4-Dichlorophenylacetic acid	4.630	4.630	4.629	4.629	4.629	4.628	4.630				4.599 - 4.659	4.629

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-109117-1 Analy Batch No.: 415109

SDG No.:

Instrument ID: SGC_M GC Column: CLP2 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/16/2018 14:58 Calibration End Date: 05/16/2018 16:58 Calibration ID: 32396

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-415109/9	05160009.D
Level 2	STD2 280-415109/8	05160008.D
Level 3	STD3 280-415109/7	05160007.D
Level 4	STD4 280-415109/6	05160006.D
Level 5	STD5 280-415109/5	05160005.D
Level 6	STD6 280-415109/4	05160004.D
Level 7	STD7 280-415109/3	05160003.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
Dalapon	299569404 225086515	276047992 214386021	232583310 184177395	232746964	Qua	2177644.74	242133326	-32662427						1.0000		0.9900
Dicamba	675296034 486619486	626113058 443344198	482123512 381982362	487087246	Qua	7082898.03	508391743	-68625588						0.9990		0.9900
MCPP	761949 515226	730770 470617	559074 389325	529905	Qua	1297706.04	545112.707	-864.20955						0.9990		0.9900
MCPA	1312057 774005	1134953 706798	891325 575764	836236	Qua	2816965.04	820939.886	-1388.5171						1.0000		0.9900
Dichlorprop	166454388 129906681	155669937 119468223	125924474 102589883	129187610	Lin2	2593556.54	117647751							0.9910		0.9900
2,4-D	193696693 165110275	187534563 151853955	155846913 131310048	163366083	Lin2	2336732.16	150316303							0.9910		0.9900
Pentachlorophenol	2023343221 1683108997	1937813606 1540638712	1592389032 1310264864	1665093974	Lin2	27269220.3	1520501277							0.9900		0.9900
Silvex (2,4,5-TP)	804758771 679502986	765304823 623363765	627554808 537432499	662912617	Lin2	10311535.1	611959193							0.9910		0.9900
2,4,5-T	773993608 657855452	777437832 614424210	604498651 526178084	636971456	Qua	-1814681.4	706977999	-93663773						0.9990		0.9900
2,4-DB	137299206 107772968	107037449 92598617	94446289 83958719	97814883	Lin2	2067497.44	90930974.7							0.9900		0.9900
Dinoseb	357316846 401183715	345323154 351610878	326748408 324382313	361390359	Lin2	-41016.742	352803551							0.9920		0.9900
2,4-Dichlorophenylacetic acid	238830237 163748099	215910647 144375064	164147573 123842454	161327272	Qua	3252148.80	167929973	-24764170						0.9980		0.9900

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-109117-1 Analy Batch No.: 415109

SDG No.:

Instrument ID: SGC_M GC Column: CLP2 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/16/2018 14:58 Calibration End Date: 05/16/2018 16:58 Calibration ID: 32396

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-415109/9	05160009.D
Level 2	STD2 280-415109/8	05160008.D
Level 3	STD3 280-415109/7	05160007.D
Level 4	STD4 280-415109/6	05160006.D
Level 5	STD5 280-415109/5	05160005.D
Level 6	STD6 280-415109/4	05160004.D
Level 7	STD7 280-415109/3	05160003.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Dalapon	Qua	13560758 194094384	24992005 333490009	52642325	105358732	152836557	0.0453 0.905	0.0905 1.81	0.226	0.453	0.679
Dicamba	Qua	32051238 420844480	59433782 725193515	114413936	231183784	346442660	0.0475 0.949	0.0949 1.90	0.237	0.475	0.712
MCPP	Qua	3590844 44357639	6887818 73391120	13173761	24972886	36421628	4.71 94.3	9.43 189	23.6	47.1	70.7
MCPA	Qua	6165577 66427281	10666674 108224516	20942443	39296128	54557734	4.70 94.0	9.40 188	23.5	47.0	70.5
Dichlorprop	Lin2	7932800 113871137	14837680 195567094	30006228	61567585	92865415	0.0477 0.953	0.0953 1.91	0.238	0.477	0.715
2,4-D	Lin2	9106650 142788274	17633875 246941677	36635713	76806564	116439894	0.0470 0.940	0.0940 1.88	0.235	0.470	0.705
Pentachlorophenol	Lin2	96589347 1470924810	185012754 2501950757	380083357	794874236	1205211236	0.0477 0.955	0.0955 1.91	0.239	0.477	0.716
Silvex (2,4,5-TP)	Lin2	38628421 598429214	73469263 1031870398	150613154	318198056	489242150	0.0480 0.960	0.0960 1.92	0.240	0.480	0.720
2,4,5-T	Qua	37051074 588249739	74431898 1007525795	144686752	304918236	472373107	0.0479 0.957	0.0957 1.91	0.239	0.479	0.718
2,4-DB	Lin2	6529607 88075175	10180867 159714671	22458147	46518313	76881194	0.0476 0.951	0.0951 1.90	0.238	0.476	0.713
Dinoseb	Lin2	17048480 335524680	32952462 619083644	77949917	172428375	287122170	0.0477 0.954	0.0954 1.91	0.239	0.477	0.716
2,4-Dichlorophenylacetic acid	Qua	11081723 133980059	20036508 229851595	38082237	74855854	113968677	0.0464 0.928	0.0928 1.86	0.232	0.464	0.696

Curve Type Legend:

Lin2 = Linear 1/conc^2
Qua = Quadratic

Calibration / Dalapon

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

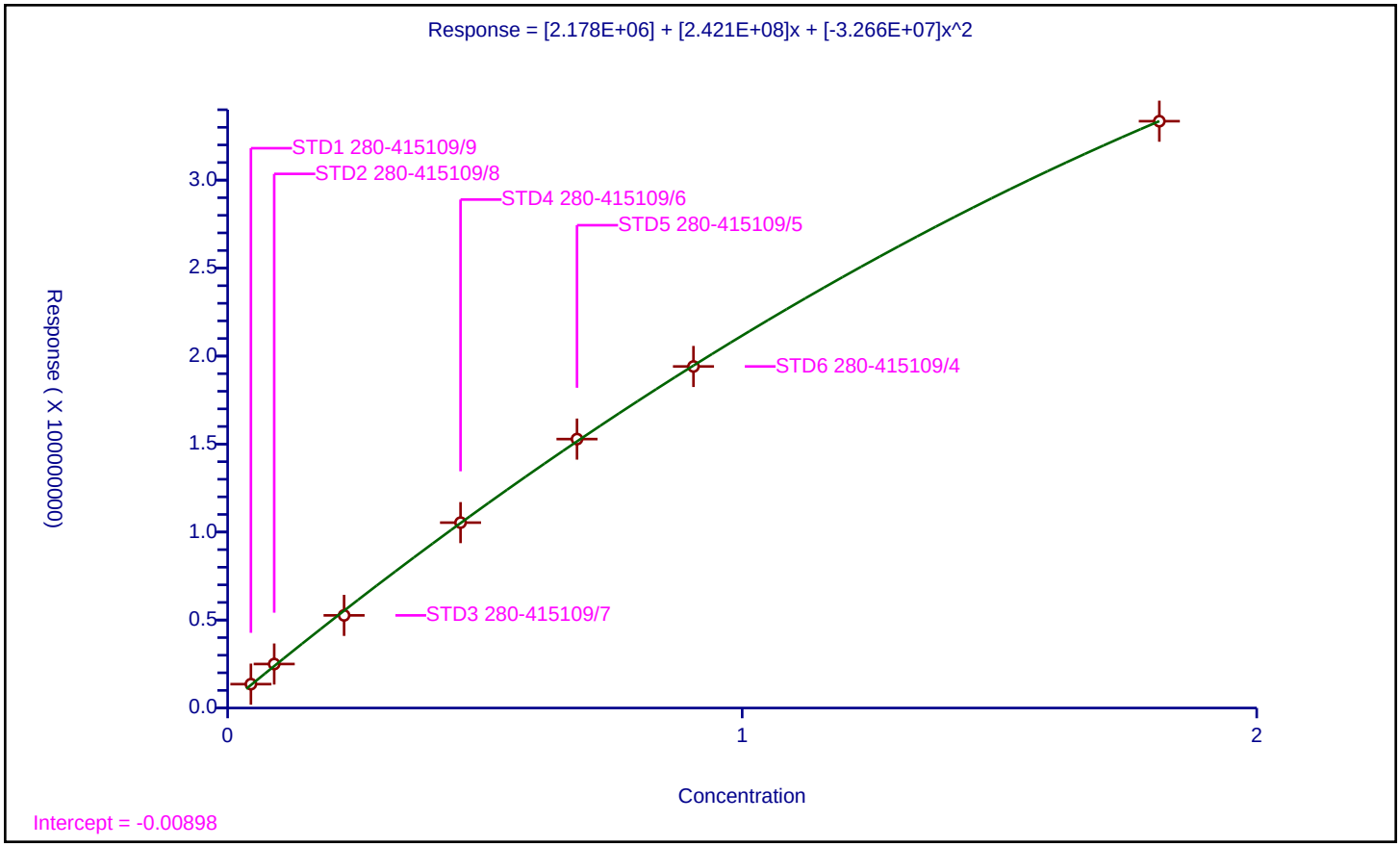
Curve Coefficients

Intercept:	2.178E+06
Slope:	2.421E+08
Second Order:	-3.266E+07

Error Coefficients

Standard Error:	1640000
Relative Standard Error:	4.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.045268	13560758.0			299569404.097863	Y
2	STD2 280-415109/8	0.090535	24992005.0			276047992.489093	Y
3	STD3 280-415109/7	0.226338	52642325.0			232583310.321975	Y
4	STD4 280-415109/6	0.452675	105358732.0			232746964.157508	Y
5	STD5 280-415109/5	0.679013	152836557.0			225086514.60761	Y
6	STD6 280-415109/4	0.90535	194094384.0			214386020.875904	Y
7	STD7 280-415109/3	1.8107	333490009.0			184177394.930138	Y



Calibration / 2,4-Dichlorophenylacetic acid

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

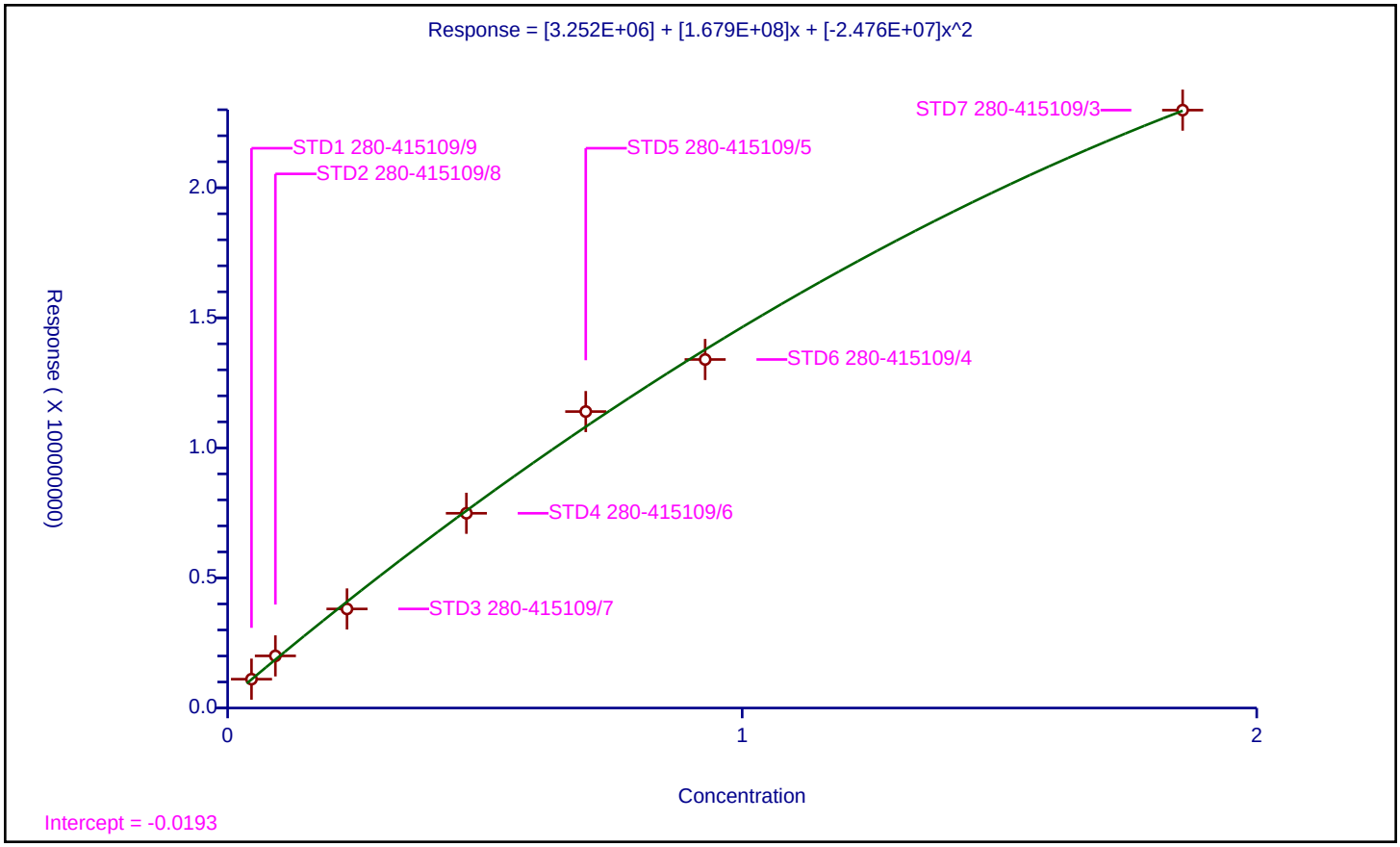
Curve Coefficients

Intercept:	3.252E+06
Slope:	1.679E+08
Second Order:	-2.476E+07

Error Coefficients

Standard Error:	3850000
Relative Standard Error:	7.1
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.0464	11081723.0			238830237.068966	Y
2	STD2 280-415109/8	0.0928	20036508.0			215910646.551724	Y
3	STD3 280-415109/7	0.232	38082237.0			164147573.275862	Y
4	STD4 280-415109/6	0.464	74855854.0			161327271.551724	Y
5	STD5 280-415109/5	0.696	113968677.0			163748099.137931	Y
6	STD6 280-415109/4	0.928	133980059.0			144375063.577586	Y
7	STD7 280-415109/3	1.856	229851595.0			123842454.202586	Y



Calibration / Dicamba

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

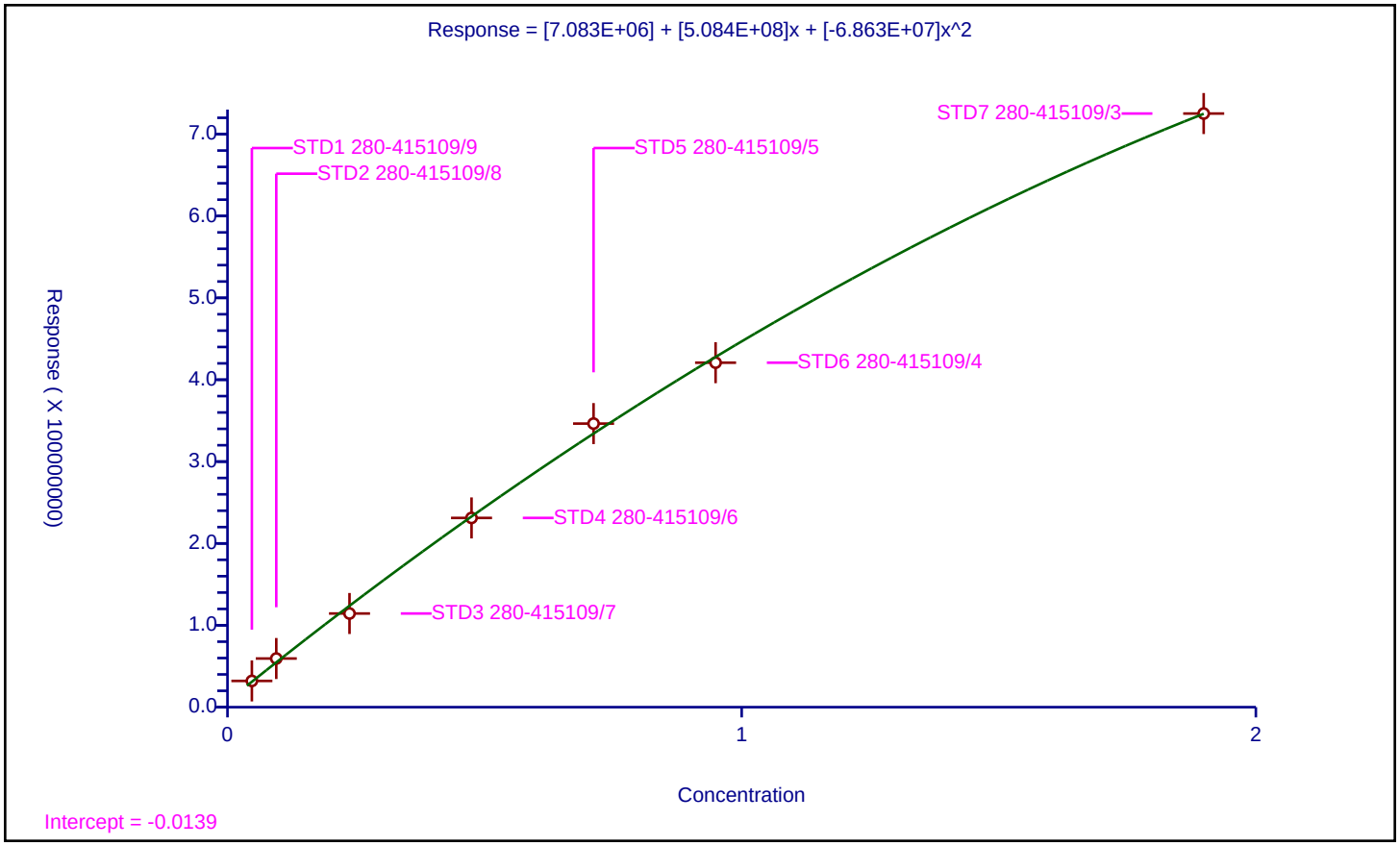
Curve Coefficients

Intercept:	7.083E+06
Slope:	5.084E+08
Second Order:	-6.863E+07

Error Coefficients

Standard Error:	8850000
Relative Standard Error:	7.2
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047463	32051238.0			675296033.710824	Y
2	STD2 280-415109/8	0.094925	59433782.0			626113057.677114	Y
3	STD3 280-415109/7	0.237313	114413936.0			482123512.24651	Y
4	STD4 280-415109/6	0.474625	231183784.0			487087245.720306	Y
5	STD5 280-415109/5	0.711938	346442660.0			486619485.558774	Y
6	STD6 280-415109/4	0.94925	420844480.0			443344198.051093	Y
7	STD7 280-415109/3	1.8985	725193515.0			381982362.391362	Y



Calibration / MCPP

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

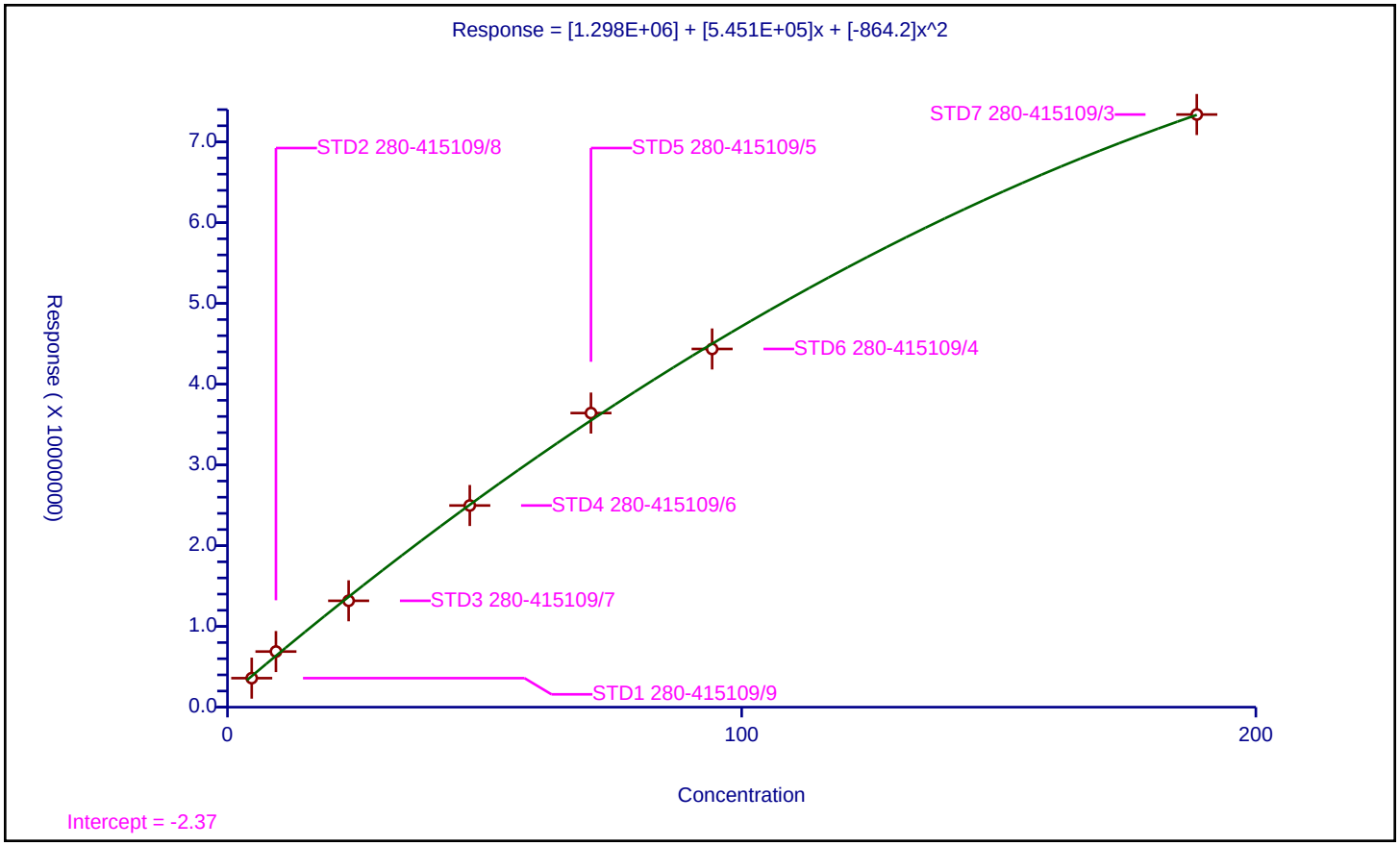
Curve Coefficients

Intercept:	1.298E+06
Slope:	5.451E+05
Second Order:	-864.2

Error Coefficients

Standard Error:	677000
Relative Standard Error:	7.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	4.71271	3590844.0			761948.857451	Y
2	STD2 280-415109/8	9.42542	6887818.0			730770.405987	Y
3	STD3 280-415109/7	23.56355	13173761.0			559073.696451	Y
4	STD4 280-415109/6	47.1271	24972886.0			529905.001581	Y
5	STD5 280-415109/5	70.69065	36421628.0			515225.535485	Y
6	STD6 280-415109/4	94.2542	44357639.0			470617.107779	Y
7	STD7 280-415109/3	188.5084	73391120.0			389325.46242	Y



Calibration / MCPA

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

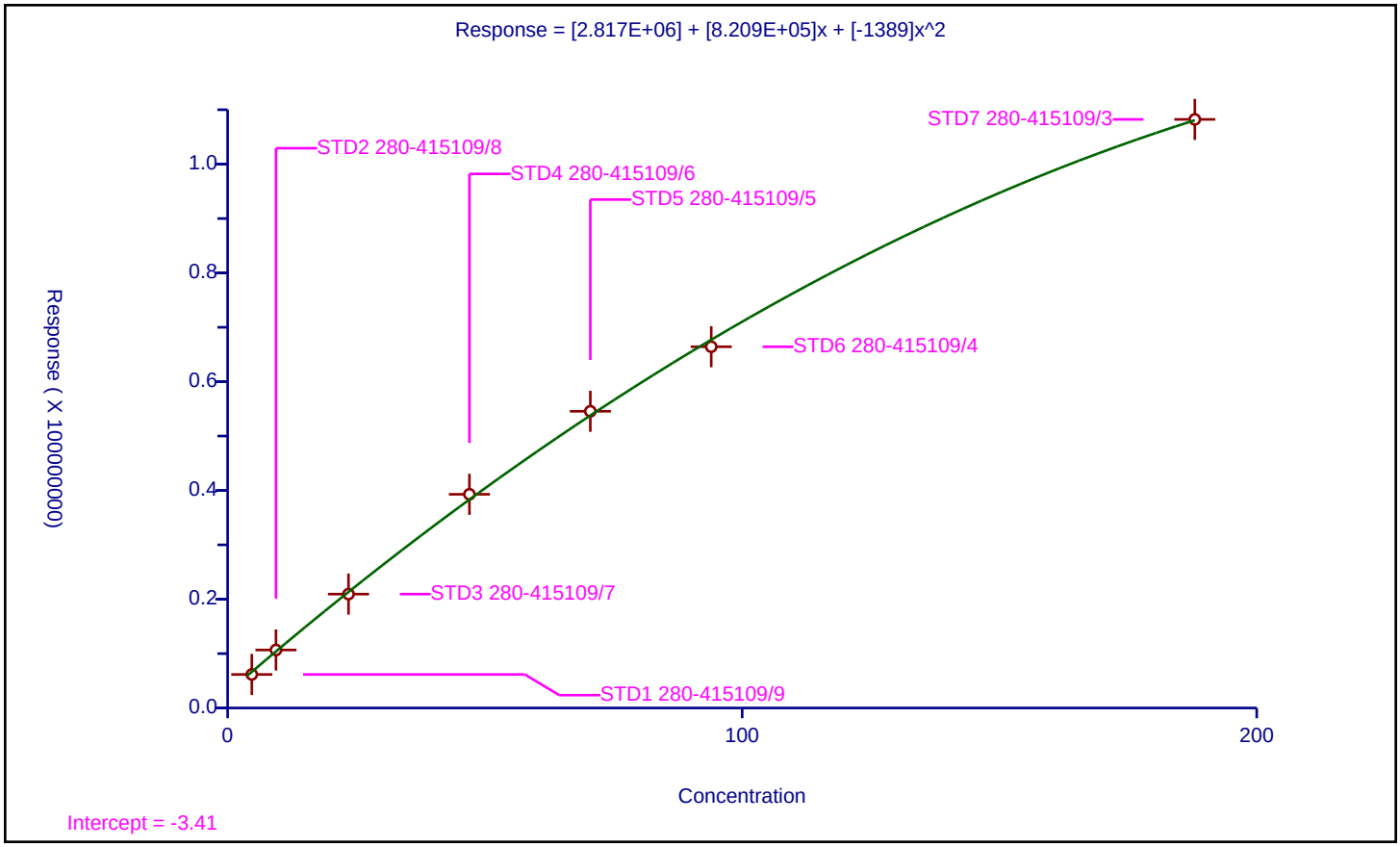
Curve Coefficients

Intercept:	2.817E+06
Slope:	8.209E+05
Second Order:	-1389

Error Coefficients

Standard Error:	955000
Relative Standard Error:	7.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	4.69917	6165577.0			1312056.597229	Y
2	STD2 280-415109/8	9.39834	10666674.0			1134952.981058	Y
3	STD3 280-415109/7	23.49585	20942443.0			891325.19147	Y
4	STD4 280-415109/6	46.9917	39296128.0			836235.505419	Y
5	STD5 280-415109/5	70.48755	54557734.0			774005.25341	Y
6	STD6 280-415109/4	93.9834	66427281.0			706798.01965	Y
7	STD7 280-415109/3	187.9668	108224516.0			575763.996621	Y



Calibration / Dichlorprop

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

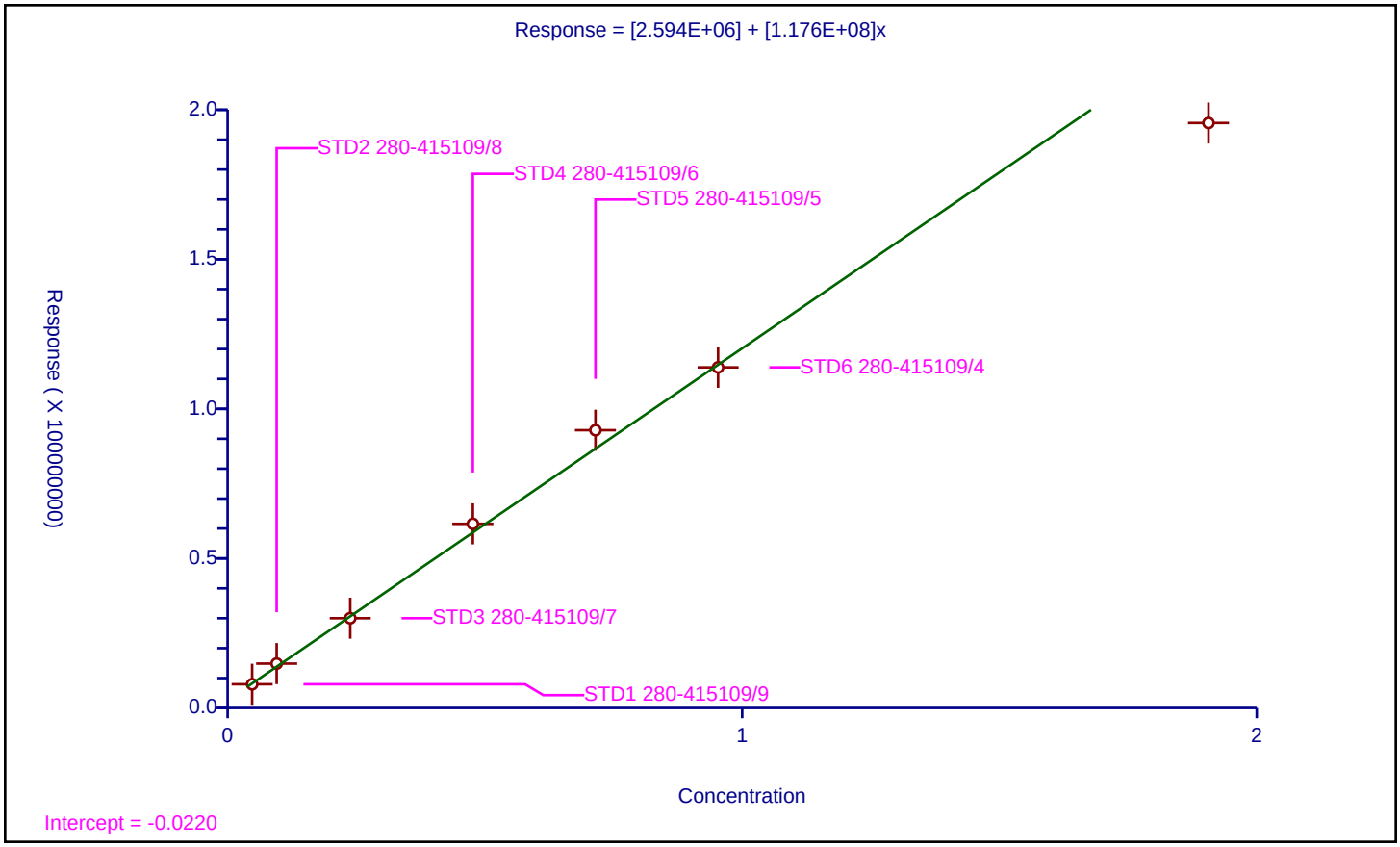
Curve Coefficients

Intercept:	2.594E+06
Slope:	1.176E+08

Error Coefficients

Standard Error:	14300000
Relative Standard Error:	8.8
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047658	7932800.0			166454388.081624	Y
2	STD2 280-415109/8	0.095315	14837680.0			155669936.526255	Y
3	STD3 280-415109/7	0.238288	30006228.0			125924473.587578	Y
4	STD4 280-415109/6	0.476575	61567585.0			129187609.505324	Y
5	STD5 280-415109/5	0.714863	92865415.0			129906681.354806	Y
6	STD6 280-415109/4	0.95315	113871137.0			119468223.259718	Y
7	STD7 280-415109/3	1.9063	195567094.0			102589883.019462	Y



Calibration / 2,4-D

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

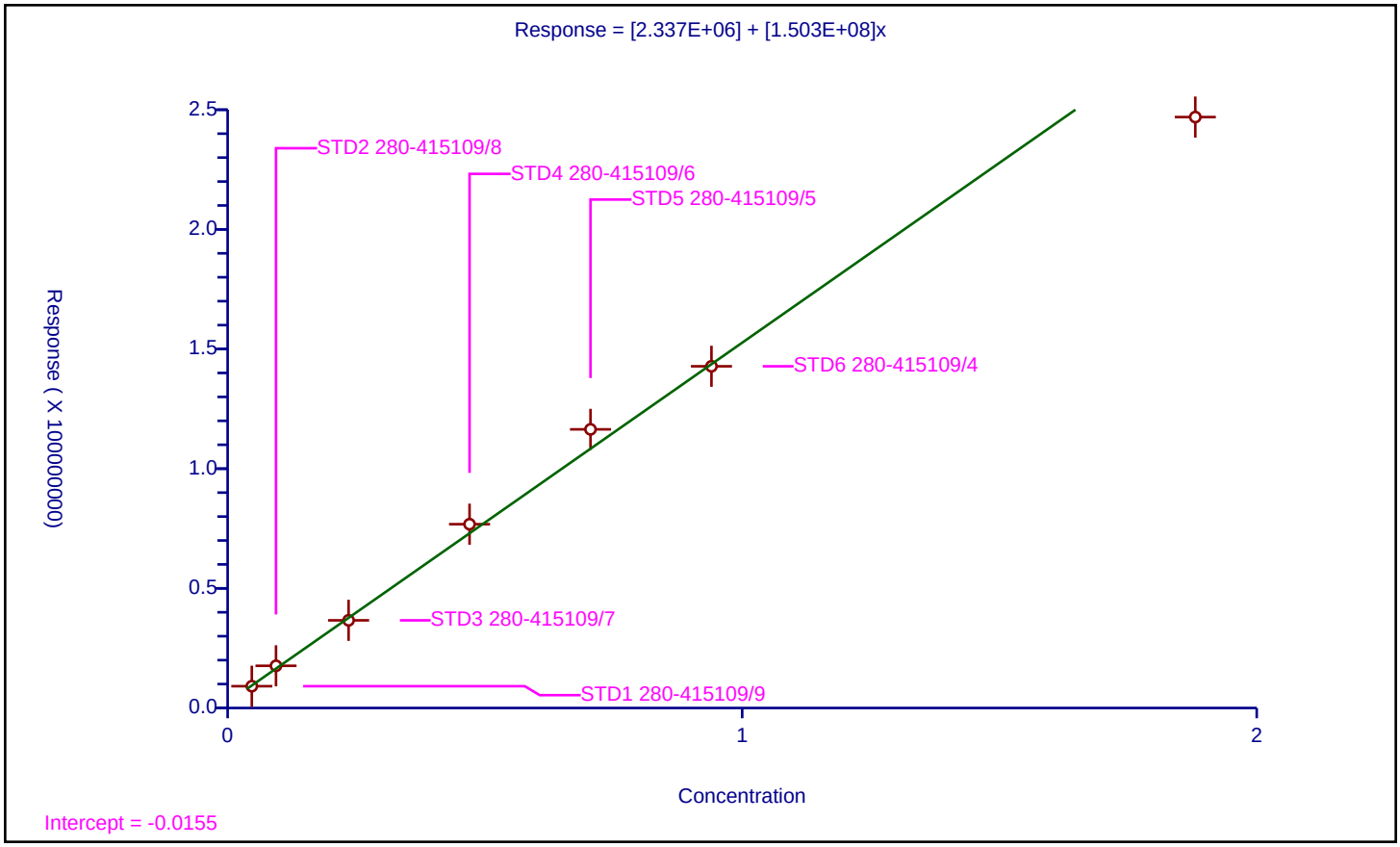
Curve Coefficients

Intercept:	2.337E+06
Slope:	1.503E+08

Error Coefficients

Standard Error:	17500000
Relative Standard Error:	8.5
Correlation Coefficient:	0.989
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047015	9106650.0			193696692.544932	Y
2	STD2 280-415109/8	0.09403	17633875.0			187534563.437201	Y
3	STD3 280-415109/7	0.235075	36635713.0			155846912.68744	Y
4	STD4 280-415109/6	0.47015	76806564.0			163366083.164947	Y
5	STD5 280-415109/5	0.705225	116439894.0			165110275.444007	Y
6	STD6 280-415109/4	0.9403	142788274.0			151853955.120706	Y
7	STD7 280-415109/3	1.8806	246941677.0			131310048.388812	Y



Calibration / Pentachlorophenol

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

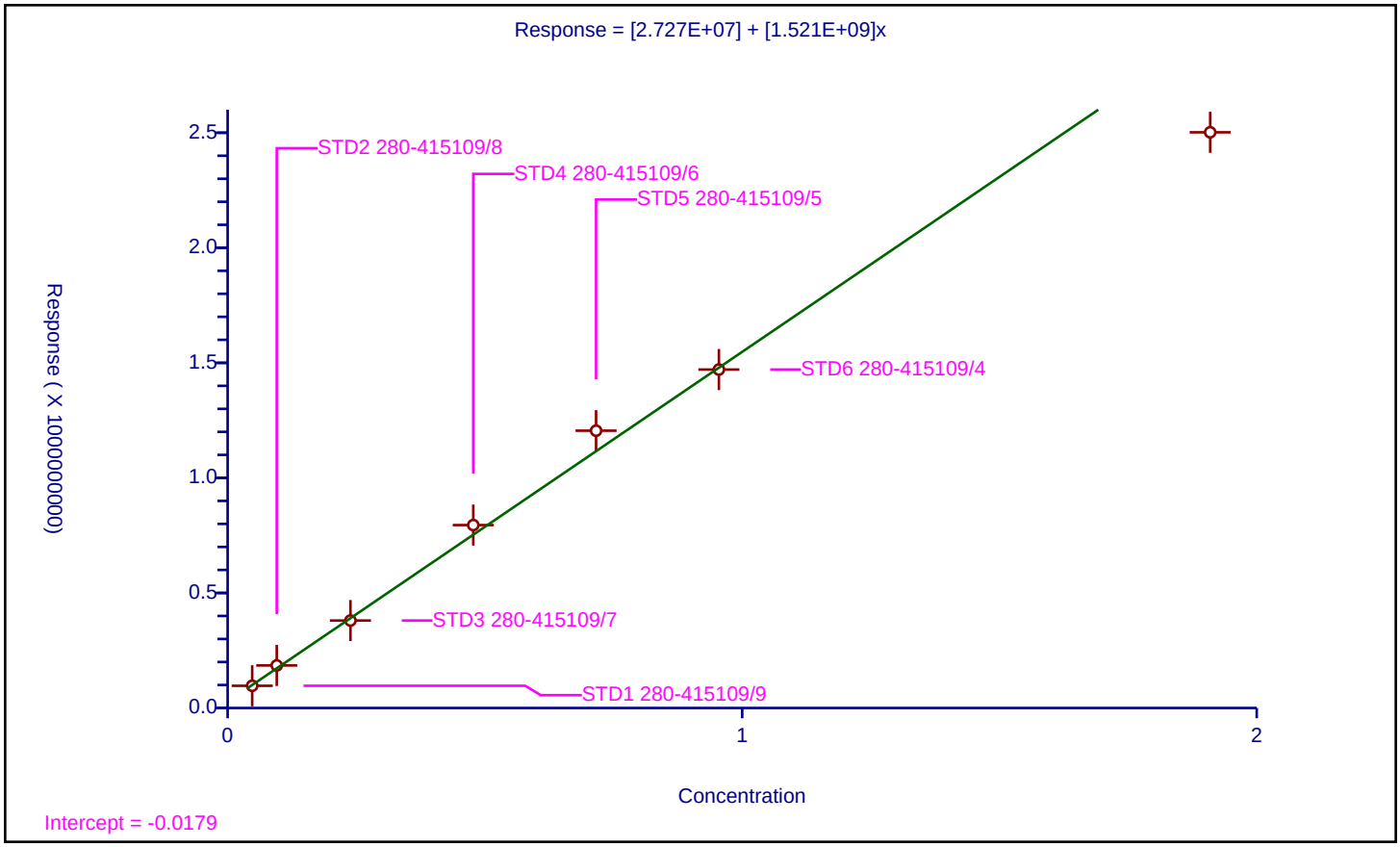
Curve Coefficients

Intercept:	2.727E+07
Slope:	1.521E+09

Error Coefficients

Standard Error:	197000000
Relative Standard Error:	9.2
Correlation Coefficient:	0.986
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047738	96589347.0			2023343220.73841	Y
2	STD2 280-415109/8	0.095475	185012754.0			1937813605.65593	Y
3	STD3 280-415109/7	0.238688	380083357.0			1592389031.68369	Y
4	STD4 280-415109/6	0.477375	794874236.0			1665093974.33883	Y
5	STD5 280-415109/5	0.716063	1205211236.0			1683108996.77053	Y
6	STD6 280-415109/4	0.95475	1470924810.0			1540638711.70463	Y
7	STD7 280-415109/3	1.9095	2501950757.0			1310264863.57685	Y



Calibration / Silvex (2,4,5-TP)

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

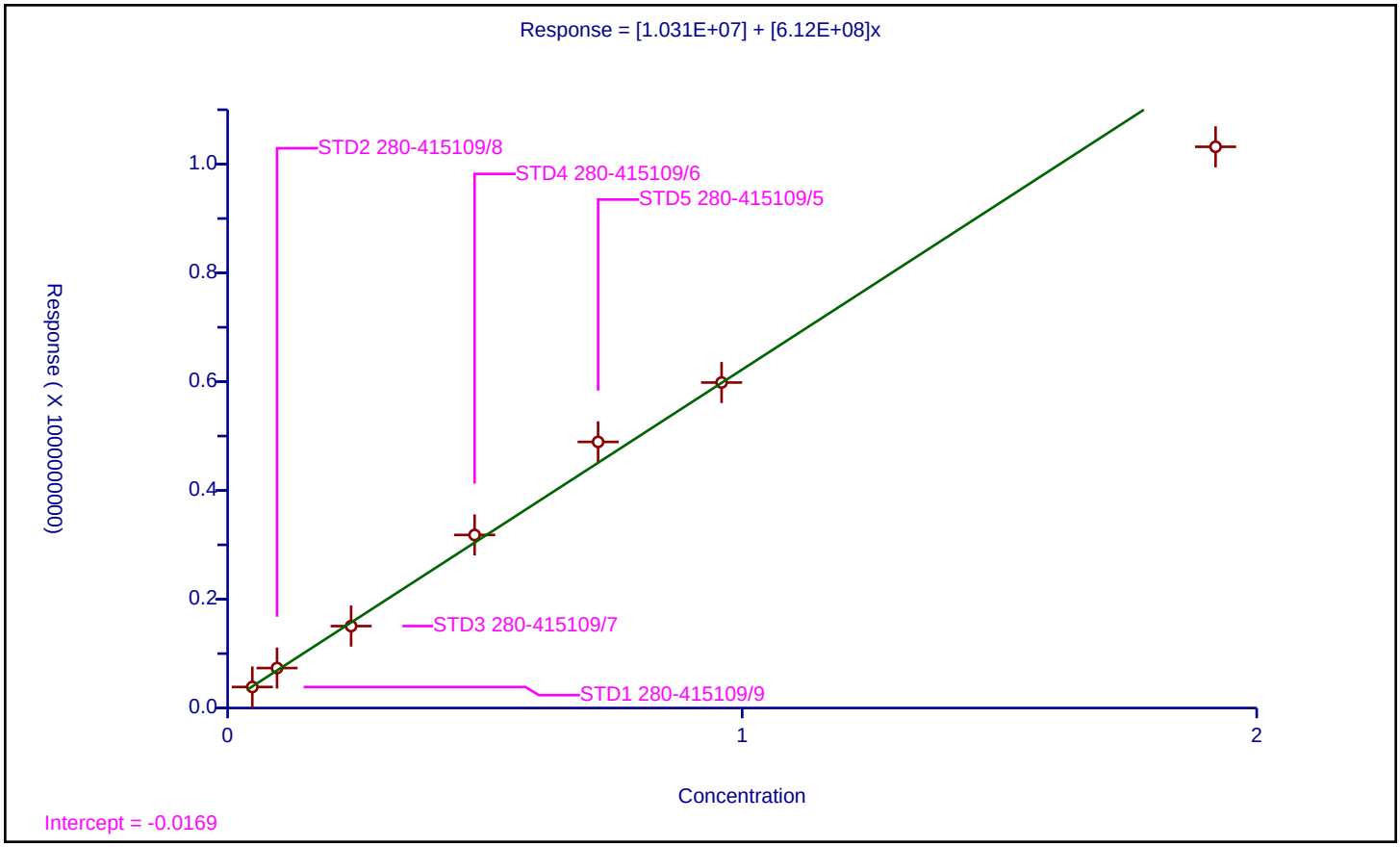
Curve Coefficients

Intercept:	1.031E+07
Slope:	6.12E+08

Error Coefficients

Standard Error:	71100000
Relative Standard Error:	8.5
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.048	38628421.0			804758770.833333	Y
2	STD2 280-415109/8	0.096	73469263.0			765304822.916667	Y
3	STD3 280-415109/7	0.24	150613154.0			627554808.333333	Y
4	STD4 280-415109/6	0.48	318198056.0			662912616.666667	Y
5	STD5 280-415109/5	0.72	489242150.0			679502986.111111	Y
6	STD6 280-415109/4	0.96	598429214.0			623363764.583333	Y
7	STD7 280-415109/3	1.92	1031870398.0			537432498.958333	Y



Calibration / 2,4,5-T

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

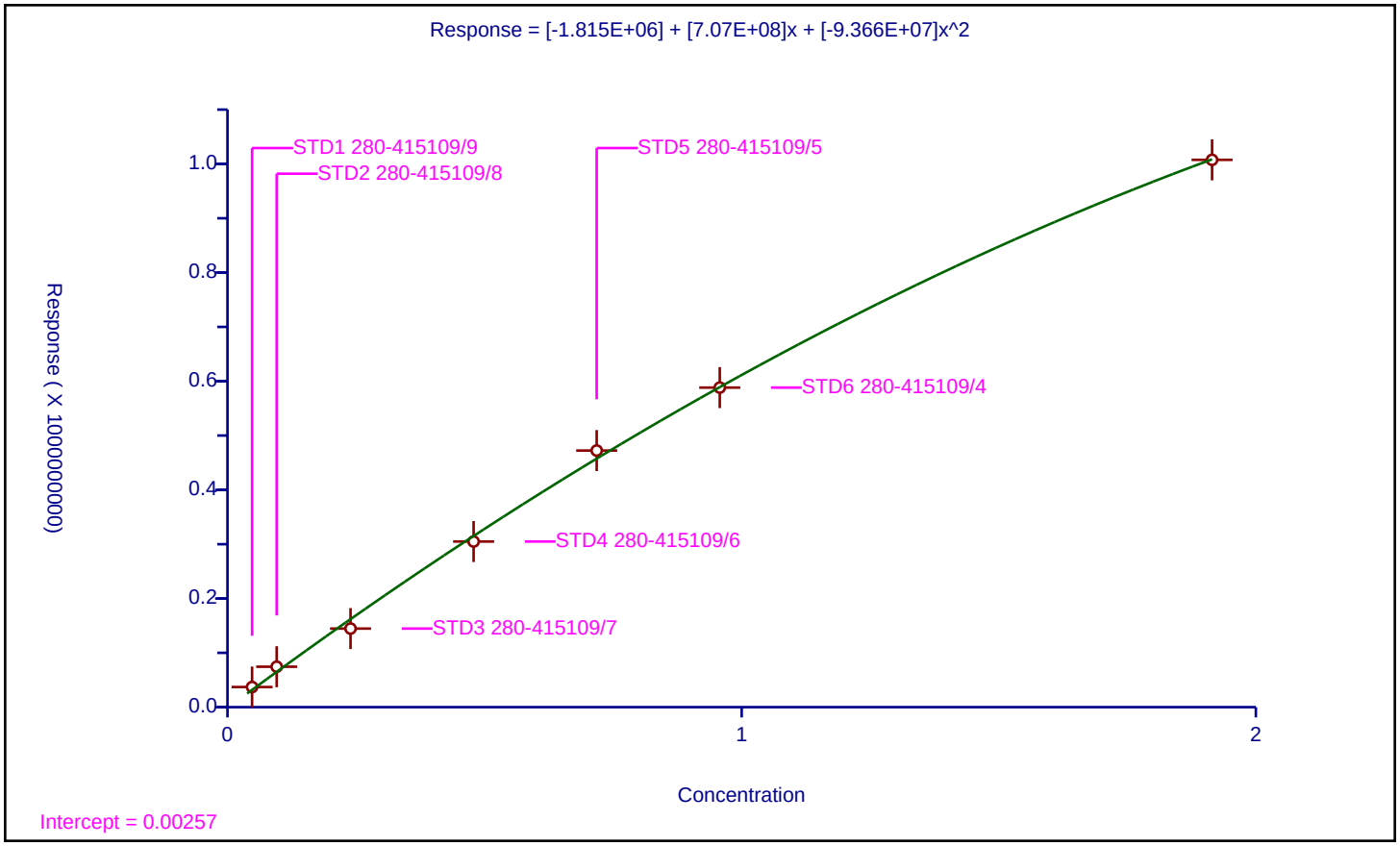
Curve Coefficients

Intercept:	-1.815E+06
Slope:	7.07E+08
Second Order:	-9.366E+07

Error Coefficients

Standard Error:	13600000
Relative Standard Error:	12.2
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.04787	37051074.0			773993607.687487	Y
2	STD2 280-415109/8	0.09574	74431898.0			777437831.627324	Y
3	STD3 280-415109/7	0.23935	144686752.0			604498650.511803	Y
4	STD4 280-415109/6	0.4787	304918236.0			636971456.026739	Y
5	STD5 280-415109/5	0.71805	472373107.0			657855451.570225	Y
6	STD6 280-415109/4	0.9574	588249739.0			614424210.361395	Y
7	STD7 280-415109/3	1.9148	1007525795.0			526178083.872989	Y



Calibration / 2,4-DB

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

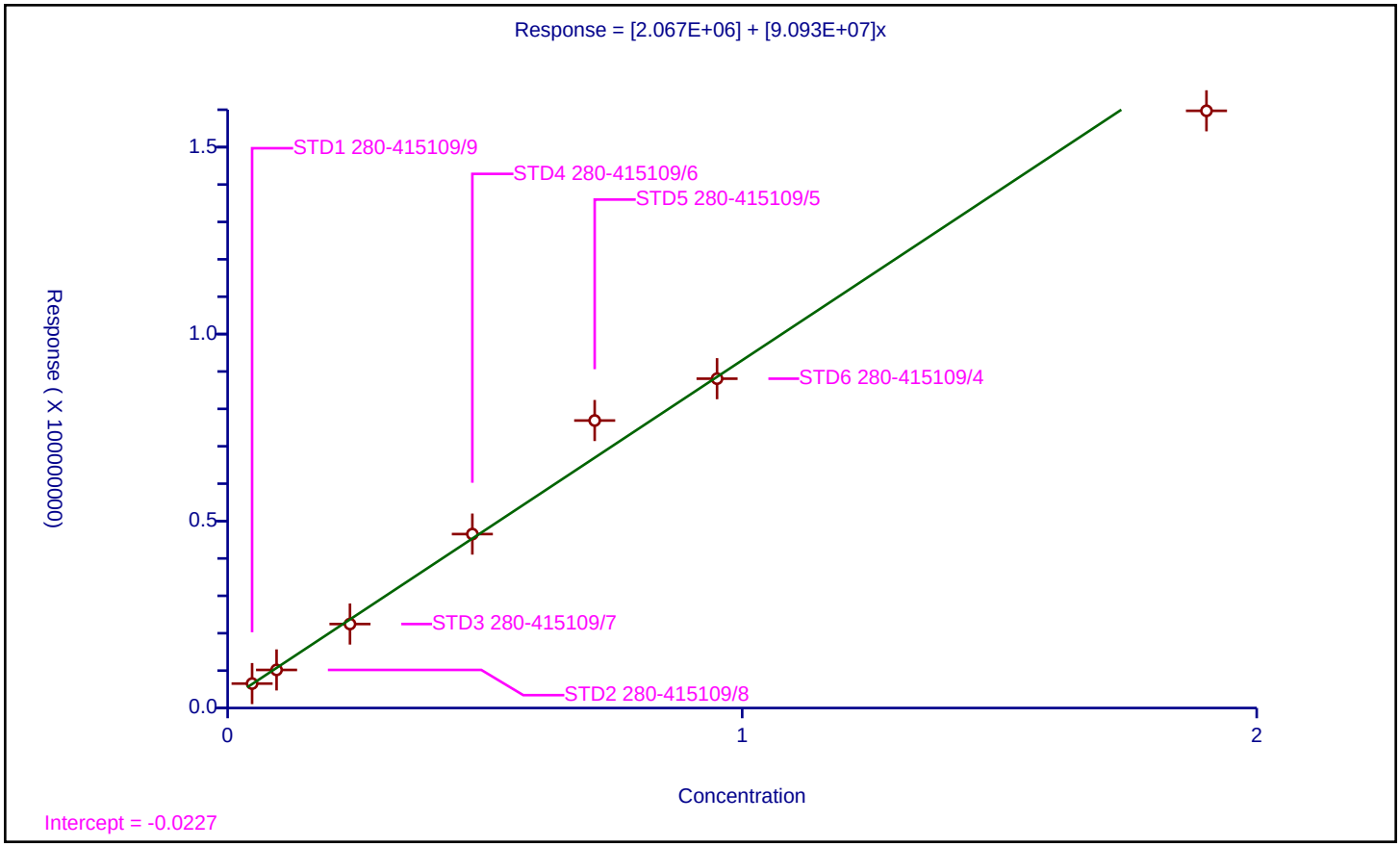
Curve Coefficients

Intercept:	2.067E+06
Slope:	9.093E+07

Error Coefficients

Standard Error:	8220000
Relative Standard Error:	9.0
Correlation Coefficient:	0.989
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047558	6529607.0			137299206.224045	Y
2	STD2 280-415109/8	0.095115	10180867.0			107037449.403354	Y
3	STD3 280-415109/7	0.237788	22458147.0			94446289.228828	Y
4	STD4 280-415109/6	0.475575	46518313.0			97814883.036324	Y
5	STD5 280-415109/5	0.713363	76881194.0			107772968.161349	Y
6	STD6 280-415109/4	0.95115	88075175.0			92598617.463071	Y
7	STD7 280-415109/3	1.9023	159714671.0			83958718.919203	Y



Calibration / Dinoseb

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ESTD
Response Base:	
RF Rounding:	0

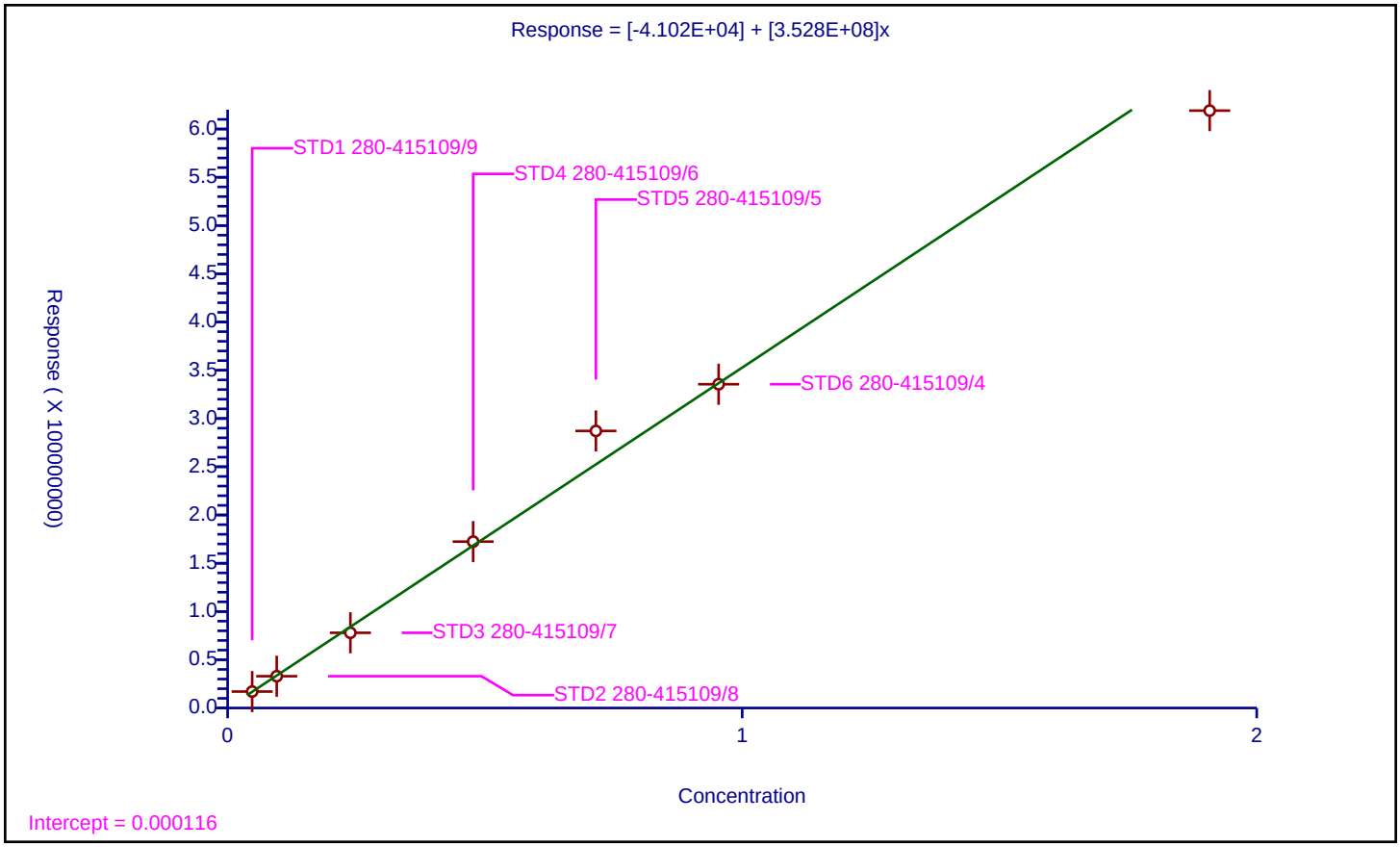
Curve Coefficients

Intercept:	-4.102E+04
Slope:	3.528E+08

Error Coefficients

Standard Error:	29000000
Relative Standard Error:	8.0
Correlation Coefficient:	0.991
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	STD1 280-415109/9	0.047713	17048480.0			357316845.690333	Y
2	STD2 280-415109/8	0.095425	32952462.0			345323154.309667	Y
3	STD3 280-415109/7	0.238563	77949917.0			326748407.649987	Y
4	STD4 280-415109/6	0.477125	172428375.0			361390358.920618	Y
5	STD5 280-415109/5	0.715688	287122170.0			401183714.959392	Y
6	STD6 280-415109/4	0.95425	335524680.0			351610877.652607	Y
7	STD7 280-415109/3	1.9085	619083644.0			324382312.811108	Y



FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: ICV 280-415109/10 Calibration Date: 05/16/2018 17:18

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05160010.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		259167913		386	341	13.1	20.0
Dicamba	Lin2		714955715		368	353	4.4	20.0
MCPP	Qua		894555		35300	35200	0.3	20.0
MCPA	Qua		1207835		34900	35000	-0.4	20.0
Dichlorprop	Lin2		182923924		361	354	1.9	20.0
2,4-D	Lin2		222229887		390	353	10.5	20.0
Pentachlorophenol	Lin2		2335307983		373	356	4.8	20.0
Silvex (2,4,5-TP)	Lin2		931196325		372	356	4.2	20.0
2,4,5-T	Lin2		897182198		377	355	6.1	20.0
2,4-DB	Lin2		139828158		366	355	3.1	20.0
Dinoseb	Lin2		520130299		368	354	3.7	20.0
2,4-Dichlorophenylacetic acid	Qua		213273359		350	348	0.6	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: ICV 280-415109/10 Calibration Date: 05/16/2018 17:18

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05160010.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.36	1.33	1.39
Dicamba	5.06	5.03	5.09
MCPP	5.25	5.22	5.28
MCPA	5.38	5.35	5.41
Dichlorprop	5.66	5.63	5.69
2,4-D	5.83	5.80	5.86
Pentachlorophenol	5.98	5.88	6.08
Silvex (2,4,5-TP)	6.38	6.35	6.41
2,4,5-T	6.54	6.51	6.57
2,4-DB	6.78	6.75	6.81
Dinoseb	7.11	7.08	7.14
2,4-Dichlorophenylacetic acid	4.90	4.86	4.92

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: ICV 280-415109/10 Calibration Date: 05/16/2018 17:18

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05160010.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Qua		255290665		369	341	8.2	20.0
Dicamba	Qua		513393110		360	353	2.0	20.0
MCPP	Qua		582049		37400	35200	6.3	20.0
MCPA	Qua		843084		34600	35000	-1.3	20.0
Dichlorprop	Lin2		127877181		363	354	2.5	20.0
2,4-D	Lin2		172828984		390	353	10.6	20.0
Pentachlorophenol	Lin2		1725791290		386	356	8.5	20.0
Silvex (2,4,5-TP)	Lin2		677863435		378	356	6.0	20.0
2,4,5-T	Qua		612936991		325	355	-8.6	20.0
2,4-DB	Lin2		97634858		358	355	1.0	20.0
Dinoseb	Lin2		333308936		335	354	-5.5	20.0
2,4-Dichlorophenylacetic acid	Qua		172617856		357	348	2.6	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: ICV 280-415109/10 Calibration Date: 05/16/2018 17:18

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05160010.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.13	1.10	1.16
Dicamba	4.80	4.76	4.82
MCPP	4.93	4.90	4.96
MCPA	5.14	5.11	5.17
Dichlorprop	5.40	5.37	5.43
2,4-D	5.62	5.59	5.65
Pentachlorophenol	5.86	5.76	5.96
Silvex (2,4,5-TP)	6.14	6.11	6.17
2,4,5-T	6.36	6.33	6.39
2,4-DB	6.64	6.61	6.67
Dinoseb	6.76	6.73	6.79
2,4-Dichlorophenylacetic acid	4.63	4.60	4.66

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCVRT 280-415679/3 Calibration Date: 05/21/2018 19:16

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210003.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		256491240		512	453	13.1	20.0
Dicamba	Lin2		647211040		453	475	-4.5	20.0
MCPP	Qua		792912		43100	47100	-8.6	20.0
MCPA	Qua		1136773		45900	47000	-2.3	20.0
Dichlorprop	Lin2		171061587		460	477	-3.6	20.0
2,4-D	Lin2		193843614		456	470	-3.1	20.0
Pentachlorophenol	Lin2		2009415881		433	477	-9.2	20.0
Silvex (2,4,5-TP)	Lin2		831349948		450	480	-6.2	20.0
2,4,5-T	Lin2		818316438		467	479	-2.5	20.0
2,4-DB	Lin2		130741124		462	476	-2.9	20.0
Dinoseb	Lin2		448860265		431	477	-9.7	20.0
2,4-Dichlorophenylacetic acid	Qua		186621836		414	464	-10.7	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCVRT 280-415679/3 Calibration Date: 05/21/2018 19:16

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210003.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.36	1.33	1.39
Dicamba	5.06	5.03	5.09
MCPP	5.25	5.22	5.28
MCPA	5.37	5.34	5.40
Dichlorprop	5.66	5.63	5.69
2,4-D	5.83	5.80	5.86
Pentachlorophenol	5.98	5.88	6.08
Silvex (2,4,5-TP)	6.37	6.34	6.40
2,4,5-T	6.54	6.51	6.57
2,4-DB	6.78	6.75	6.81
Dinoseb	7.11	7.08	7.14
2,4-Dichlorophenylacetic acid	4.89	4.86	4.92

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCVRT 280-415679/3 Calibration Date: 05/21/2018 19:16

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210003.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Qua		290838595		580	453	28.2*	20.0
Dicamba	Qua		538193462		526	475	10.8	20.0
MCPP	Qua		551970		49200	47100	4.3	20.0
MCPA	Qua		756853		43000	47000	-8.4	20.0
Dichlorprop	Lin2		129419831		502	477	5.4	20.0
2,4-D	Lin2		168991282		513	470	9.1	20.0
Pentachlorophenol	Lin2		1603095070		485	477	1.7	20.0
Silvex (2,4,5-TP)	Lin2		671953302		510	480	6.3	20.0
2,4,5-T	Qua		672305388		490	479	2.3	20.0
2,4-DB	Lin2		96925919		484	476	1.8	20.0
Dinoseb	Lin2		263018335		356	477	-25.4*	20.0
2,4-Dichlorophenylacetic acid	Qua		178069121		511	464	10.2	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCVRT 280-415679/3 Calibration Date: 05/21/2018 19:16

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210003.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.13	1.10	1.16
Dicamba	4.79	4.76	4.82
MCPP	4.93	4.90	4.96
MCPA	5.13	5.10	5.16
Dichlorprop	5.39	5.36	5.42
2,4-D	5.62	5.59	5.65
Pentachlorophenol	5.85	5.75	5.95
Silvex (2,4,5-TP)	6.14	6.11	6.17
2,4,5-T	6.36	6.33	6.39
2,4-DB	6.64	6.61	6.67
Dinoseb	6.76	6.73	6.79
2,4-Dichlorophenylacetic acid	4.63	4.60	4.66

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/19 Calibration Date: 05/21/2018 23:54

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		264119481		528	453	16.6	20.0
Dicamba	Lin2		659922564		462	475	-2.6	20.0
MCPP	Qua		789657		42900	47100	-9.1	20.0
MCPA	Qua		1027912		40800	47000	-13.2	20.0
Dichlorprop	Lin2		170239161		457	477	-4.0	20.0
2,4-D	Lin2		197134491		464	470	-1.4	20.0
Pentachlorophenol	Lin2		2008406536		433	477	-9.3	20.0
Silvex (2,4,5-TP)	Lin2		833791246		452	480	-5.9	20.0
2,4,5-T	Lin2		815797276		465	479	-2.8	20.0
2,4-DB	Lin2		125063445		441	476	-7.3	20.0
Dinoseb	Lin2		452765108		435	477	-8.9	20.0
2,4-Dichlorophenylacetic acid	Qua		191922955		427	464	-7.9	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/19 Calibration Date: 05/21/2018 23:54

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.36	1.33	1.39
Dicamba	5.06	5.03	5.09
MCPP	5.25	5.22	5.28
MCPA	5.37	5.34	5.40
Dichlorprop	5.66	5.63	5.69
2,4-D	5.83	5.80	5.86
Pentachlorophenol	5.98	5.88	6.08
Silvex (2,4,5-TP)	6.37	6.34	6.40
2,4,5-T	6.54	6.51	6.57
2,4-DB	6.78	6.75	6.81
Dinoseb	7.11	7.08	7.14
2,4-Dichlorophenylacetic acid	4.89	4.86	4.92

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/19 Calibration Date: 05/21/2018 23:54

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Qua		292504291		584	453	29.0*	20.0
Dicamba	Qua		544623404		533	475	12.3	20.0
MCPP	Qua		540535		48000	47100	1.9	20.0
MCPA	Qua		742338		42100	47000	-10.5	20.0
Dichlorprop	Lin2		130587538		507	477	6.4	20.0
2,4-D	Lin2		169743263		515	470	9.6	20.0
Pentachlorophenol	Lin2		1623634262		492	477	3.0	20.0
Silvex (2,4,5-TP)	Lin2		669997596		509	480	6.0	20.0
2,4,5-T	Qua		676209958		493	479	2.9	20.0
2,4-DB	Lin2		95662407		478	476	0.4	20.0
Dinoseb	Lin2		269043685		364	477	-23.7*	20.0
2,4-Dichlorophenylacetic acid	Qua		182189457		525	464	13.1	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/19 Calibration Date: 05/21/2018 23:54

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.13	1.10	1.16
Dicamba	4.79	4.76	4.82
MCPP	4.93	4.90	4.96
MCPA	5.13	5.10	5.16
Dichlorprop	5.39	5.36	5.42
2,4-D	5.62	5.59	5.65
Pentachlorophenol	5.85	5.75	5.95
Silvex (2,4,5-TP)	6.14	6.11	6.17
2,4,5-T	6.36	6.33	6.39
2,4-DB	6.64	6.61	6.67
Dinoseb	6.76	6.73	6.79
2,4-Dichlorophenylacetic acid	4.63	4.60	4.66

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/28 Calibration Date: 05/22/2018 02:30

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210028.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Lin2		266050531		532	453	17.5	20.0
Dicamba	Lin2		643367395		450	475	-5.1	20.0
MCPP	Qua		756622		40800	47100	-13.5	20.0
MCPA	Qua		1047206		41700	47000	-11.3	20.0
Dichlorprop	Lin2		166607640		447	477	-6.2	20.0
2,4-D	Lin2		191902891		451	470	-4.1	20.0
Pentachlorophenol	Lin2		1942252791		418	477	-12.4	20.0
Silvex (2,4,5-TP)	Lin2		815428371		441	480	-8.1	20.0
2,4,5-T	Lin2		801464389		457	479	-4.6	20.0
2,4-DB	Lin2		121851510		429	476	-9.7	20.0
Dinoseb	Lin2		440887881		423	477	-11.4	20.0
2,4-Dichlorophenylacetic acid	Qua		185609131		412	464	-11.3	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/28 Calibration Date: 05/22/2018 02:30

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP1 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210028.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.36	1.33	1.39
Dicamba	5.06	5.03	5.09
MCPP	5.25	5.22	5.28
MCPA	5.37	5.34	5.40
Dichlorprop	5.66	5.63	5.69
2,4-D	5.83	5.80	5.86
Pentachlorophenol	5.98	5.88	6.08
Silvex (2,4,5-TP)	6.37	6.34	6.40
2,4,5-T	6.54	6.51	6.57
2,4-DB	6.78	6.75	6.81
Dinoseb	7.11	7.08	7.14
2,4-Dichlorophenylacetic acid	4.89	4.86	4.92

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/28 Calibration Date: 05/22/2018 02:30

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210028.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dalapon	Qua		291995043		583	453	28.7*	20.0
Dicamba	Qua		529895142		517	475	8.9	20.0
MCPP	Qua		534545		47400	47100	0.6	20.0
MCPA	Qua		743882		42200	47000	-10.3	20.0
Dichlorprop	Lin2		130159645		505	477	6.0	20.0
2,4-D	Lin2		169265343		514	470	9.3	20.0
Pentachlorophenol	Lin2		1594612569		483	477	1.1	20.0
Silvex (2,4,5-TP)	Lin2		662765569		503	480	4.8	20.0
2,4,5-T	Qua		668314567		486	479	1.6	20.0
2,4-DB	Lin2		95311206		476	476	0.0	20.0
Dinoseb	Lin2		278533998		377	477	-21.0*	20.0
2,4-Dichlorophenylacetic acid	Qua		175886093		504	464	8.6	20.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Lab Sample ID: CCV 280-415679/28 Calibration Date: 05/22/2018 02:30

Instrument ID: SGC_M Calib Start Date: 05/16/2018 14:58

GC Column: CLP2 ID: 0.32(mm) Calib End Date: 05/16/2018 16:58

Lab File ID: 05210028.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dalapon	1.13	1.10	1.16
Dicamba	4.79	4.76	4.82
MCPP	4.93	4.90	4.96
MCPA	5.13	5.10	5.16
Dichlorprop	5.39	5.36	5.42
2,4-D	5.62	5.59	5.65
Pentachlorophenol	5.85	5.75	5.95
Silvex (2,4,5-TP)	6.13	6.11	6.17
2,4,5-T	6.36	6.33	6.39
2,4-DB	6.63	6.61	6.67
Dinoseb	6.76	6.73	6.79
2,4-Dichlorophenylacetic acid	4.62	4.60	4.66

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-109117-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 280-413309/1-A
Matrix: Water
Lab File ID: 05210020.D
Analysis Method: 8151A DOD
Date Collected:
Extraction Method: 8151A
Date Extracted: 05/01/2018 11:30
Sample wt/vol: 1000(mL)
Date Analyzed: 05/22/2018 00:11
Con. Extract Vol.: 10(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP1 ID: 0.32(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 415679
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	0.60	U	4.0	0.60	0.21
75-99-0	Dalapon	1.8	U	2.0	1.8	0.91
94-82-6	2,4-DB	0.92	U	4.0	0.92	0.36
1918-00-9	Dicamba	0.60	U	2.0	0.60	0.15
120-36-5	Dichlorprop	1.8	U	4.0	1.8	0.65
88-85-7	Dinoseb	0.92	U	1.0	0.92	0.45
94-74-6	MCPA	60	U	400	60	17
93-65-2	MCPP	92	U	400	92	33
93-76-5	2,4,5-T	0.60	U	1.0	0.60	0.19
93-72-1	Silvex (2,4,5-TP)	0.60	U	1.0	0.60	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	72		32-138

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver
Job No.: 280-109117-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 280-413309/2-A
Matrix: Water
Lab File ID: 05210021.D
Analysis Method: 8151A DOD
Date Collected:
Extraction Method: 8151A
Date Extracted: 05/01/2018 11:30
Sample wt/vol: 1000(mL)
Date Analyzed: 05/22/2018 00:29
Con. Extract Vol.: 10(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: CLP1 ID: 0.32(mm)
% Moisture:
GPC Cleanup:(Y/N) N
Analysis Batch No.: 415679
Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	3.58	J	4.0	0.60	0.21
75-99-0	Dalapon	4.15		2.0	1.8	0.91
94-82-6	2,4-DB	2.77	J	4.0	0.92	0.36
1918-00-9	Dicamba	3.25		2.0	0.60	0.15
120-36-5	Dichlorprop	3.26	J	4.0	1.8	0.65
88-85-7	Dinoseb	2.31		1.0	0.92	0.45
94-74-6	MCPA	292	J	400	60	17
93-65-2	MCPP	375	J	400	92	33
93-76-5	2,4,5-T	3.30		1.0	0.60	0.19
93-72-1	Silvex (2,4,5-TP)	3.29		1.0	0.60	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	68		32-138

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-109117-1

SDG No.:

Client Sample ID: QD-04262018 MS | Lab Sample ID: 280-109117-4 MS

Matrix: Water | Lab File ID: 05210026.D

Analysis Method: 8151A DOD | Date Collected: 04/26/2018 11:04

Extraction Method: 8151A | Date Extracted: 05/01/2018 11:30

Sample wt/vol: 1037.6(mL) | Date Analyzed: 05/22/2018 01:55

Con. Extract Vol.: 10(mL) | Dilution Factor: 10

Injection Volume: 1(uL) | GC Column: CLP1 ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 415679 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	5.8	U J1 D	39	5.8	2.0
75-99-0	Dalapon	18	U D	19	18	8.8
94-82-6	2,4-DB	8.9	U J1 D	39	8.9	3.5
1918-00-9	Dicamba	1.62	J J1 D	19	5.8	1.4
120-36-5	Dichlorprop	13.6	J D	39	18	6.3
88-85-7	Dinoseb	7.74	J J1 D	9.6	8.9	4.3
94-74-6	MCPA	580	U J1 D	3900	580	160
93-65-2	MCPP	890	U J1 D	3900	890	320
93-76-5	2,4,5-T	3.99	J D	9.6	5.8	1.8
93-72-1	Silvex (2,4,5-TP)	38.2	J1 D	9.6	5.8	1.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	85	D	32-138

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-109117-1

SDG No.:

Client Sample ID: QD-04262018 MSD | Lab Sample ID: 280-109117-4 MSD

Matrix: Water | Lab File ID: 05210027.D

Analysis Method: 8151A DOD | Date Collected: 04/26/2018 11:04

Extraction Method: 8151A | Date Extracted: 05/01/2018 11:30

Sample wt/vol: 1025.9(mL) | Date Analyzed: 05/22/2018 02:13

Con. Extract Vol.: 10(mL) | Dilution Factor: 10

Injection Volume: 1(uL) | GC Column: CLP1 ID: 0.32(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 415679 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
94-75-7	2,4-D	5.8	U J1 D	39	5.8	2.0
75-99-0	Dalapon	18	U D	19	18	8.9
94-82-6	2,4-DB	9.0	U J1 D	39	9.0	3.5
1918-00-9	Dicamba	1.86	J D J1	19	5.8	1.5
120-36-5	Dichlorprop	8.71	J D J1	39	18	6.3
88-85-7	Dinoseb	6.68	J J1 D	9.7	9.0	4.4
94-74-6	MCPA	580	U J1 D	3900	580	170
93-65-2	MCPP	900	U J1 D	3900	900	320
93-76-5	2,4,5-T	3.27	J D	9.7	5.8	1.9
93-72-1	Silvex (2,4,5-TP)	42.2	J1 D	9.7	5.8	1.7

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	88	D	32-138

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Instrument ID: SGC_M Start Date: 05/16/2018 14:58

Analysis Batch Number: 415109 End Date: 05/17/2018 10:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD7 280-415109/3 IC		05/16/2018 14:58	1	05160003.D	CLP1 0.32(mm)
STD7 280-415109/3 IC		05/16/2018 14:58	1	05160003.D	CLP2 0.32(mm)
STD6 280-415109/4 IC		05/16/2018 15:18	1	05160004.D	CLP1 0.32(mm)
STD6 280-415109/4 IC		05/16/2018 15:18	1	05160004.D	CLP2 0.32(mm)
STD5 280-415109/5 IC		05/16/2018 15:38	1	05160005.D	CLP1 0.32(mm)
STD5 280-415109/5 IC		05/16/2018 15:38	1	05160005.D	CLP2 0.32(mm)
STD4 280-415109/6 ICRT		05/16/2018 15:58	1	05160006.D	CLP1 0.32(mm)
STD4 280-415109/6 ICRT		05/16/2018 15:58	1	05160006.D	CLP2 0.32(mm)
STD3 280-415109/7 IC		05/16/2018 16:18	1	05160007.D	CLP1 0.32(mm)
STD3 280-415109/7 IC		05/16/2018 16:18	1	05160007.D	CLP2 0.32(mm)
STD2 280-415109/8 IC		05/16/2018 16:38	1	05160008.D	CLP1 0.32(mm)
STD2 280-415109/8 IC		05/16/2018 16:38	1	05160008.D	CLP2 0.32(mm)
STD1 280-415109/9 IC		05/16/2018 16:58	1	05160009.D	CLP1 0.32(mm)
STD1 280-415109/9 IC		05/16/2018 16:58	1	05160009.D	CLP2 0.32(mm)
ICV 280-415109/10		05/16/2018 17:18	1	05160010.D	CLP1 0.32(mm)
ICV 280-415109/10		05/16/2018 17:18	1	05160010.D	CLP2 0.32(mm)
ZZZZZ		05/16/2018 17:58	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 17:58	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 18:18	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 18:18	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 18:37	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 18:37	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 18:57	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 18:57	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 19:15	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 19:15	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 19:33	4		CLP1 0.32(mm)
ZZZZZ		05/16/2018 19:33	4		CLP2 0.32(mm)
ZZZZZ		05/16/2018 19:51	4		CLP1 0.32(mm)
ZZZZZ		05/16/2018 19:51	4		CLP2 0.32(mm)
ZZZZZ		05/16/2018 20:09	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 20:09	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 20:26	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 20:26	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 20:44	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 20:44	1		CLP2 0.32(mm)
CCV 280-415109/24		05/16/2018 21:22	1		CLP1 0.32(mm)
CCV 280-415109/24		05/16/2018 21:22	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 21:39	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 21:39	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 21:57	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 21:57	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 22:14	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 22:14	1		CLP2 0.32(mm)

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Instrument ID: SGC_M Start Date: 05/16/2018 14:58

Analysis Batch Number: 415109 End Date: 05/17/2018 10:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		05/16/2018 22:32	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 22:32	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 22:50	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 22:50	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 23:06	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 23:06	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 23:23	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 23:23	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 23:41	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 23:41	1		CLP2 0.32(mm)
ZZZZZ		05/16/2018 23:58	1		CLP1 0.32(mm)
ZZZZZ		05/16/2018 23:58	1		CLP2 0.32(mm)
CCV 280-415109/34		05/17/2018 00:15	1		CLP1 0.32(mm)
CCV 280-415109/34		05/17/2018 00:15	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 00:33	4		CLP1 0.32(mm)
ZZZZZ		05/17/2018 00:33	4		CLP2 0.32(mm)
ZZZZZ		05/17/2018 00:50	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 00:50	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 01:06	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 01:06	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 01:23	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 01:23	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 01:39	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 01:39	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 01:55	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 01:55	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 02:10	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 02:10	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 02:28	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 02:28	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 02:45	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 02:45	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 03:01	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 03:01	1		CLP2 0.32(mm)
CCV 280-415109/45		05/17/2018 03:17	1		CLP1 0.32(mm)
CCV 280-415109/45		05/17/2018 03:17	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 03:32	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 03:32	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 03:48	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 03:48	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 04:04	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 04:04	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 04:20	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 04:20	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 04:37	1		CLP1 0.32(mm)

8151A DOD

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Instrument ID: SGC_M Start Date: 05/16/2018 14:58

Analysis Batch Number: 415109 End Date: 05/17/2018 10:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		05/17/2018 04:37	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 04:53	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 04:53	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 05:09	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 05:09	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 05:26	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 05:26	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 05:43	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 05:43	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 06:00	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 06:00	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 06:17	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 06:17	1		CLP2 0.32(mm)
CCV 280-415109/57		05/17/2018 06:34	1		CLP1 0.32(mm)
CCV 280-415109/57		05/17/2018 06:34	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 06:52	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 06:52	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 07:09	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 07:09	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 07:26	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 07:26	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 07:44	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 07:44	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 08:01	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 08:01	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 08:19	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 08:19	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 08:37	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 08:37	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 08:54	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 08:54	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 09:13	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 09:13	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 09:31	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 09:31	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 09:50	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 09:50	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 10:10	1		CLP1 0.32(mm)
ZZZZZ		05/17/2018 10:10	1		CLP2 0.32(mm)
ZZZZZ		05/17/2018 10:29	10		CLP1 0.32(mm)
ZZZZZ		05/17/2018 10:29	10		CLP2 0.32(mm)
CCV 280-415109/71		05/17/2018 10:47	1		CLP1 0.32(mm)
CCV 280-415109/71		05/17/2018 10:47	1		CLP2 0.32(mm)

8151A DOD

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Instrument ID: SGC_M Start Date: 05/21/2018 19:16

Analysis Batch Number: 415679 End Date: 05/22/2018 02:30

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVRT 280-415679/3		05/21/2018 19:16	1	05210003.D	CLP1 0.32(mm)
CCVRT 280-415679/3		05/21/2018 19:16	1	05210003.D	CLP2 0.32(mm)
ZZZZZ		05/21/2018 19:34	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 19:34	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 19:52	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 19:52	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 20:10	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 20:10	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 20:27	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 20:27	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 20:45	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 20:45	1		CLP2 0.32(mm)
CCV 280-415679/9		05/21/2018 21:03	1		CLP1 0.32(mm)
CCV 280-415679/9		05/21/2018 21:03	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 21:20	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 21:20	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 21:38	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 21:38	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 21:55	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 21:55	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 22:13	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 22:13	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 22:29	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 22:29	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 22:46	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 22:46	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 23:03	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 23:03	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 23:19	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 23:19	1		CLP2 0.32(mm)
ZZZZZ		05/21/2018 23:36	1		CLP1 0.32(mm)
ZZZZZ		05/21/2018 23:36	1		CLP2 0.32(mm)
CCV 280-415679/19		05/21/2018 23:54	1	05210019.D	CLP1 0.32(mm)
CCV 280-415679/19		05/21/2018 23:54	1	05210019.D	CLP2 0.32(mm)
MB 280-413309/1-A		05/22/2018 00:11	1	05210020.D	CLP1 0.32(mm)
MB 280-413309/1-A		05/22/2018 00:11	1	05210020.D	CLP2 0.32(mm)
LCS 280-413309/2-A		05/22/2018 00:29	1	05210021.D	CLP1 0.32(mm)
LCS 280-413309/2-A		05/22/2018 00:29	1	05210021.D	CLP2 0.32(mm)
280-109117-1		05/22/2018 00:46	1	05210022.D	CLP1 0.32(mm)
280-109117-1		05/22/2018 00:46	1	05210022.D	CLP2 0.32(mm)
280-109117-2		05/22/2018 01:03	1	05210023.D	CLP1 0.32(mm)
280-109117-2		05/22/2018 01:03	1	05210023.D	CLP2 0.32(mm)
280-109117-3		05/22/2018 01:21	10	05210024.D	CLP1 0.32(mm)
280-109117-3		05/22/2018 01:21	10	05210024.D	CLP2 0.32(mm)
280-109117-4		05/22/2018 01:38	10	05210025.D	CLP1 0.32(mm)

8151A DOD

HERBICIDES ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Instrument ID: SGC_M Start Date: 05/21/2018 19:16

Analysis Batch Number: 415679 End Date: 05/22/2018 02:30

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
280-109117-4		05/22/2018 01:38	10	05210025.D	CLP2 0.32(mm)
280-109117-4 MS		05/22/2018 01:55	10	05210026.D	CLP1 0.32(mm)
280-109117-4 MS		05/22/2018 01:55	10	05210026.D	CLP2 0.32(mm)
280-109117-4 MSD		05/22/2018 02:13	10	05210027.D	CLP1 0.32(mm)
280-109117-4 MSD		05/22/2018 02:13	10	05210027.D	CLP2 0.32(mm)
CCV 280-415679/28		05/22/2018 02:30	1	05210028.D	CLP1 0.32(mm)
CCV 280-415679/28		05/22/2018 02:30	1	05210028.D	CLP2 0.32(mm)

8151A DOD

HERBICIDES BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Batch Number: 413309 Batch Start Date: 05/01/18 11:30 Batch Analyst: Carroll, Randall P

Batch Method: 8151A Batch End Date: 05/04/18 12:03

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
MB 280-413309/1		8151A, 8151A DOD				1000 mL	10 mL	7 SU	>12 SU
LCS 280-413309/2		8151A, 8151A DOD				1000 mL	10 mL	7 SU	>12 SU
280-109117-B-1	FU-04242018	8151A, 8151A DOD	T	1481.9 g	451.6 g	1030.3 mL	10 mL	7 SU	>12 SU
280-109117-B-2	BF-2BR-04252018	8151A, 8151A DOD	T	1453.7 g	449.9 g	1003.8 mL	10 mL	7 SU	>12 SU
280-109117-B-3	DUP2-04262018	8151A, 8151A DOD	T	1501.2 g	451.6 g	1049.6 mL	10 mL	7 SU	>12 SU
280-109117-A-4	QD-04262018	8151A, 8151A DOD	T	1485.9 g	451.1 g	1034.8 mL	10 mL	7 SU	>12 SU
280-109117-A-4 MS	QD-04262018	8151A, 8151A DOD	T	1488.3 g	450.7 g	1037.6 mL	10 mL	7 SU	>12 SU
280-109117-A-4 MSD	QD-04262018	8151A, 8151A DOD	T	1477.5 g	451.6 g	1025.9 mL	10 mL	7 SU	>12 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	SecondAdjustpH	8151 LCS 00095	8151Surrogate 00157			
MB 280-413309/1		8151A, 8151A DOD		<2		1 mL			
LCS 280-413309/2		8151A, 8151A DOD		<2	0.5 mL	1 mL			
280-109117-B-1	FU-04242018	8151A, 8151A DOD	T	<2		1 mL			
280-109117-B-2	BF-2BR-04252018	8151A, 8151A DOD	T	<2		1 mL			
280-109117-B-3	DUP2-04262018	8151A, 8151A DOD	T	<2		1 mL			
280-109117-A-4	QD-04262018	8151A, 8151A DOD	T	<2		1 mL			
280-109117-A-4 MS	QD-04262018	8151A, 8151A DOD	T	<2	0.5 mL	1 mL			
280-109117-A-4 MSD	QD-04262018	8151A, 8151A DOD	T	<2	0.5 mL	1 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HERBICIDES BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-109117-1

SDG No.:

Batch Number: 413309 Batch Start Date: 05/01/18 11:30 Batch Analyst: Carroll, Randall P

Batch Method: 8151A Batch End Date: 05/04/18 12:03

Batch Notes	
Acid Used for pH Adjustment ID	12N H2SO4
Balance ID	B442138757
Base Used to Adjust pH ID	37% KOH
Batch Comment	DV-OP-0011 pip:BB8@10mL/ silicicAcid 00026/Methanol 00202
Concentration 1 Equipment ID	A
Analyst ID - Concentration	MM (trainee)/ KS (trainer)
Concentration 1 Corrected Temperature	65 Degrees C
Diethyl Ether ID	EthylEther_01736/01737/01738
Analyst ID - Extraction	RC
Sulfuric Acid Lot Number	12N H2SO4_00478
Potassium Hydroxide ID	37% KOH_00207
MeCL2 ID	MeCl2_Cycl_00382
Acidified Na2SO4 ID	Acid_Na2SO4_00575/577
NaCl ID	176877
Pipette/Syringe/Dispenser ID	K/L
Analyst ID - Spike Analyst	RC
Analyst ID - Spike Witness Analyst	Reviewer: JZ
Sufficient Volume for Batch QC	YES
TMSDM ID	TMSD_00106
Concentration 1 Uncorrected Temperature	67 Degrees C
Reagent Water ID	N ELGA

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: ALEX VALLI	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-73288-24361.1
Client Contact: Jennifer Mumper	Phone: 908-581-7553	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 1
Company: Insight Environmental Engineering & Cons				Job #:
Address: 2749 Saturn Street	Due Date Requested:			
City: Brea	TAT Requested (days): 21 DAYS			
State, Zip: CA, 92821				
Phone: 913-909-2411(Tel)	PO #:			
Email: jmumper@ieeci.com	WO #:			
Project Name: CIC Edison LTM March 2018	Project #: 28012347			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	HERBICIDES	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FU-04242018	4/24/18	1138	Gr.	W			2		
BF-2BR-04252016	4/25/18	1408	Gr	W			2		
DUP2-04262018	4/26/18	0900	Gr.	W			2		
QD-04262018	4/26/18	1104	Gr.	W		X	4		

280-109117 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by: Alex Valli	Date/Time: 4/26/2018 1737	Company: TETRA TECH	Received by:	Date/Time: 4/26/18 1737	Company: TA-ED1
Relinquished by:	Date/Time: 4-27-18	Company: TTEC	Received by:	Date/Time: 1804	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/28/18 0900	Company: TA-DEN

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: IR#1 3.6°C

2.3°C=0.0 IR #8 (TA-DEN)

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: Insight Environmental Engineering & Cons

Job Number: 280-109117-1

Login Number: 109117

List Source: TestAmerica Denver

List Number: 1

Creator: Burtness, Benjamin W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	False	Refer to Job Narrative for details.
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

QC/QC Checklists
Validation Reports

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Insight Environmental,
Engineering and Construction, Inc.
2749 Saturn Street
Brea, CA 92821
ATTN: Mr. Nick Weinberger

July 10, 2018

SUBJECT: Chemical Insecticide Corporation, Data Validation

Dear Mr. Weinberger,

Enclosed is the final validation report for the fraction listed below. This SDG was received on June 12, 2018. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #42400:

SDG #	Fraction
280-109117-1	Herbicides

The data validation was performed under Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Project Specific Uniform Federal Policy Quality Assurance Project Plan for Groundwater Monitoring at Chemical Insecticide Corporation Superfund Site, Edison, New Jersey, Revision 3; November 2016
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0; July 2013
- USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry, SOP HW-24, Revision 4; October 2014
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Senior Chemist

EDD 98 pages-ADV

Attachment 1

III/IV 90/10

LDC #42400 (Insight EEC, Inc.- Leawood, KS / CIC, Edison LTM March 2018)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Herb. (8151A)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	280-109117-1	06/12/18	07/03/18	4	0																																
Total	J/CR			4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS, MSD, or DUP's.

L:\Insight\Chemical Insecticide Corp\42400ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Chemical Insecticide Corporation

LDC Report Date: July 9, 2018

Parameters: Herbicides

Validation Level: Level III

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): 280-109117-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
FU-04242018	280-109117-1	Water	04/24/18
BF-2BR-04252018	280-109117-2	Water	04/25/18
DUP2-04262018	280-109117-3	Water	04/26/18
QD-04262018	280-109117-4	Water	04/26/18
QD-04262018MS	280-109117-4MS	Water	04/26/18
QD-04262018MSD	280-109117-4MSD	Water	04/26/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Project Specific Uniform Federal Policy Quality Assurance Project Plan for Groundwater Monitoring at Chemical Insecticide Corporation Superfund Site, Edison, New Jersey, Revision 3 (November 2016), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and the USEPA Region 2 Standard Operating Procedure for Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry, SOP HW-24, Revision 4 (October 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Herbicides by Environmental Protection Agency (EPA) SW 846 Method 8151A

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
05/21/18	CCV	CLP 2	Dalapon Dinoseb	29.0 23.7	All samples in SDG 280-109117-1	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicate

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For QD-04262018MS/MSD, no data were qualified for percent recoveries (%R) and relative percent differences (RPD) outside the QC limits since the MS/MSD was analyzed at greater than or equal to a 5X dilution.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples DUP2-04262018 and QD-04262018 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	DUP2-04262018	QD-04262018			
Dinoseb	7.7	8.9U	Not calculable	-	-

X. Compound Quantitation

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
FU-04242018	2,4-DB	99.3	J (all detects)	A

Raw data were not reviewed for Level III validation.

XI. Target Compound Identification

Raw data were not reviewed for Level III validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to continuing calibration %D and RPD between two columns, data were qualified as estimated in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Chemical Insecticide Corporation
Herbicides - Data Qualification Summary - SDG 280-109117-1

Sample	Compound	Flag	A or P	Reason
FU-04242018 BF-2BR-04252018 DUP2-04262018 QD-04262018	Dalapon Dinoseb	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
FU-04242018	2,4-DB	J (all detects)	A	Compound quantitation (RPD between two columns)

Chemical Insecticide Corporation
Herbicides - Laboratory Blank Data Qualification Summary - SDG 280-109117-1

No Sample Data Qualified in this SDG

Chemical Insecticide Corporation
Herbicides - Field Blank Data Qualification Summary - SDG 280-109117-1

No Sample Data Qualified in this SDG

LDC #: 42400A5
SDG #: 280-109117-1
Laboratory: Test America, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 7/9/18
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC Herbicides (EPA SW 846 Method 8151A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / A	% RSD ≤ 20, r² 1 CV ≤ 20
III.	Continuing calibration	SW	CCV ≤ 20
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D = 4, 3
X.	Compound quantitation RL/LOQ/LODs	SW	Not reviewed for Level III validation.
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	FU-04242018 R	280-109117-1	Water	04/24/18
2	BF-2BR-04252018	280-109117-2	Water	04/25/18
3	DUP2-04262018 D	280-109117-3	Water	04/26/18
4	QD-04262018 D	280-109117-4	Water	04/26/18
5	QD-04262018MS	280-109117-4MS	Water	04/26/18
6	QD-04262018MSD	280-109117-4MSD	Water	04/26/18
7				
8				
9				
10				
11				

Notes:

	MB 280-41330	9					

VALIDATION FINDINGS WORKSHEET

METHOD: ____GC ____HPLC

8310	8330	8151	8141	8141(Con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	X. EPN	V. Benzene
B. Acenaphthylene	B. RDX	B. 2,4-DB	B. Mevinphos	Y. Azinphos-methyl	CC. Toluene
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2,4,5-T	C. Demeton-O	Z. Coumaphos	EE. Ethyl Benzene
D. Benzo(a)anthracene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	AA. Parathion	SSS. O-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	BB. Trichloronate	RRR. MP-Xylene
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	CC. Trichlorinate	GG. Total Xylene
G. Benzo(g,h,i)perylene	G. 2.4.6-Trinitrotoluene	G. Dicamba	G. Sulfotep	DD. Trifluralin	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	EE. Def	**8315A**
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	I. Dimethoate	FF. Prowl	A. Formaldehyde
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotoluene	J. MCPA	J. Diazinon	GG. Ethion	B. Acetaldehyde
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	HH. Famphur	C. Benzaldehyde
L. Fluorene	L. 2-Nitrotoluene	L. 2,4,5-TP (silvex)	L. Parathion-methyl	II. Phosmet	D. Butyraldehyde
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	JJ. Tetrachlorvinphos	
N. Naphthalene	N. 4-Nitrotoluene	N. Dichloroprop	N. Malathion	KK. Demeton (total)	
O. Phenanthrene	O. Nitroglycerin	O.	O. Chlorpyrifos		
P. Pyrene	P. Picric acid	P.	P. Fenthion		
Q.	Q. 2,4-Dinitrophenol	Q.	Q. Parathion-ethyl		
R.	R. 3,5-Dinitroaniline		R. Trichlornate		
S.	S. 2-Nitrophenol		S. Merphos		
	T. 4-Nitrophenol		T. Stirofos		
	U. Picramic acid		U. Tokuthion		
	V. PETN		V. Fensulfothion		
			W. Bolstar		

Notes:_____

CPDLIST_r1.WPD

LDC #: 42400A5

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ___%D or ___%R
Y N N/A Were continuing calibration standards analyzed at the required frequencies?
Y N N/A Did the continuing calibration standards meet the %D / %R validation criteria of ≤20.0% / 80-120%?
Level IV Only
Y N N/A Were the retention times for all calibrated compounds within their respective acceptance windows?

#	Date	Standard ID	Detector/ Column	Compound	%D (Limit ≤ 20.0)	RT (limit)	Associated Samples	Qualifications
+	5/21/18	CCV	CLP2	H	29.0		All	J/UJ/A ND+Det
	2354			E	23.7		↓	↓
-								

CONCAL_r1.wpd

LDC #: 42400A5

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: FT
2nd Reviewer:

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?
Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?
Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	5,6	several %R	+ % (RPD)	outside limit	( )	4	no qual 75XDL
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 42400A5

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: FT
2nd reviewer: [illegible]

METHOD: ✓ **GC** ___ **HPLC**

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		%RPD Limit (≤ 20 %)	Qualification (Parent only)
	3	4		
E	7.7	8.9U	NC	

Compound	Concentration ( )		%RPD Limit (≤_____%)	Qualification (Parent only)

Compound	Concentration ( )		%RPD Limit (≤_____%))	Qualification (Parent only)

LDC #: 42400A5

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1
Reviewer: FT
2nd Reviewer: a

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?
Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Associated Samples	Compound Name	%RPD Bet 2 col ≤ 40 Findings	Qualifications
	1	B	99.3	J det /A

Comments: See sample calculation verification worksheet for recalculations

COMQUA_r1.wpd

LDC #: 42400

EDD POPULATION COMPLETENESS WORKSHEET

Date: 7/10/15

Page: 1 of 1

2nd Reviewer:

The LDC job number listed above was entered by KK.

Entered from Body of Summary

	EDD Process		Comments/Action
I.	EDD Completeness	-	
Ia.	- All methods present?	Y	
Ib.	- All samples present/match report?	Y	
Ic.	- All reported analytes present?	Y	
Id.	- 10% or 100% verification of EDD?	Y	
II.	EDD Preparation/Entry	-	
IIa.	- Carryover U/J?	Y	
IIb.	- Reason Codes used? If so, note which codes.	Y	LDC
IIc.	- Additional Information (QC Level, Validator, Validated Y/N, etc.)	Y	
III.	Reasonableness Checks	-	
IIIa.	- Do all qualified ND results have ND qualifier (e.g. UJ)?	Y	
IIIb.	- Do all qualified detect results have detect qualifier (e.g. J)?	Y	
IIIc.	- If reason codes are used, do all qualified results have reason code field populated, and vice versa?	Y	
IIId.	-Does the detect flag require changing for blank qualifier? If so, are all U results marked ND?	—/—	
IIIe.	- Do blank concentrations in report match EDD where data was qualified due to blank contamination?	—	
IIIf.	- Were multiple results reported due to dilutions/reanalysis? If so, were results qualified appropriately?	N/—	
IIIg.	-Are there any discrepancies between the data packet and the EDD?	N	

Notes: *see discrepancy sheet

EXECUTIVE NARRATIVE

Case No.: 47571
Site: Chemical Insecticide Corporation
Number of Samples: 20 (Water)
Analysis: TVOA, TVOA-SIM, PEST

SDG No.: BE908
Laboratory: Shealy Environmental Services, Inc.
Sampling dates: 04/23/2018-04/25/2018
Validation SOP: HW-34A (Rev 1), HW-36 (Rev 1)

QAPP:
Contractor: Tetra Tech (SDV IOI JV Sub contractor)
Reference: CN# W912DQ-12-D-3012

SUMMARY OF DEFINITIONS:
Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
TVOA: Sample BE928 has analytes that have been qualified "R" due to container temperatures greater than 6 degree C and samples were analyzed outside the 7 days technical holding time.
TV-SIM: Samples BE921, BE922, BE923, BE924, BE925, BE926, BE928 have analytes that have been qualified "R" due to container temperatures greater than 6 degree C and samples were analyzed outside the 7 days technical holding time.
Major Findings:
TVOA: Samples BE921, BE922, BE923, BE924, BE925, BE926, BE928 have analytes that have been qualified "J", "J+" or "J-".
TV-SIM: None.
PEST: Samples BE909, BE910, BE911, BE912, BE913, BE920, BE922RX, BE923, BE924, BE925, BE926 and BE928 have analytes that have been qualified "J", "J+" or "J-".
Minor Findings:
TVOA/TVOA-SIM/Pest: One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENTS: One or more analytes have exceeded project action level for one or more samples.

Reviewer Name(s): Reginald St-Juste/Archana Mirle

Approver's Signature:

Date: 06/06/2018

Name: Russell Arnone

Affiliation: USEPA/R2/HWSB/HWSS

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	Explanation		
	INORGANICS	ORGANICS	CHLORINATED DIOXIN/FURAN
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: TVOA/TVOA-SIM (MA 2877.2)

The current SOP HW-34A (Revision 1) September 2016, USEPA Region II for the evaluation of Trace Volatile organic data generated through Statement of Work SOM02.2, and any future editorial revisions of SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for TVOA organic fraction is not validated.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as unusable, "R". Use professional judgment to qualify detects and non-detects for aqueous sample whose temperature is above 6 degree or below 2-degree C Qualifications were applied to the samples and analytes as shown below.

TVOA:
The following aqueous sample was not properly cooled, temperature greater than 6 degrees C (6.9 degrees C) and the analysis were not performed within the technical holding time. Detects are qualified J. Non-detects are qualified as unusable “R”.

BE928

The following aqueous samples were not properly cooled, temperature greater than 6 degrees C (6.9 degrees C) and the analysis were performed within the technical holding time. Detects are qualified J. Non-detects are qualified as “UJ”.

BE921, BE922, BE923, BE924, BE925, BE926, BE928

TV-SIM:
The following aqueous samples were not properly cooled, temperature greater than 6 degrees C (6.9 degrees C) and the analysis were not performed within the technical holding time. Detects are qualified J. Non-detects are qualified as unusable “R”.

BE921, BE922, BE923, BE924, BE925, BE926 and BE928

2. DEUTERATED MONITORING COMPOUNDS (DMC’s)

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside Table 6 of the SOP HW 34A (Rev 1), qualifications were applied as per Table 7 of the SOP HW 34A (Rev 1) to all the samples and analytes as shown below.

TVOA:
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Non-detects are not qualified.

2-Hexanone-d5 BE922
4-Methyl- 2-pentanone, 2-Hexanone

TV-SIM:
No problems were found for this criterion.

3. MATRIX SPIKE/ MATRIX SPIKE RECOVERY:

MS/MSD data is generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data.

Not applicable.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 5 of SOP HW-34A (Rev 1).

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination: BE918 and BE925

. **TVOA:**
The following trace volatile sample has contaminant analyte concentrations reported less than 2x the CRQL. The associated trip blank has contaminant analyte concentration less than the 2x the CRQL. Detected compounds are qualified U. Non-detected compounds are not qualified. Sample concentrations have been reported at the CRQL.

Acetone BE923, BE924, BE926 and BE928

C) Trip blank contamination: BE908 and BE921

TVOA:
The following trace volatile sample has contaminant analyte concentrations reported less than 2x the CRQL. The associated trip blank has contaminant analyte concentration less than the 2x the CRQL. Detected compounds are qualified U. Non-detected compounds are not qualified. Sample concentrations have been reported at the CRQL.

Methylene Chloride BE923 and BE926

TV-SIM:
No problems were found for this criterion.

D) Storage Blank associated with VOA samples only:

No problems were found for this criterion.

E) Tentatively Identified Compounds:

Tentatively Identified Compounds (TICs) for TVOA organic fraction are not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene. If the mass calibration is in error, all associated data will be classified as unusable "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

6. CALIBRATION:

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

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial and continuing calibration should meet the minimum RRF criteria as listed in Table 2 of SOP HW 34A (Rev 1). If RRF is less than minimum RRF specified in Table 2 for all target analytes, use professional judgment and all detects in the sample will be qualified as "J+" or "R". All non-detects for that compound will be rejected "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares

the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration.

Percent RSD must be less than maximum %RSD in Table 2 of SOP HW 34A (Rev 1) for all target analytes. For the opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 2 of SOP HW 34A (Rev 1) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and Non-detects are flagged "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

The following sample is associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Non-detects are qualified as estimated UJ.

1,1-Dichloroethene BE928

Carbon disulfide BE928

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range as specified in Table 9 of SOP HW 34A (Rev 1) of the associated continuing calibration internal standard area. The retention time of the internal standards must be within the range as specified in Table 9 of SOP HW 34A (Rev 1). If the area count is greater than, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the associated standard, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time were not met as specified in Table 9 of SOP HW 34A (Rev 1), the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction. Qualifications were applied to the samples and analytes as shown below. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

8. FIELD DUPLICATES: BE916 and BE919

No problems were found for this criterion.

9. COMPOUND IDENTIFICATION:

Target compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary m/z intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an

adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

None.

11. FIELD DOCUMENTATION:

No problems were identified.

12. OTHER PROBLEMS:

TVOA:
Samples BE923, BE924 are qualified J for Methyl-tert-butyl ether for being outside of the calibration curve and reanalysis was not performed.

Sample BE924 is qualified J for Vinyl Chloride for being outside of the calibration curve and reanalysis was not performed.

Sample BE926 is qualified J for cis-1, 2-Dichloroethene for being outside of the calibration curve and reanalysis was not performed.

TV-SIM:
None

Laboratory Control Sample(LCS): VLCSXB and VLCSYD
No problems were found for this criterion.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

TVOA:
The following dilution samples were only used for one or more analytes.
BE916 and BE919

TVOA-SIM:
No problems were found for this criterion.

ANALYSIS: PESTICIDES (MA 2874.0)

The current SOP HW-36A (Revision 1) October 2016, USEPA Region II for the evaluation of Pesticides data generated through Statement of Work SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. If the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

The cooler temperature exceeds 6°C (6.8°C, 6.9°C) for the following water samples, but the samples were extracted and analyzed with in the technical holding time criteria. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

BE910, BE911, BE912, BE913, BE926, BE928, BE925, BE922

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside Table 7 of the SOP HW-36A (Revision 1), qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

The relative percent difference (RPD) between the following matrix spike and matrix spike duplicate recoveries is outside criteria. Detects are qualified as estimated J. Non-detects are not qualified.

Dieldrin BE915, BE915MS, BE915MSD

4,4'-DDT BE915, BE915MS, BE915MSD

4. LABORATORY CONTROL RECOVERY (LCS):

LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U". Qualifications were applied to the samples and analytes as shown below.

A) Method/Instrument blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination: BE918/BE925

The following pesticide samples have analyte concentrations reported less than the CRQL. The associated field blank concentration is less than the CRQL. Detected compounds are qualified U. Non-detected compounds are not qualified. Reported sample concentrations have been elevated to the CRQL.

Endosulfan sulfate BE917, BE923, BE924, BE926

Methoxychlor BE913, BE915MS, BE915MSD

Dieldrin BE910, BE911, BE913, BE914, BE923, BE924, BE926, BE928, BE920

Trans-Chlordane BE910, BE911, BE923, BE924, BE926, BE928

4,4-DDT BE909, BE910, BE911, BE913, BE914, BE919, BE923, BE924, BE926, BE928, BE920

6. CALIBRATION:

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

A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

For the PESTICIDE fraction, if %RSD exceeds 20% for all analytes except alpha-BHC and delta-BHC 25%, for the two surrogates and Toxaphene 30%, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) The Percent Difference (%D) for each of the SCP and surrogate in the PEM used for CCV must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference (%D) between the calibration Factor (CF) for each of the SCP and surrogate in the Calibration

Verification Standard (CS3) and the mean calibration factor from the initial calibration must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference not within limits, detected associated compounds are qualified "J" and non-detected associated compounds are qualified "UJ". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. FIELD DUPLICATES: BE916/BE919

No problems were found for this criterion.

8. COMPOUND IDENTIFICATION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

Percent Differences	Qualifier
0% - 25%	No qualification
26% - 200%	Professional Judgment
101% - 200% (interference detected, either column)	JN
> 50% (pesticide value < CRQL, value raised to CRQL)	U
> 200%	R

The following samples were qualified for % difference on the two columns.

BE909, BE910, BE911, BE913, BE915, BE917, BE919, BE920, BE922RX, BE923, BE924, BE925, BE926, BE915MS, BE915MSD

9. CONTRACT PROBLEMS NON-COMPLIANCE:

None.

10. FIELD DOCUMENTATION:

No problems were identified.

11. OTHER PROBLEMS:

The recoveries of Tetrachloro-m-xylene in PBLK03 and PBLK99 were low and outside acceptance limits. The affected samples, BE922, BE923, BE924, BE925 and BE928 were re-extracted and reanalyzed. The re-extractions were performed outside contract required holding time. There was insufficient volume of sample to perform re-extraction for sample BE926.

Sample BE922 contains sulfur and underwent sulfur cleanup. Even after cleanup, there was significant baseline rise on DB-35MS column. BE922RX has much better baseline after sulfur cleanup.

12. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

The following dilution samples were only used for one or more analytes.

BE923DL, BE924DL, BE926DL

The following re-extracted/reanalyzed or initial analysis samples were not used.

BE922, BE923RX, BE923RXDL, BE924RX, BE924RXDL, BE928RX

EXECUTIVE NARRATIVE

Case No.:47571
Site: Chemical Insecticide Corporation
Number of Samples: 12 (Water)
Analysis: Metals (ICP-MS)

SDG No.: MBE909
Laboratory: ALS Environmental (SLC).
Sampling dates: 4/23/2018 – 4/24/2018
Validation SOP: HW-3b (Rev 1)

QAPP
Contractor: SDV IOI JV
Reference: CN# W912DQ-12-D-3012

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
Samples MBE911, MBE912, MBE913, MBE914, MBE915, MBE916, MBE919, MBE920 have analytes that have been qualified J, J+ or J-.

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT: None.

Reviewer Name(s): Jianwei Huang

Approver's Signature: **Date: 06/01/2018**

Name: **Narendra Kumar**

Affiliation: USEPA/R2/HWSB/HWSS

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	Explanation		
	INORGANICS	ORGANICS	CHLORINATED DIOXIN/FURAN
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-MS

The current SOP HW-3b (Rev 1) September 2016, USEPA Region II for the evaluation of ICP-MS metals generated through Statement of Work ISOM02.2, and any future editorial revisions of ISOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony MBE909, MBE910, MBE911, MBE912, MBE913, MBE915, MBE917, MBE920

Beryllium MBE909, MBE910, MBE911, MBE912, MBE913, MBE914, MBE916, MBE917, MBE919, MBE920

Cadmium MBE911, MBE912, MBE913, MBE914, MBE916, MBE917, MBE919

Cobalt MBE911, MBE912, MBE914, MBE916, MBE919, MBE920

Copper MBE914, MBE916, MBE920

Lead MBE911, MBE912, MBE914, MBE916, MBE920

Silver MBE909, MBE910, MBE911, MBE912, MBE915, MBE917, MBE919

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated ICB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony MBE909, MBE910, MBE911, MBE912, MBE913, MBE915, MBE917, MBE920

Beryllium MBE909, MBE910, MBE911, MBE912, MBE913, MBE914, MBE916, MBE917, MBE919, MBE920

Cadmium MBE911, MBE912, MBE913, MBE914, MBE916, MBE917, MBE919

Copper MBE914, MBE916, MBE920

Lead MBE911, MBE912, MBE914, MBE916, MBE920

Silver MBE909, MBE910, MBE911, MBE912, MBE915, MBE917, MBE919

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated PB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony MBE909, MBE910, MBE911, MBE912, MBE913, MBE915, MBE917, MBE920

Beryllium MBE909, MBE910, MBE911, MBE912, MBE913, MBE914, MBE916, MBE917, MBE919, MBE920

Chromium MBE911, MBE912, MBE914

Copper MBE914, MBE916, MBE920

Silver MBE909, MBE910, MBE911, MBE912, MBE915, MBE917, MBE919

Field Blank MBE918

The following sample has analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Field Blank analyte results are greater than or equal to MDLs but less than or equal to CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

Zinc MBE914

The following sample has analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Field Blank analyte results are greater than CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

Aluminum MBE912

The following samples have analyte results greater than Field Blank Results, but less than 10x the Field Blank Results. The associated Field Blank analyte results are greater than CRQL. Detected analytes are qualified J.

Aluminum MBE911, MBE913, MBE914, MBE916, MBE919, MBE920

4. **INTERFERENCE CHECK SAMPLE**

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±2X CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix

spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

No problems were found for this criterion.

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE (MBE916/MBE919)

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

The following Duplicate and original water sample results are greater than or equal to 5x the CRQL and RPD is greater than 20%. Detected analytes are qualified J.

Manganese MBE916, MBE919

The following Duplicate and/or original water sample results are less than 5x the CRQL and absolute difference between duplicate and original samples are greater than the CRQL. Detected analytes are qualified J. Non-detected analytes are qualified UJ.

Copper, Lead and Zinc MBE916, MBE919

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration

is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10. For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

The following aqueous sample is associated with Serial Dilution (SD) sample that has analyte percent different %D greater than 10% but less than 100%. The original sample analyte concentrations are greater than 50xMDLs. Detects are qualified as estimated J. Non-detects are not qualified.

Copper and Zinc MBE915

10. ICP-MS TUNE ANALYSIS

The Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) tune serves as an initial demonstration of instrument stability and precision. Prior to calibration, the laboratory shall analyze or scan the ICP-MS tuning solution at least five times (5x) consecutively. The tuning solution contains 100 µg/L of Be, Mg, Co, In, and Pb. The solution shall contain all required isotopes of the above elements. The laboratory shall make any adjustments necessary to bring peak width within the instrument manufacturer's specifications and adjust mass resolution to within 0.1 u over the range of 6-210 u. The Percent Relative Standard Deviation (%RSD) of the absolute signals for all analytes in the tuning solution must be < 5%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

11. ICP-MS INTERNAL STANDARDS

The analysis of Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) internal standards determines the existence and magnitude of instrument drift and physical interferences. The criteria for evaluation of internal standard results apply to all analytical and Quality Control (QC) samples analyzed during the run, beginning with the calibration.
All samples analyzed during a run, with the exception of the ICP-MS tune, shall contain internal standards. A minimum of five internal standards shall be added to each sample. The laboratory shall monitor the same internal standards throughout the entire analytical run and shall assign each analyte to at least one internal standard. The Percent Relative Intensity (%RI) in the sample shall fall within 60-125% of the response in the calibration blank. If the %RI of the response in the sample falls outside of these limits, the laboratory shall reanalyze the original sample at a two-fold dilution with internal standard added. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

12. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

Not applicable.

EXECUTIVE NARRATIVE

Case No.:47571
Site: Chemical Insecticide Corporation
Number of Samples: 13 (Water)
Analysis: Metals (ICP-MS)

SDG No.: MBE922
Laboratory: ALS Environmental (SLC).
Sampling dates: 4/25/2018 – 4/26/2018
Validation SOP: HW-3b (Rev 1)

QAPP
Contractor: SDV IOI JV
Reference: CN# W912DQ-12-D-3012

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
Samples MBE922, MBE923, MBE926, MBE927, MBE928, MBE930, MBE931 and MBE935 have analytes that have been qualified J, J+ or J-.

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	One or more analytes have exceeded project action level for one or more samples.

Reviewer Name(s): Jianwei Huang

Approver's Signature: **Date: 06/08/2018**

Name: Russell Arnone

Affiliation: USEPA/R2/HWSB/HWSS

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	Explanation		
	INORGANICS	ORGANICS	CHLORINATED DIOXIN/FURAN
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-MS

The current SOP HW-3b (Rev 1) September 2016, USEPA Region II for the evaluation of ICP-MS metals generated through Statement of Work ISOM02.2, and any future editorial revisions of ISOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony MBE922, MBE923, MBE927, MBE930, MBE933, MBE935

Beryllium MBE922, MBE923, MBE924, MBE926, MBE927, MBE928, MBE929, MBE930, MBE931, MBE933, MBE935

Cadmium MBE922, MBE923, MBE926, MBE927, MBE929, MBE930, MBE931, MBE935

Cobalt MBE923, MBE924, MBE926, MBE927, MBE928, MBE934, MBE935

Copper MBE923, MBE924, MBE926, MBE928

Lead MBE923, MBE924, MBE926, MBE927, MBE928, MBE929, MBE931, MBE934, MBE935

Silver MBE922, MBE923, MBE924, MBE927, MBE929, MBE930, MBE931, MBE933, MBE934, MBE935

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated ICB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony MBE922, MBE923, MBE927, MBE930, MBE933, MBE935

Beryllium MBE922, MBE923, MBE924, MBE925, MBE926, MBE927, MBE928, MBE929, MBE930, MBE931, MBE933, MBE935

Cadmium MBE922, MBE923, MBE926, MBE927, MBE929, MBE930, MBE931, MBE935

Lead MBE923, MBE924, MBE925, MBE926, MBE927, MBE928, MBE929, MBE931, MBE934, MBE935

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated PB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony MBE922, MBE923, MBE927, MBE930, MBE933, MBE935

Beryllium MBE922, MBE923, MBE924, MBE926, MBE927, MBE928, MBE929, MBE930, MBE931, MBE933, MBE935

Chromium MBE924, MBE926, MBE928, MBE929, MBE930, MBE931, MBE934

Copper MBE923, MBE924, MBE926, MBE928

Lead MBE923, MBE924, MBE926, MBE927, MBE928, MBE929, MBE931, MBE934, MBE935

Silver MBE922, MBE923, MBE924, MBE927, MBE929, MBE930, MBE931, MBE933, MBE934, MBE935

Field Blank MBE925

The following samples have analyte results greater than or equal to MDLs but less than or equal to CRQLs. The associated Field Blank analyte results are greater than CRQLs. Detected analytes are qualified U. Non-detected analytes are not qualified. Sample results are elevated to CRQLs.

Aluminum MBE927, MB934

Zinc MBE928

The following samples have analyte results greater than CRQLs but less than the field blank. The associated Field Blank analyte results are greater than CRQLs. The sample results are raised to the field blank and qualified U.

Zinc MBE924, MBE934

The following samples have analyte results greater than Field Blank Results, but less than 10x the Field Blank Results. The associated Field Blank analyte results are greater than CRQL. Detected analytes are qualified J.

Aluminum MBE923, MBE926, MBE928, MBE930, MBE931

Zinc MBE922, MBE923, MBE926, MBE927, MBE930, MBE935

4. **INTERFERENCE CHECK SAMPLE**

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±2X CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

No problems were found for this criterion.

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE (MBE929/MBE931)

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No problems were found for this criterion.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10. For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

No problems were found for this criterion.

10. ICP-MS TUNE ANALYSIS

The Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) tune serves as an initial demonstration of instrument stability and precision. Prior to calibration, the laboratory shall analyze or scan the ICP-MS tuning solution at least five times (5x) consecutively. The tuning solution contains 100 µg/L of Be, Mg, Co, In, and Pb. The solution shall contain all required isotopes of the above elements. The laboratory shall make any adjustments necessary to bring peak width within the instrument manufacturer's specifications and adjust mass resolution to within 0.1 u over the range of 6-210 u. The Percent Relative Standard Deviation (%RSD) of the absolute signals for all analytes in the tuning solution must be < 5%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

11. ICP-MS INTERNAL STANDARDS

The analysis of Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) internal standards determines the existence and magnitude of instrument drift and physical interferences. The criteria for evaluation of internal standard results apply to all analytical and Quality Control (QC) samples analyzed during the run, beginning with the calibration.
All samples analyzed during a run, with the exception of the ICP-MS tune, shall contain internal standards. A minimum of five internal standards shall be added to each sample. The laboratory shall monitor the same internal standards throughout the entire analytical run and shall assign each analyte to at least one internal standard. The Percent Relative Intensity (%RI) in the sample shall fall within 60-125% of the response in the calibration blank. If the %RI of the response in the sample falls outside of these limits, the laboratory shall reanalyze the original sample at a two-fold dilution with internal standard added. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

12. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

Not applicable.

EXECUTIVE NARRATIVE

Case No. : 47571
Site: Chemical Insecticide Corp.
Number of Samples: 8 (Water)
Analysis: TVOA, TVOASIM, PEST

SDG No.: BE927
Laboratory: Shealy Environmental Services, INC
Sampling dates: 4/25/2018-4/26/2018
Validation SOP: HW-34A (Rev 1), HW 36 (Rev 1)

QAPP:
Contractor: Tetra Tech (SDV IOI JV Sub contractor)
Reference: CN: # W912DQ-12-D-3012

SUMMARY OF DEFINITIONS:
Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None.

Major Findings:
TVOA: Samples BE927, BE929, BE931, BE932, BE933, BE934 and BE935 have analytes that have been qualified "J", "J+" or "J
TVOA-SIM: Sample BE927 has analytes that have been qualified "J", "J+" or "J

ARO: All samples with exception of samples BE931 and BE935 have analytes that have been qualified "J", "J+" or "J

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENTS:	One or more analytes have exceeded project action level for one or more samples in all analyses.

Reviewer Name(s): Dorina Christina Alliu

Approver's Signature: **Date: 06/08/2018**

Name: **Narendra Kumar**

Affiliation: USEPA/R2/HWSB/HWSS

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	Explanation		
	INORGANICS	ORGANICS	CHLORINATED DIOXIN/FURAN
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: TVOA

The current SOP HW-34A (Revision 1) September 2016, USEPA Region II for the evaluation of Trace Volatile organic data generated through Statement of Work SOM02.2 and any future editorial revisions of SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for TVOA organic fraction is not validated.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as unusable, "R". Use professional judgment to qualify detects and non-detects for aqueous sample whose temperature is above 6 degree or below 2degree C Qualifications were applied to the samples and analytes as shown below.

TVOA:
The cooler temperature exceeds 6°C (6.9°C). Detected compounds are qualified J. Non-detected compounds are qualified UJ.

BE927

TVOA-SIM:
The cooler temperature exceeds 6°C (6.9°C). Detected compounds are qualified J. Non-detected compounds are qualified UJ.

BE927

2. DEUTERATED MONITORING COMPOUNDS (DMC's)

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside Table 6 of the SOP HW 34A (Rev 1), qualifications were applied as per Table 7 of the SOP HW 34A (Rev 1) to all the samples and analytes as shown below.

No problems were found for this criterion.

3. MATRIX SPIKE/ MATRIX SPIKE RECOVERY:

MS/MSD data is generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data.

Not applicable.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 5 of SOP HW-34A (Rev 1).

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

C) Trip blank contamination: BE932

No qualification was applied for this criterion.

D) Storage Blank associated with VOA samples only:

No problems were found for this criterion.

E) Tentatively Identified Compounds:

Tentatively Identified Compounds (TICs) for TVOA organic fraction are not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene. If the mass calibration is in error, all associated data will be classified as unusable "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an

experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial calibration, ICV and continuing calibration should meet the minimum RRF criteria as listed in Table 2 of SOP HW 34A (Rev 1). If RRF is less than minimum RRF specified in Table 2 for all target analytes, use professional judgment and all detects in the sample will be qualified as "J+" or "R". All non-detects for that compound will be rejected "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration.

Percent RSD must be less than maximum %RSD in Table 2 of SOP HW 34A (Rev 1) for all target analytes. For the Initial Calibration Verification ICV/opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 2 of SOP HW 34A (Rev 1) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and Non-detects are flagged "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

TVOA:
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detected are qualified as estimated J. Non-detects are qualified as estimated UJ.
1,1-Dichloroethene BE927, BE929, BE931, BE932, BE933, BE934, BE935

Carbon disulfide BE927, BE929, BE931, BE932, BE933, BE934, BE935

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range as specified in Table 9 of SOP HW 34A (Rev 1) of the associated continuing calibration internal standard area. The retention time of the internal standards must be within the range as specified in Table 9 of SOP HW 34A (Rev 1). If the area count is greater than, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the associated standard, all positive

results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time were not met as specified in Table 9 of SOP HW 34A (Rev 1), the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction. Qualifications were applied to the samples and analytes as shown below. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

8. FIELD DUPLICATES: BE929/BE931

No problems were found for this criterion.

9. COMPOUND IDENTIFICATION:

Target compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary m/z intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

None.

11. FIELD DOCUMENTATION:

No problems were identified.

12. OTHER PROBLEMS:

None.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

ANALYSIS: PESTICIDES

The current SOP HW-36A (Revision 1) October 2016, USEPA Region II for the evaluation of Pesticides data generated through Statement of Work SOM02.2 and any future editorial revisions of SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. If the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

The following Pest water samples were outside primary holding time criteria. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

BE927RX, BE929RX, BE930RX, BE931RX, BE933RX, BE934RX, BE935RX

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside Table 7 of the SOP HW-36A (Revision 1), qualifications were applied to the samples and analytes as shown below.

The following sample analyses have DMC/surrogate percent recoveries less than the expanded minimum criteria. Detects are qualified J-. Non-detects are qualified UJ.

Tetrachloro-m-xylene BE933
alpha-BHC, beta-BHC, delta-BHC, gamma-BHC (Lindane), Heptachlor, Aldrin, Heptachlor epoxide, Endosulfan I, Dieldrin, 4,4'-DDE, Endrin, Endosulfan II, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT, Methoxychlor, Endrin ketone, Endrin aldehyde, cis-Chlordane, trans-Chlordane, Toxaphene

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

The following matrix/matrix spike duplicate samples have percent recoveries greater than or equal to the expanded minimum criteria but less than the primary minimum criteria. Detects are qualified J. Non-detects are qualified UJ.

Endrin BE927MSD, BE927MS

4. LABORATORY CONTROL RECOVERY (LCS):

LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U". Qualifications were applied to the samples and analytes as shown below.

A) Method/Instrument blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:

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

A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

For the PESTICIDE fraction, if %RSD exceeds 20% for all analytes except alpha-BHC and delta-BHC 25%, for the two surrogates and Toxaphene 30%, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) The Percent Difference (%D) for each of the SCP and surrogate in the PEM used for CCV must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference (%D) between the calibration Factor (CF) for each of the SCP and surrogate in the Calibration Verification Standard (CS3) and the mean calibration factor from the initial calibration must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference not within limits, detected associated compounds are qualified "J" and non-detected associated compounds are qualified "UJ". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. FIELD DUPLICATES: BE929/BE931

No problems were found for this criterion.

8. COMPOUND IDENTIFICATION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

Percent Differences	Qualifier
0% - 25%	No qualification
26% - 200%	Professional Judgment
101% - 200% (interference detected, either column)	JN
> 50% (pesticide value < CRQL, value raised to CRQL)	U
> 200%	R

The following samples were qualified for % difference on the two columns.

BE927, BE927MSD, BE927MS, BE929, BE929RX, BE930, BE930RX, BE931, BE931RX, BE933, BE933RX, BE934, BE935

9. CONTRACT PROBLEMS NON-COMPLIANCE:

Trip Blank BE932 only has TVOA analysis noted on the COCs for any of the samples, but they were on the sample containers. Issue was noted on email corresponds.

10. FIELD DOCUMENTATION:

No problems were identified.

11. OTHER PROBLEMS:

None.

12. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

Non-Conformance Report

April 26, 2018

Chemical Insecticide Corporation Superfund Site

Activity: Spring 2018 Sampling Event, April 25, 2018 sampling activities

Staff: PM: Hillary Weber, Chemist: Nick Weinberger, Field Supervisors: Matt Pingitor and Robert Cantagallo, Field Samplers: Alex Vali and Greg Wissink

Communication was sent to the CIC project team indicating that the CLP laboratories had multiple issues with samples arriving for analysis on 4.26.18. These issues and SDV JV's response and planned corrective actions are summarized below.

Field Issues

SDV JV was notified by USEPA DESA CLP Laboratories that samples arrived at the lab for analysis from CIC with incomplete paperwork. Issues included sample times that were on the bottle ware but not on the chain of custody as well as a MS/MSD sample that was submitted to the laboratory but not indicated as an MS/MSD on the chain of custody. Additionally, one VOA vial submitted was noted to have an air bubble greater than quality limits.

Disposition:

SDV JV PM and Subcontractor PM held a teleconference meeting at 10am to discuss the issue and to identify steps to support the field team for proper completion of paperwork for the balance of the event. An additional teleconference was held at 10:15am with the sampling team to review the issues and to stress the importance of review of the field files and bottle ware prior to submission to the laboratory.

Lab/Bottle ware Issue

SDV JV was notified by USEPA DESA CLP Laboratories that the quantity of VOA vials that are being submitted for VOC analysis was insufficient to perform both SOM 02.3 and SIM analysis.

Disposition:

The SDV JV PM and Chemist reviewed the analytical request form as it was not believed that SIM had been requested. However, after review of the analytical request form it was determined that the lower CRQL that had been requested for trace volatiles had driven the CLP laboratory to propose to run samples as both the requested SOM 02.3 as well as SIM to achieve the requested CRQLs. This was indicated on the laboratory assignment page with a second line of VOC samples listed in the assignment. Because this was missed from the assignment SDV JV did not order additional VOC VOAs for the

sampling event and can only provide the standard quantity of VOA vials (3) to the laboratory for this event. This issue has been noted and added to the project lessons learned and will be flagged in future requests by the SDV JV Chemist to ensure field preparations include additional bottle ware should CLP laboratories propose both SOM 02.3 and SIM analysis in future events. In previous events the CLP laboratories have indicated that they cannot achieve the trace volatile CRQLs and samples were only run for SOM02.3.

Should you have any further questions please feel free to contact me via phone at 913-909-2411 or email at hweber@ieeci.com

Thank you,

Hillary Weber

Hillary Weber, P.G.

SDV JV

APPENDIX H

MAROS Output Reports and Data Tables

MAROS Site Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

User Defined Site and Data Assumptions

Hydrogeology and Plume Information:

Groundwater Seepage Velocity:	35	ft/yr
Current Plume Length:	200	ft
Current Plume Width:	100	ft
Number of Tail Wells:	6	
Number of Source Wells:	3	

Downgradient Information:

Distance from Edge of Tail to Nearest:

Downgradient receptor:	500 ft
Downgradient property:	500 ft

Distance from Source to Nearest:

Downgradient receptor:	100 ft
Downgradient property:	100 ft

Contaminants of Concern (COC's)

ALPHA BHC (ALPHA HEXACHLOROCYCLOHE
ARSENIC
DINOSEB
TRICHLOROETHYLENE (TCE)
VINYL CHLORIDE

Well Summary

Well Name	Source / Tail / Delineation	Record Count	Sample Date Range Minimum	Sample Date Range Maximum	Priority Constituent
FU	D	46	3/1/2009	4/25/2018	ALPHA BHC (ALPHA HEXACH
GU	D	37	3/1/2009	4/25/2018	VINYL CHLORIDE
QD	T	47	3/1/2009	4/25/2018	ALPHA BHC (ALPHA HEXACH
UU	T	16	3/1/2009	4/25/2018	ARSENIC
BF-2	S	40	3/1/2009	4/25/2018	ARSENIC
BF-2D	S	39	3/1/2009	4/25/2018	VINYL CHLORIDE
MW-2BR	D	33	3/1/2009	4/25/2018	ARSENIC
MW-2I	D	16	3/1/2009	4/25/2018	ARSENIC
MW-2S	D	37	3/1/2009	4/25/2018	ALPHA BHC (ALPHA HEXACH
NUS-2D	D	37	3/1/2009	4/25/2018	ALPHA BHC (ALPHA HEXACH
MW-3BR	D	37	3/1/2009	4/25/2018	ALPHA BHC (ALPHA HEXACH
MW-3S	D	37	3/1/2009	4/25/2018	ALPHA BHC (ALPHA HEXACH
NUS-3D	D	16	3/1/2009	4/25/2018	VINYL CHLORIDE
NUS-3S	D	37	3/1/2009	4/25/2018	ARSENIC
BF-4	T	37	3/1/2009	4/25/2018	VINYL CHLORIDE
MW-4BR	D	37	3/1/2009	4/25/2018	ARSENIC

MAROS Site Summary

CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Edison **State:** New Jersey

MW-4S	D	31	3/1/2009	4/25/2018	ALPHA BHC (ALPHA HEXACH
BF-5	T	16	3/1/2009	4/25/2018	TRICHLOROETHYLENE (TCE)
MW-5BR	S	39	3/1/2009	4/25/2018	ARSENIC
MW-6BR	T	33	3/1/2009	12/12/2016	ARSENIC
MW-7BR	T	38	3/1/2009	4/25/2018	TRICHLOROETHYLENE (TCE)

MAROS COC Assessment

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Toxicity:

Contaminant of Concern	Representative Concentration (mg/L)	PRG (mg/L)	Percent Above PRG
TRICHLOROETHYLENE (TCE)	1.3E-01	1.0E-03	12488.4%
ARSENIC	6.4E-02	3.0E-03	2046.8%
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	3.4E-04	2.0E-05	1609.3%
VINYL CHLORIDE	1.5E-02	1.0E-03	1422.7%

Note: Top COCs by toxicity were determined by examining a representative concentration for each compound over the entire site. The compound representative concentrations are then compared with the chosen PRG for that compound, with the percentage exceedance from the PRG determining the compound's toxicity. All compounds above exceed the PRG.

Prevalence:

Contaminant of Concern	Class	Total Wells	Total Exceedance	Percent Exceedances	Total Detects
ARSENIC	MET	9	5	55.6%	8
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE	ORG	9	5	55.6%	5
TRICHLOROETHYLENE (TCE)	ORG	9	4	44.4%	7
VINYL CHLORIDE	ORG	9	3	33.3%	4

Note: Top COCs by prevalence were determined by examining a representative concentration for each well location at the site. The total exceedances (values above the chosen PRGs) are compared to the total number of wells to determine the prevalence of the compound.

Mobility:

Contaminant of Concern	Kd/Koc
VINYL CHLORIDE	0.042
TRICHLOROETHYLENE (TCE)	0.297
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	18.1
ARSENIC	25

Note: Top COCs by mobility were determined by examining each detected compound in the dataset and comparing their mobilities (Koc's for organics, assuming foc = 0.001, and Kd's for metals).

Priority Constituents by Well:

Well Name	Average	Max
BF-2	ARSENIC	ARSENIC
BF-2D	VINYL CHLORIDE	ALPHA BHC (ALPHA HEXAC
BF-4	VINYL CHLORIDE	ARSENIC
BF-5	TRICHLOROETHYLENE (TCE)	TRICHLOROETHYLENE (TCE

MAROS COC Assessment

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

FU	ALPHA BHC (ALPHA HEXAC	ALPHA BHC (ALPHA HEXAC
GU	VINYL CHLORIDE	ARSENIC
MW-2BR	ARSENIC	ARSENIC
MW-2I	ARSENIC	ARSENIC
MW-2S	ALPHA BHC (ALPHA HEXAC	ARSENIC
MW-3BR	ALPHA BHC (ALPHA HEXAC	ARSENIC
MW-3S	ALPHA BHC (ALPHA HEXAC	ARSENIC
MW-4BR	ARSENIC	ARSENIC
MW-4S	ALPHA BHC (ALPHA HEXAC	ARSENIC
MW-5BR	ARSENIC	VINYL CHLORIDE
MW-6BR	ARSENIC	ARSENIC
MW-7BR	TRICHLOROETHYLENE (TCE)	TRICHLOROETHYLENE (TCE
NUS-2D	ALPHA BHC (ALPHA HEXAC	ARSENIC
NUS-3D	VINYL CHLORIDE	ARSENIC
NUS-3S	ARSENIC	ARSENIC
QD	ALPHA BHC (ALPHA HEXAC	ALPHA BHC (ALPHA HEXAC
UU	ARSENIC	ARSENIC

MAROS Individual Well Summary Report

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

COC	Priority COC for Well?	Detection Frequency	Recent Sample Above Goal?	MK Trend	COV	95% UCL	Outlier	Distribution Assumption	Attained Cleanup?	
									Normal	Lognormal
BF-2										
BHCALPHA	NO	100 %	YES	D	0.65	0.0020	NO	Normal	NO	NO
AS	YES	100 %	YES	D	0.30	0.4876	NO	Lognormal	NO	NO
TCE	NO	50 %	NO	D	0.94	0.0010	YES	Lognormal	YES	NO
VC	NO	90 %	YES	NT	0.42	0.0107	YES	No distribution	NO	NO
BF-2D										
BHCALPHA	YES	100 %	YES	D	0.92	0.0019	NO	Normal	NO	NO
AS	NO	100 %	YES	D	0.62	0.0102	NO	Normal	NO	NO
TCE	NO	11 %	NO	NT	0.00	0.0005	YES	No distribution	YES	YES
VC	YES	100 %	YES	PI	0.27	0.0861	NO	Normal	NO	NO
BF-4										
BHCALPHA	NO	0 %	YES	ND	0.00	0.0001	NO	No distribution	NO	NO
AS	YES	11 %	NO	S	0.00	0.0011	YES	No distribution	YES	YES
TCE	NO	0 %	NO	ND	0.00	0.0005	NO	No distribution	YES	YES
VC	YES	0 %	NO	ND	0.00	0.0005	NO	No distribution	YES	YES
BF-5										
BHCALPHA	NO	0 %	YES	ND	0.00	0.0001	NO	Normal	NO	NO
AS	NO	50 %	NO	S	1.15	0.0031	YES	Normal	NO	NO
TCE	YES	75 %	YES	S	0.74	2.3667	NO	Normal	NO	NO
VC	NO	0 %	NO	ND	0.00	0.0005	NO	Normal	YES	YES
MW-5BR										
BHCALPHA	NO	100 %	YES	D	0.89	0.0008	YES	Lognormal	NO	NO
AS	YES	100 %	YES	D	0.18	0.1749	NO	Normal	NO	NO
TCE	NO	0 %	NO	ND	0.00	0.0005	NO	No distribution	YES	YES
VC	YES	100 %	YES	PD	0.38	0.0658	NO	Normal	NO	NO
MW-6BR										
BHCALPHA	NO	33 %	YES	S	0.00	0.0001	NO	No distribution	NO	NO
AS	YES	75 %	NO	NT	1.26	0.0059	YES	Lognormal	NO	NO
TCE	NO	25 %	NO	S	0.68	0.0006	YES	No distribution	YES	NO

MAROS Individual Well Summary Report

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

COC	Priority COC for Well?	Detection Frequency	Recent Sample Above Goal?	MK Trend	COV	95% UCL	Outlier	Distribution Assumption	Attained Cleanup?	
									Normal	Lognormal
VC	NO	38 %	NO	PI	1.24	0.0006	YES	No distribution	YES	NO
MW-7BR										
BHCALPHA	NO	0 %	YES	ND	0.00	0.0001	NO	No distribution	NO	NO
AS	NO	22 %	NO	S	1.55	0.0012	YES	No distribution	YES	NO
TCE	YES	90 %	NO	S	0.93	0.0033	YES	Lognormal	NO	NO
VC	NO	0 %	NO	ND	0.00	0.0005	NO	No distribution	YES	YES
QD										
BHCALPHA	YES	70 %	YES	S	0.56	0.0000	NO	Normal	NO	NO
AS	NO	0 %	NO	ND	0.00	0.0010	NO	No distribution	YES	YES
DINOSEB	NO	89 %	YES	S	0.52	0.0060	NO	Normal	NO	NO
TCE	NO	90 %	YES	NT	0.42	0.0020	NO	Normal	NO	NO
VC	NO	0 %	NO	ND	0.00	0.0005	NO	No distribution	YES	YES
UU										
BHCALPHA	NO	0 %	YES	ND	0.00	0.0001	NO	Normal	NO	NO
AS	YES	75 %	NO	NT	0.98	0.0077	NO	Normal	NO	NO
TCE	NO	100 %	NO	S	0.47	0.0018	NO	Normal	NO	NO
VC	NO	0 %	NO	ND	0.00	0.0005	NO	Normal	YES	YES

Individual Well Cleanup Status - Optional Analysis Results

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

From Period: 3/1/2009 **to** 4/25/2018

Well	Sample Size	Sample Mean	Sample Stdev.	Normal Distribution Assumption: Significantly < Cleanup Goal?	Power	Expected Sample	Lognormal Distribution Assumption: Significantly < Cleanup Goal?	Power	Expected Sample
ALPHA BHC (ALPHA HEXAC	Cleanup Goal (mg/L) =			0.00002	Alpha Level =		0.05	Expected Power =	0.8
BF-2	9	1.32E-03	8.88E-04	NO	S/E	S/E	NO	S/E	S/E
BF-2D	9	1.12E-03	1.10E-03	NO	S/E	S/E	NO	S/E	S/E
BF-4	9	5.00E-05	1.36E-12	NO	S/E	S/E	NO	S/E	S/E
BF-5	4	5.00E-05	0.00E+00	NO	S/E	S/E	NO	S/E	S/E
MW-5BR	9	4.70E-04	4.23E-04	NO	S/E	S/E	NO	S/E	S/E
MW-6BR	8	3.73E-05	1.94E-05	NO	S/E	S/E	NO	S/E	S/E
MW-7BR	9	5.00E-05	1.36E-12	NO	S/E	S/E	NO	S/E	S/E
QD	9	3.62E-05	1.71E-05	NO	S/E	S/E	NO	S/E	S/E
UU	4	5.00E-05	0.00E+00	NO	S/E	S/E	NO	S/E	S/E
ARSENIC	Cleanup Goal (mg/L) =			0.003	Alpha Level =		0.05	Expected Power =	0.8
BF-2	9	3.79E-01	1.03E-01	NO	S/E	S/E	NO	S/E	S/E
BF-2D	9	7.08E-03	4.35E-03	NO	S/E	S/E	NO	S/E	S/E
BF-4	8	9.18E-04	2.33E-04	YES	1.000	<=3	YES	1.000	<=3
BF-5	4	1.42E-03	1.07E-03	YES	0.843	4	NO	0.630	6
MW-5BR	9	1.51E-01	2.30E-02	NO	S/E	S/E	NO	S/E	S/E
MW-6BR	7	2.72E-03	1.91E-03	NO	0.100	>100	NO	0.084	>100
MW-7BR	8	9.23E-04	3.08E-04	YES	1.000	<=3	YES	0.999	<=3
QD	8	1.00E-03	0.00E+00	YES	1.000	<=3	YES	1.000	<=3
UU	4	3.48E-03	2.64E-03	NO	S/E	S/E	NO	S/E	S/E
DINOSEB	Cleanup Goal (mg/L) =			0.007	Alpha Level =		0.05	Expected Power =	0.8
QD	8	4.15E-03	2.24E-03	YES	0.962	5	NO	0.146	>100
TRICHLOROETHYLENE (TCE)	Cleanup Goal (mg/L) =			0.001	Alpha Level =		0.05	Expected Power =	0.8
BF-2	9	6.44E-04	2.72E-04	YES	0.983	5	YES	0.802	9
BF-2D	8	4.70E-04	8.49E-05	YES	1.000	<=3	YES	1.000	<=3
BF-4	8	5.00E-04	0.00E+00	YES	1.000	<=3	YES	1.000	<=3
BF-5	4	1.13E+00	7.80E-01	NO	S/E	S/E	NO	S/E	S/E

Individual Well Cleanup Status - Optional Analysis Results

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

From Period: 3/1/2009 **to** 4/25/2018

				Normal Distribution Assumption			Lognormal Distribution Assumption		
Well Name	**Sample Size**	**Sample Mean**	**Sample Stdev.**	**Significantly < Cleanup Goal?**	**Power**	**Expected Sample**	**Significantly < Cleanup Goal?**	**Power**	**Expected Sample**
MW-5BR	8	5.00E-04	0.00E+00	YES	1.000	<=3	YES	1.000	<=3
MW-6BR	7	4.54E-04	1.21E-04	YES	1.000	<=3	YES	1.000	<=3
MW-7BR	9	1.84E-03	8.88E-04	NO	S/E	S/E	NO	S/E	S/E
QD	9	1.68E-03	4.32E-04	NO	S/E	S/E	NO	S/E	S/E
UU	4	1.03E-03	4.77E-04	NO	S/E	S/E	NO	S/E	S/E
VINYL CHLORIDE		Cleanup Goal (mg/L) =		0.001	Alpha Level =		0.05	Expected Power =	0.8
BF-2	9	8.65E-03	2.09E-03	NO	S/E	S/E	NO	S/E	S/E
BF-2D	9	7.35E-02	1.94E-02	NO	S/E	S/E	NO	S/E	S/E
BF-4	8	5.00E-04	0.00E+00	YES	1.000	<=3	YES	1.000	<=3
BF-5	4	5.00E-04	0.00E+00	YES	1.000	<=3	YES	1.000	<=3
MW-5BR	9	5.10E-02	2.05E-02	NO	S/E	S/E	NO	S/E	S/E
MW-6BR	7	4.51E-04	1.52E-04	YES	1.000	<=3	YES	0.934	5
MW-7BR	8	5.00E-04	0.00E+00	YES	1.000	<=3	YES	1.000	<=3
QD	8	5.00E-04	0.00E+00	YES	1.000	<=3	YES	1.000	<=3
UU	4	5.00E-04	0.00E+00	YES	1.000	<=3	YES	1.000	<=3

Note: N/C refers to "not conducted" because of insufficient data (N<4); S/E indicates the sample mean significantly exceeds the cleanup level and thus no analysis is conducted; Sample Size is the number of concentration data in a sampling location that are used in the power analysis; Expected Sample Size is the number of concentration data needed to reach the Expected Power under current sample variability; The Target Level is the expected mean concentration in wells after cleanup attainment, it is only used in individual well celanup status evaluation. The Student's t-test on mean difference is used in this analysis. Refer to Appendix A.6 of MAROS Manual for details.

MAROS Power Analysis for Individual Well Cleanup Status

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

From Period: 3/1/2009 **to** 4/25/2018

Well Name	Sample Size	Sample Mean	Sample Stdev.	Normal Distribution Cleanup Status	Lognormal Distribution Cleanup Status	Alpha Level	Expected Power
ALPHA BHC (ALPHA HEXACHLOR	Cleanup Goal (mg/L) =		0.00002	Target Level (mg/L) =		0.000016	
BF-2	9	1.32E-03	8.88E-04	Cont Sampling	Not Attained	0.05	0.8
BF-2D	9	1.12E-03	1.10E-03	Cont Sampling	Cont Sampling	0.05	0.8
BF-4	9	5.00E-05	1.36E-12	Not Attained	Not Attained	0.05	0.8
BF-5	4	5.00E-05	0.00E+00	Not Attained	Not Attained	0.05	0.8
MW-5BR	9	4.70E-04	4.23E-04	Cont Sampling	Cont Sampling	0.05	0.8
MW-6BR	8	3.73E-05	1.94E-05	Cont Sampling	Cont Sampling	0.05	0.8
MW-7BR	9	5.00E-05	1.36E-12	Not Attained	Not Attained	0.05	0.8
QD	9	3.62E-05	1.71E-05	Cont Sampling	Not Attained	0.05	0.8
UU	4	5.00E-05	0.00E+00	Not Attained	Not Attained	0.05	0.8
ARSENIC	Cleanup Goal (mg/L) =		0.003	Target Level (mg/L) =		0.0024	
BF-2	9	3.79E-01	1.03E-01	Cont Sampling	Not Attained	0.05	0.8
BF-2D	9	7.08E-03	4.35E-03	Cont Sampling	Not Attained	0.05	0.8
BF-4	8	9.18E-04	2.33E-04	Attained	Attained	0.05	0.8
BF-5	4	1.42E-03	1.07E-03	Cont Sampling	Cont Sampling	0.05	0.8
MW-5BR	9	1.51E-01	2.30E-02	Cont Sampling	Not Attained	0.05	0.8
MW-6BR	7	2.72E-03	1.91E-03	Cont Sampling	Cont Sampling	0.05	0.8
MW-7BR	8	9.23E-04	3.08E-04	Attained	Cont Sampling	0.05	0.8
QD	8	1.00E-03	0.00E+00	Attained	Attained	0.05	0.8
UU	4	3.48E-03	2.64E-03	Cont Sampling	Cont Sampling	0.05	0.8
DINOSEB	Cleanup Goal (mg/L) =		0.007	Target Level (mg/L) =		0.0056	
QD	8	4.15E-03	2.24E-03	Cont Sampling	Cont Sampling	0.05	0.8
TRICHLOROETHYLENE (TCE)	Cleanup Goal (mg/L) =		0.001	Target Level (mg/L) =		0.0008	
BF-2	9	6.44E-04	2.72E-04	Attained	Cont Sampling	0.05	0.8
BF-2D	8	4.70E-04	8.49E-05	Attained	Attained	0.05	0.8
BF-4	8	5.00E-04	0.00E+00	Attained	Attained	0.05	0.8
BF-5	4	1.13E+00	7.80E-01	Cont Sampling	Cont Sampling	0.05	0.8
MW-5BR	8	5.00E-04	0.00E+00	Attained	Attained	0.05	0.8
MW-6BR	7	4.54E-04	1.21E-04	Attained	Cont Sampling	0.05	0.8
MW-7BR	9	1.84E-03	8.88E-04	Cont Sampling	Not Attained	0.05	0.8

MAROS Power Analysis for Individual Well Cleanup Status

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

From Period: 3/1/2009 **to** 4/25/2018

Well Name	Sample Size	Sample Mean	Sample Stdev.	Normal Distribution Cleanup Status	Lognormal Distribution Cleanup Status	Alpha Level	Expected Power
QD	9	1.68E-03	4.32E-04	Not Attained	Not Attained	0.05	0.8
UU	4	1.03E-03	4.77E-04	Cont Sampling	Cont Sampling	0.05	0.8
VINYL CHLORIDE	Cleanup Goal (mg/L) =	0.001		Target Level (mg/L) =	0.0008		
BF-2	9	8.65E-03	2.09E-03	Cont Sampling	Not Attained	0.05	0.8
BF-2D	9	7.35E-02	1.94E-02	Cont Sampling	Not Attained	0.05	0.8
BF-4	8	5.00E-04	0.00E+00	Attained	Attained	0.05	0.8
BF-5	4	5.00E-04	0.00E+00	Attained	Attained	0.05	0.8
MW-5BR	9	5.10E-02	2.05E-02	Cont Sampling	Not Attained	0.05	0.8
MW-6BR	7	4.51E-04	1.52E-04	Attained	Cont Sampling	0.05	0.8
MW-7BR	8	5.00E-04	0.00E+00	Attained	Attained	0.05	0.8
QD	8	5.00E-04	0.00E+00	Attained	Attained	0.05	0.8
UU	4	5.00E-04	0.00E+00	Attained	Attained	0.05	0.8

Note: N/C refers to "not conducted" because of insufficient data (N<4); S/E indicates the sample mean significantly exceeds the cleanup level and thus no analysis is conducted; Sample Size is the number of concentration data in a sampling location that are used in the analysis; Target Level is the expected mean concentration in wells after cleanup attainment, it is only used in individual well celanup status evaluation. The test for evaluating attainment status is from EPA (1992). Refer to Appendix A.6 of MAROS Manual for details.

MAROS Statistical Trend Analysis Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Time Period: 3/1/2009 **to** 4/25/2018
Consolidation Period: No Time Consolidation
Consolidation Type: Median
Duplicate Consolidation: Average
ND Values: Specified Detection Limit
J Flag Values : Actual Value

Well	Source / Tail	Number of Samples	Number of Detects	Average Conc. (mg/L)	Median Conc. (mg/L)	All Samples "ND" ?	Mann-Kendall Trend	Linear Regression Trend
ALPHA BHC (ALPHA HEXACHLOROCYCL								
BF-2	S	10	10	1.4E-03	1.3E-03	No	D	D
BF-2D	S	10	10	1.1E-03	8.9E-04	No	D	D
BF-4	T	10	0	5.0E-05	5.0E-05	Yes	ND	ND
BF-5	T	4	0	5.0E-05	5.0E-05	Yes	ND	ND
MW-5BR	S	10	10	4.6E-04	4.0E-04	No	D	D
MW-6BR	T	9	3	3.7E-05	5.0E-05	No	S	S
MW-7BR	T	10	0	5.0E-05	5.0E-05	Yes	ND	ND
QD	T	10	7	3.5E-05	2.9E-05	No	S	S
UU	T	4	0	5.0E-05	5.0E-05	Yes	ND	ND
ARSENIC								
BF-2	S	10	10	4.0E-01	3.5E-01	No	D	D
BF-2D	S	10	10	7.1E-03	5.0E-03	No	D	D
BF-4	T	9	1	9.3E-04	1.0E-03	No	S	PD
BF-5	T	4	2	1.4E-03	1.0E-03	No	S	D
MW-5BR	S	10	10	1.6E-01	1.5E-01	No	D	D
MW-6BR	T	8	6	3.1E-03	1.7E-03	No	NT	NT
MW-7BR	T	9	2	9.3E-04	1.0E-03	No	S	PD
QD	T	9	0	1.0E-03	1.0E-03	Yes	ND	ND
UU	T	4	3	3.5E-03	3.2E-03	No	NT	NT
DINOSEB								
QD	T	8	7	4.2E-03	4.8E-03	No	S	S
TRICHLOROETHYLENE (TCE)								
BF-2	S	10	5	6.9E-04	5.0E-04	No	D	D
BF-2D	S	9	1	4.7E-04	5.0E-04	No	NT	NT
BF-4	T	9	0	5.0E-04	5.0E-04	Yes	ND	ND

MAROS Statistical Trend Analysis Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Well Name	Source / Tail	Number of Samples	Number of Detects	Average Conc. (mg/L)	Median Conc. (mg/L)	All Samples "ND" ?	Mann-Kendall Trend	Linear Regression Trend
TRICHLOROETHYLENE (TCE)								
BF-5	T	4	3	1.1E+00	1.4E+00	No	S	S
MW-5BR	S	9	0	5.0E-04	5.0E-04	Yes	ND	ND
MW-6BR	T	8	2	4.6E-04	5.0E-04	No	S	NT
MW-7BR	T	10	9	2.0E-03	1.6E-03	No	S	S
QD	T	10	9	1.6E-03	1.6E-03	No	NT	PI
UU	T	4	4	1.0E-03	9.0E-04	No	S	D
VINYL CHLORIDE								
BF-2	S	10	9	8.4E-03	9.3E-03	No	NT	NT
BF-2D	S	10	10	7.2E-02	6.8E-02	No	PI	PI
BF-4	T	9	0	5.0E-04	5.0E-04	Yes	ND	ND
BF-5	T	4	0	5.0E-04	5.0E-04	Yes	ND	ND
MW-5BR	S	10	10	5.2E-02	5.7E-02	No	PD	D
MW-6BR	T	8	3	4.6E-04	5.0E-04	No	PI	NT
MW-7BR	T	9	0	5.0E-04	5.0E-04	Yes	ND	ND
QD	T	9	0	5.0E-04	5.0E-04	Yes	ND	ND
UU	T	4	0	5.0E-04	5.0E-04	Yes	ND	ND

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); No Detectable Concentration (ND)

The Number of Samples and Number of Detects shown above are post-consolidation values.

MAROS Mann-Kendall Statistics Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Time Period: 3/1/2009 **to** 4/25/2018
Consolidation Period: No Time Consolidation
Consolidation Type: Median
Duplicate Consolidation: Average
ND Values: Specified Detection Limit
J Flag Values : Actual Value

Well	Source/ Tail	Number of Samples	Number of Detects	Coefficient of Variation	Mann-Kendall Statistic	Confidence in Trend	All Samples "ND" ?	Concentration Trend
ALPHA BHC (ALPHA HEXACHLOROCYCLOHE								
BF-2	S	10	10	0.65	-26	98.9%	No	D
BF-2D	S	10	10	0.92	-30	99.7%	No	D
BF-4	T	10	0	0.00	0	46.4%	Yes	ND
BF-5	T	4	0	0.00	0	37.5%	Yes	ND
MW-5BR	S	10	10	0.89	-26	98.9%	No	D
MW-6BR	T	9	3	0.54	-3	58.0%	No	S
MW-7BR	T	10	0	0.00	0	46.4%	Yes	ND
QD	T	10	7	0.48	-2	53.5%	No	S
UU	T	4	0	0.00	0	37.5%	Yes	ND
ARSENIC								
BF-2	S	10	10	0.30	-36	100.0%	No	D
BF-2D	S	10	10	0.62	-23	97.7%	No	D
BF-4	T	9	1	0.24	-8	76.2%	No	S
BF-5	T	4	2	0.76	-5	89.6%	No	S
MW-5BR	S	10	10	0.18	-24	98.2%	No	D
MW-6BR	T	8	6	1.07	-7	76.4%	No	NT
MW-7BR	T	9	2	0.31	-3	58.0%	No	S
QD	T	9	0	0.00	0	46.0%	Yes	ND
UU	T	4	3	0.76	2	62.5%	No	NT
DINOSEB								
QD	T	8	7	0.54	-8	80.1%	No	S
TRICHLOROETHYLENE (TCE)								
BF-2	S	10	5	0.58	-23	97.7%	No	D
BF-2D	S	9	1	0.17	4	61.9%	No	NT
BF-4	T	9	0	0.00	0	46.0%	Yes	ND

MAROS Mann-Kendall Statistics Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Well	Source/ Tail	Number of Samples	Number of Detects	Coefficient of Variation	Mann-Kendall Statistic	Confidence in Trend	All Samples "ND" ?	Concentration Trend
TRICHLOROETHYLENE (TCE)								
BF-5	T	4	3	0.69	0	37.5%	No	S
MW-5BR	S	9	0	0.00	0	46.0%	Yes	ND
MW-6BR	T	8	2	0.25	-3	59.4%	No	S
MW-7BR	T	10	9	0.87	-12	83.2%	No	S
QD	T	10	9	0.32	11	81.0%	No	NT
UU	T	4	4	0.47	-4	83.3%	No	S
VINYL CHLORIDE								
BF-2	S	10	9	0.39	13	85.4%	No	NT
BF-2D	S	10	10	0.27	19	94.6%	No	PI
BF-4	T	9	0	0.00	0	46.0%	Yes	ND
BF-5	T	4	0	0.00	0	37.5%	Yes	ND
MW-5BR	S	10	10	0.38	-17	92.2%	No	PD
MW-6BR	T	8	3	0.31	12	91.1%	No	PI
MW-7BR	T	9	0	0.00	0	46.0%	Yes	ND
QD	T	9	0	0.00	0	46.0%	Yes	ND
UU	T	4	0	0.00	0	37.5%	Yes	ND

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A)-Due to insufficient Data (< 4 sampling events); Source/Tail (S/T)

The Number of Samples and Number of Detects shown above are post-consolidation values.

MAROS Linear Regression Statistics Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Time Period: 3/1/2009 **to** 4/25/2018
Consolidation Period: No Time Consolidation
Consolidation Type: Median
Duplicate Consolidation: Average
ND Values: Specified Detection Limit
J Flag Values : Actual Value

Well	Source/Tail	Average Conc (mg/L)	Median Conc (mg/L)	Standard Deviation	All Samples "ND" ?	Ln Slope	Coefficient of Variation	Confidence in Trend	Concentration Trend
ALPHA BHC (ALPHA HEXACHLOROCY									
BF-2	S	1.4E-03	1.3E-03	8.9E-04	No	-5.0E-04	0.65	99.9%	D
BF-2D	S	1.1E-03	8.9E-04	1.0E-03	No	-7.5E-04	0.92	99.9%	D
BF-4	T	5.0E-05	5.0E-05	7.1E-21	Yes	0.0E+00	0.00	100.0%	ND
BF-5	T	5.0E-05	5.0E-05	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
MW-5BR	S	4.6E-04	4.0E-04	4.1E-04	No	-4.7E-04	0.89	97.6%	D
MW-6BR	T	3.7E-05	5.0E-05	2.0E-05	No	-2.5E-04	0.54	76.0%	S
MW-7BR	T	5.0E-05	5.0E-05	7.1E-21	Yes	0.0E+00	0.00	100.0%	ND
QD	T	3.5E-05	2.9E-05	1.7E-05	No	-3.6E-05	0.48	58.1%	S
UU	T	5.0E-05	5.0E-05	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
ARSENIC									
BF-2	S	4.0E-01	3.5E-01	1.2E-01	No	-2.2E-04	0.30	100.0%	D
BF-2D	S	7.1E-03	5.0E-03	4.4E-03	No	-3.2E-04	0.62	96.6%	D
BF-4	T	9.3E-04	1.0E-03	2.2E-04	No	-1.8E-04	0.24	94.6%	PD
BF-5	T	1.4E-03	1.0E-03	1.1E-03	No	-4.3E-04	0.76	99.4%	D
MW-5BR	S	1.6E-01	1.5E-01	2.7E-02	No	-1.1E-04	0.18	99.2%	D
MW-6BR	T	3.1E-03	1.7E-03	3.3E-03	No	-3.3E-04	1.07	83.2%	NT
MW-7BR	T	9.3E-04	1.0E-03	2.9E-04	No	-2.7E-04	0.31	93.2%	PD
QD	T	1.0E-03	1.0E-03	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
UU	T	3.5E-03	3.2E-03	2.6E-03	No	3.4E-04	0.76	78.1%	NT

MAROS Linear Regression Statistics Summary

CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Edison **State:** New Jersey

DINOSEB

Well	Source/Tail	Average Conc (mg/L)	Median Conc (mg/L)	Standard Deviation	All Samples "ND" ?	Ln Slope	Coefficient of Variation	Confidence in Trend	Concentration Trend
DINOSEB									
QD	T	4.2E-03	4.8E-03	2.2E-03	No	-4.0E-04	0.54	83.9%	S
TRICHLOROETHYLENE (TCE)									
BF-2	S	6.9E-04	5.0E-04	4.0E-04	No	-2.9E-04	0.58	97.1%	D
BF-2D	S	4.7E-04	5.0E-04	8.0E-05	No	4.7E-05	0.17	73.8%	NT
BF-4	T	5.0E-04	5.0E-04	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
BF-5	T	1.1E+00	1.4E+00	7.8E-01	No	-2.6E-04	0.69	54.9%	S
MW-5BR	S	5.0E-04	5.0E-04	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
MW-6BR	T	4.6E-04	5.0E-04	1.1E-04	No	7.7E-05	0.25	69.5%	NT
MW-7BR	T	2.0E-03	1.6E-03	1.7E-03	No	-2.3E-04	0.87	83.6%	S
QD	T	1.6E-03	1.6E-03	5.2E-04	No	1.8E-04	0.32	90.6%	PI
UU	T	1.0E-03	9.0E-04	4.8E-04	No	-2.7E-04	0.47	95.8%	D
VINYL CHLORIDE									
BF-2	S	8.4E-03	9.3E-03	3.3E-03	No	3.7E-04	0.39	89.5%	NT
BF-2D	S	7.2E-02	6.8E-02	1.9E-02	No	1.1E-04	0.27	91.5%	PI
BF-4	T	5.0E-04	5.0E-04	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
BF-5	T	5.0E-04	5.0E-04	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
MW-5BR	S	5.2E-02	5.7E-02	2.0E-02	No	-3.5E-04	0.38	99.4%	D
MW-6BR	T	4.6E-04	5.0E-04	1.4E-04	No	1.4E-04	0.31	73.5%	NT
MW-7BR	T	5.0E-04	5.0E-04	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
QD	T	5.0E-04	5.0E-04	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND
UU	T	5.0E-04	5.0E-04	0.0E+00	Yes	0.0E+00	0.00	100.0%	ND

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Non-detect (ND); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); COV = Coefficient of Variation

MAROS Spatial Moment Analysis Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

	0th Moment	1st Moment (Center of Mass)			2nd Moment (Spread)		
Effective Date	**Estimated Mass (Kg)**	**Xc (ft)**	**Yc (ft)**	**Source Distance**	**Sigma XX (sq ft)**	**Sigma YY (sq ft)**	**Number of Wells**
ALPHA BHC (ALPHA HEXACHLOROCYCLOHE							
3/1/2009	9.3E-03	529,297	617,118	344	72,331	45,027	9
12/15/2009	9.1E-03	529,252	617,146	302	20,670	16,475	7
12/1/2010	1.3E-02	529,238	617,164	292	19,392	15,588	7
7/20/2011	1.1E-02	529,250	617,154	301	19,179	15,741	7
3/20/2012	1.8E-02	529,227	617,175	284	19,345	15,659	7
12/5/2013	9.8E-03	529,266	617,140	315	18,580	15,908	7
9/30/2014	3.8E-03	529,211	617,184	272	18,639	15,226	7
6/15/2015	2.8E-03	529,298	617,113	345	64,875	41,242	9
12/12/2016	1.3E-02	529,545	616,942	611	97,586	54,402	9
4/25/2018	1.0E-02	529,477	616,999	532	60,343	37,965	8
ARSENIC							
3/1/2009	3.9E+00	529,424	617,033	475	85,244	50,394	9
12/15/2009	2.1E+00	529,276	617,137	324	15,016	13,556	7
12/1/2010	0.0E+00						3
7/20/2011	2.0E+00	529,275	617,136	323	15,969	14,311	7
3/20/2012	9.7E-01	529,207	617,195	272	12,370	7,889	7
12/5/2013	7.4E-01	529,215	617,190	277	12,722	8,557	7
9/30/2014	6.6E-01	529,218	617,190	280	12,729	8,729	7
6/15/2015	9.0E-01	529,426	617,032	477	108,132	63,800	9
12/12/2016	7.9E-01	529,413	617,042	463	105,278	62,552	9
4/25/2018	8.0E-01	529,392	617,085	439	49,389	35,949	8
TRICHLOROETHYLENE (TCE)							
3/1/2009	3.6E+00	529,920	616,730	1,034	23,211	19,304	9
12/15/2009	5.0E-01	529,350	617,054	398	12,890	13,461	7
12/1/2010	0.0E+00						3
7/20/2011	8.4E-02	529,400	617,008	455	15,558	11,664	7
3/20/2012	8.7E-02	529,388	617,015	442	14,555	11,520	7
12/5/2013	1.0E-01	529,403	617,003	459	13,746	10,286	7
9/30/2014	9.5E-02	529,406	617,003	462	14,220	10,759	7
6/15/2015	3.0E-01	529,705	616,788	813	58,234	34,689	9
12/12/2016	1.9E+00	529,904	616,744	1,013	27,513	21,263	9
4/25/2018	1.3E+00	529,888	616,759	993	30,305	23,757	8

MAROS Spatial Moment Analysis Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

	0th Moment	1st Moment (Center of Mass)			2nd Moment (Spread)		
Effective Date	**Estimated Mass (Kg)**	**Xc (ft)**	**Yc (ft)**	**Source Distance**	**Sigma XX (sq ft)**	**Sigma YY (sq ft)**	**Number of Wells**
VINYL CHLORIDE							
VINYL CHLORIDE							
3/1/2009	3.9E-01	529,438	617,051	486	112,832	57,875	9
12/15/2009	8.6E-01	529,304	617,118	351	12,249	14,215	7
12/1/2010	0.0E+00						3
7/20/2011	1.7E-01	529,230	617,194	293	15,195	12,966	7
3/20/2012	2.2E-01	529,227	617,195	290	13,889	11,410	7
12/5/2013	2.2E-01	529,218	617,199	283	14,790	11,832	7
9/30/2014	1.9E-01	529,229	617,190	290	14,808	12,293	7
6/15/2015	3.5E-01	529,324	617,121	370	73,225	43,352	9
12/12/2016	2.3E-01	529,384	617,072	431	95,391	55,575	9
4/25/2018	2.8E-01	529,515	616,997	570	94,732	52,897	8

MAROS Spatial Moment Analysis Summary

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Spatial Moment Analysis Summary:

Moment Type	Constituent	Coefficient of Variation	Mann-Kendall S Statistic	Confidence in Trend	Moment Trend
0th Moment	ALPHA BHC (ALPHA HEXACH	0.44	-1	50.0%	S
0th Moment	ARSENIC	0.86	-17	92.2%	PD
0th Moment	TRICHLOROETHYLENE (TCE)	1.47	11	81.0%	NT
0th Moment	VINYL CHLORIDE	0.78	5	63.6%	NT
First Moment	ALPHA BHC (ALPHA HEXACH	0.32	11	81.0%	NT
First Moment	ARSENIC	0.25	2	54.0%	NT
First Moment	TRICHLOROETHYLENE (TCE)	0.42	16	94.0%	PI
First Moment	VINYL CHLORIDE	0.27	6	69.4%	NT
Second Moment X	ALPHA BHC (ALPHA HEXACH	0.72	-1	50.0%	S
Second Moment X	ARSENIC	0.91	6	69.4%	NT
Second Moment X	TRICHLOROETHYLENE (TCE)	0.63	12	87.0%	NT
Second Moment X	VINYL CHLORIDE	0.87	12	87.0%	NT
Second Moment Y	ALPHA BHC (ALPHA HEXACH	0.57	5	63.6%	NT
Second Moment Y	ARSENIC	0.81	6	69.4%	NT
Second Moment Y	TRICHLOROETHYLENE (TCE)	0.47	4	61.9%	NT
Second Moment Y	VINYL CHLORIDE	0.71	4	61.9%	NT

Note: The following assumptions were applied for the calculation of the Zeroth Moment:

Porosity: 0.35 **Saturated Thickness:** Uniform: 85 ft

Mann-Kendall Trend test performed on all sample events for each constituent. Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A)-Due to insufficient Data (< 4 sampling events); (ND) Non Detect.

Note: The Sigma XX and Sigma YY components are estimated using the given field coordinate system and then rotated to align with the estimated groundwater flow direction. Moments are not calculated for sample events with less than 6 wells.

MAROS Site Results

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

User Defined Site and Data Assumptions:

Hydrogeology and Plume Information:

Groundwater Seepage Velocity:	35	ft/yr
Current Plume Length:	200	ft
Current Plume Width:	100	ft
Number of Tail Wells:	6	
Number of Source Wells:	3	

Down Gradient Information:

Distance from Edge of Tail to Nearest:

Down-gradient Receptor:	500 ft
Down-gradient Property:	500 ft

Distance from Source to Nearest:

Down Gradient Receptor:	100 ft
Down Gradient Property:	100 ft

Source Information:

Source Treatment: Other

NAPL is not observed at this site.

Data Consolidation Assumptions:

Time Period: 3/1/2009 **to** 4/25/2018

Consolidation Period: No Time Consolidation

Consolidation Type: Median

Duplicate Consolidation: Average

ND Values: 1/2 Detection Limit

J Flag Values: Actual Value

Plume Information Weighting Assumptions:

Consolidation Step 1. Weight Plume Information by Chemical

Summary Weighting:
Weighting Applied to All Chemicals Equally

Consolidation Step 2. Weight Well Information by Chemical

Well Weighting:
No Weighting of Wells was Applied.

Chemical Weighting:
No Weighting of Chemicals was Applied.

Note: These assumptions were made when consolidating the historical montoring data and lumping the Wells and COCs.

MAROS Site Results

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

1. Compliance Monitoring/Remediation Optimization Results:

Preliminary Monitoring System Optimization Results: Based on site classification, source treatment and Monitoring System Category the following suggestions are made for site Sampling Frequency, Duration of Sampling before reassessment, and Well Density. These criteria take into consideration: Plume Stability, Type of Plume, and Groundwater Velocity.

COC	Tail Stability	Source Stability	Level of Effort	Sampling Duration	Sampling Frequency	Sampling Density
ALPHA BHC (ALPHA HEXACHL	D	D	L	n mechanism unitl reach stal	No Recommendation	13
ARSENIC	D	D	L	n mechanism unitl reach stal	No Recommendation	13
TRICHLOROETHYLENE (TCE)	PD	PD	L	n mechanism unitl reach stal	No Recommendation	13
VINYL CHLORIDE	D	NT	M	em if previously reducing co	No Recommendation	13

Note

Plume Status: (I) Increasing; (PI)Probably Increasing; (S) Stable; (NT) No Trend; (PD) Probably Decreasing; (D) Decreasing

Design Categories: (E) Extensive; (M) Moderate; (L) Limited
(N/A) Not Applicable, Insufficient Data Available

Level of Monitoring Effort Indicated by Analysis: ***Moderate***

2. Spatial Moment Analysis Results:

Spatial Moment Analysis Summary:

Moment Type	Constituent	Coefficient of Variation	Mann-Kendall S Statistic	Confidence in Trend	Moment Trend
0th Moment	ALPHA BHC (ALPHA HEXACH	0.44	-1	50.0%	S
0th Moment	ARSENIC	0.86	-17	92.2%	PD
0th Moment	TRICHLOROETHYLENE (TCE)	1.47	11	81.0%	NT
0th Moment	VINYL CHLORIDE	0.78	5	63.6%	NT
First Moment	ALPHA BHC (ALPHA HEXACH	0.32	11	81.0%	NT
First Moment	ARSENIC	0.25	2	54.0%	NT
First Moment	TRICHLOROETHYLENE (TCE)	0.42	16	94.0%	PI
First Moment	VINYL CHLORIDE	0.27	6	69.4%	NT
Second Moment X	ALPHA BHC (ALPHA HEXACH	0.72	-1	50.0%	S
Second Moment X	ARSENIC	0.91	6	69.4%	NT
Second Moment X	TRICHLOROETHYLENE (TCE)	0.63	12	87.0%	NT
Second Moment X	VINYL CHLORIDE	0.87	12	87.0%	NT

MAROS Site Results

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Second Moment Y	ALPHA BHC (ALPHA HEXACH	0.57	5	63.6%	NT
Second Moment Y	ARSENIC	0.81	6	69.4%	NT
Second Moment Y	TRICHLOROETHYLENE (TCE)	0.47	4	61.9%	NT
Second Moment Y	VINYL CHLORIDE	0.71	4	61.9%	NT

Note: The following assumptions were applied for the calculation of the Zeroth Moment:

Porosity: 0.35 **Saturated Thickness:** Uniform: 85 ft

Mann-Kendall Trend test performed on all sample events for each constituent. Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A)-Due to insufficient Data (< 4 sampling events); (ND) Non Detect.

MAROS Sampling Frequency Optimization Results

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

The Overall Number of Sampling Events: 10

"Recent Period" defined by events: **From** 3/1/2009 **To** 4/25/2018

"Rate of Change" parameters used:

Constituent	Cleanup Goal	Low Rate	Medium Rate	High Rate
ALPHA BHC (AL	0.00002	0.00001	0.00002	0.00004
ARSENIC	0.003	0.0015	0.003	0.006
TRICHLOROET	0.001	0.0005	0.001	0.002
VINYL CHLORID	0.001	0.0005	0.001	0.002

Units: Cleanup Goal is in mg/L; all rate parameters are in mg/L/year.

Well	Recommended Sampling	Frequency Based on	Frequency Based on
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)			
BF-2	Biennial	Biennial	Biennial
BF-2D	Biennial	Biennial	Biennial
BF-4	Biennial	Biennial	Biennial
BF-5	Biennial	Biennial	Biennial
MW-5BR	Biennial	Biennial	Biennial
MW-6BR	Biennial	Biennial	Biennial
MW-7BR	Biennial	Biennial	Biennial
QD	Biennial	Biennial	Biennial
UU	Biennial	Biennial	Biennial
ARSENIC			
BF-2	Biennial	Biennial	Biennial
BF-2D	Biennial	Biennial	Biennial
BF-4	Biennial	Biennial	Biennial
BF-5	Biennial	Biennial	Biennial
MW-5BR	Biennial	Biennial	Biennial
MW-6BR	Biennial	Biennial	Biennial
MW-7BR	Biennial	Biennial	Biennial
QD	Biennial	Biennial	Biennial
UU	Biennial	Biennial	Biennial

MAROS Sampling Frequency Optimization Results

Project: CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Location: Edison **State:** New Jersey

Well	Recommended Sampling	Frequency Based on	Frequency Based on
TRICHLOROETHYLENE (TCE)			
BF-2	Biennial	Biennial	Biennial
BF-2D	Biennial	Biennial	Biennial
BF-4	Biennial	Biennial	Biennial
BF-5	Biennial	Biennial	Biennial
MW-5BR	Biennial	Biennial	Biennial
MW-6BR	Biennial	Biennial	Biennial
MW-7BR	Biennial	Biennial	Biennial
QD	Biennial	Biennial	Biennial
UU	Biennial	Biennial	Biennial
VINYL CHLORIDE			
BF-2	Annual	Annual	Annual
BF-2D	Quarterly	Quarterly	Quarterly
BF-4	Biennial	Biennial	Biennial
BF-5	Biennial	Biennial	Biennial
MW-5BR	Biennial	Biennial	Biennial
MW-6BR	Biennial	Biennial	Biennial
MW-7BR	Biennial	Biennial	Biennial
QD	Biennial	Biennial	Biennial
UU	Biennial	Biennial	Biennial

Note: Sampling frequency is determined considering both recent and overall concentration trends. Sampling Frequency is the final recommendation; Frequency Based on Recent Data is the frequency determined using recent (short) period of monitoring data; Frequency Based on Overall Data is the frequency determined using overall (long) period of monitoring data. If the "recent period" is defined using a different series of sampling events, the results could be different.

MAROS Sampling Location Optimization Results

CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Edison **State:** New Jersey

Sampling Events Analyzed: **From** Sample Event 1 3/1/2009 **to** Sample Event 10 4/25/2018

Parameters used:

Constituent	Inside SF	Hull SF	Area Ratio	Conc. Ratio
ALPHA BHC (ALPHA HE	0.3	0.1	0.9	0.85
ARSENIC	0.3	0.1	0.9	0.85
TRICHLOROETHYLENE	0.3	0.1	0.9	0.85
VINYL CHLORIDE	0.3	0.1	0.9	0.85

Well Name	X (feet)	Y (feet)	Removable?	Average Slope Factor*	Minimum Slope Factor*	Maximum Slope Factor*	Eliminated?
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)							
BF-2	529088.81	617318.00	☑	0.230	0.139	0.408	☐
BF-2D	529046.38	617366.38	☑	0.099	0.008	0.213	☐
BF-4	529619.13	617180.50	☑	0.699	0.436	1.000	☐
BF-5	530061.19	616806.00	☑	0.006	0.000	0.022	☐
MW-5BR	529113.88	617340.00	☑	0.146	0.023	0.341	☐
MW-6BR	529064.19	617054.38	☑	0.636	0.455	0.769	☐
MW-7BR	529631.50	616812.88	☑	0.245	0.000	1.000	☐
QD	529370.63	616751.88	☑	0.332	0.000	0.907	☐
UU	530363.19	616309.50	☑	0.006	0.000	0.023	☐
ARSENIC							
BF-2	529088.81	617318.00	☑	0.309	0.243	0.425	☐
BF-2D	529046.38	617366.38	☑	0.526	0.388	0.769	☐
BF-4	529619.13	617180.50	☑	0.511	0.344	0.686	☐
BF-5	530061.19	616806.00	☑	0.267	0.000	0.545	☐
MW-5BR	529113.88	617340.00	☑	0.125	0.071	0.169	☑
MW-6BR	529064.19	617054.38	☑	0.488	0.302	0.626	☐
MW-7BR	529631.50	616812.88	☑	0.136	0.000	0.654	☑
QD	529370.63	616751.88	☑	0.104	0.000	0.337	☐
UU	530363.19	616309.50	☑	0.450	0.192	0.616	☐
TRICHLOROETHYLENE (TCE)							
BF-2	529088.81	617318.00	☑	0.216	0.000	0.654	☑
BF-2D	529046.38	617366.38	☑	0.153	0.000	0.514	☐

MAROS Sampling Location Optimization Results

CIC OU4 GW LTM (2018 Rev 1) **User Name:** Lynn Arabia

Edison **State:** New Jersey

Well Name	X (feet)	Y (feet)	Removable?	Average Slope Factor*	Minimum Slope Factor*	Maximum Slope Factor*	Eliminated?
BF-4	529619.13	617180.50	☑	0.389	0.000	0.599	☐
BF-5	530061.19	616806.00	☑	0.725	0.553	0.840	☐
MW-5BR	529113.88	617340.00	☑	0.167	0.000	0.567	☑
MW-6BR	529064.19	617054.38	☑	0.302	0.000	0.649	☐
MW-7BR	529631.50	616812.88	☑	0.421	0.000	0.708	☐
QD	529370.63	616751.88	☑	0.233	0.000	0.479	☐
UU	530363.19	616309.50	☑	0.542	0.179	0.719	☐
VINYL CHLORIDE							
BF-2	529088.81	617318.00	☑	0.279	0.124	0.756	☐
BF-2D	529046.38	617366.38	☑	0.282	0.220	0.432	☐
BF-4	529619.13	617180.50	☑	0.706	0.618	0.750	☐
BF-5	530061.19	616806.00	☑	0.360	0.000	0.766	☐
MW-5BR	529113.88	617340.00	☑	0.243	0.025	0.562	☐
MW-6BR	529064.19	617054.38	☑	0.698	0.509	0.974	☐
MW-7BR	529631.50	616812.88	☑	0.098	0.000	0.434	☐
QD	529370.63	616751.88	☑	0.050	0.000	0.435	☐
UU	530363.19	616309.50	☑	0.309	0.000	0.664	☐

Note: The Slope Factor indicates the relative importance of a well in the monitoring network at a given sampling event; the larger the SF value of a well, the more important the well is and vice versa; the Average Slope Factor measures the overall well importance in the selected time period; the State Plane (i.e., X and Y refer to Easting and Northing, respectively) or local coordinate systems may be used; wells that are NOT selected for analysis are not shown above.
* When the report is generated after running the Excel module, SF values will NOT be shown above.

Well Redundancy Analysis

The decision logic well redundancy analysis relies on spatial metrics calculated in previous screens to identify the bottom 25% of wells by importance. The Well Redundancy Analysis screen lists the wells in the network, % Total Plume Area from the Voronoi Diagram calculation, whether the well is an interior or hull (boundary) location.

Baseline Comparison: Voronoi Area of the well divided by the average Voronoi Area of the network. High values for this indicate areas with relatively sparse well coverage while low values indicate wells that may be too close to one another. Wells with low Baseline Comparison may be candidates for elimination from the monitoring program.

Well Redundancy Analysis

MAIN MENU > SAMPLING OPTIMIZATION MENU > WELL SUFFICIENCY MENU > WELL REDUNDANCY ANALYSIS

Well redundancy analysis identifies lowest ranking 25 percent of wells. User can return to moment analysis to remove wells and test metrics against the original network.

Well Name	% Total Plume Area	Well Location	Baseline Comparison	Well Importance Rank	Area of Concern Sufficiency	Lowest 25%	Selected
V	V	V	V	Λ	Λ	Λ	Λ
MW-5BR	5	Interior	2	1	☐	☑	☑
BF-2D	0	Hull	0	2	☐	☑	☑
UU	6	Hull	2	3	☐	☐	☑
QD	10	Hull	3	4	☐	☐	☑
BF-2	4	Interior	1	5	☐	☐	☑
MW-6BR	11	Hull	3	6	☐	☐	☑
BF-4	16	Hull	5	7	☐	☐	☑
BF-5	22	Hull	7	8	☐	☐	☑
MW-7BR	27	Interior	8	9	☐	☐	☑

Well Sufficiency Decision Logic – Individual Well Areas

The Well Sufficiency Decision Logic lists wells by area – hull or boundary wells and interior locations. The User can see the results for different COCs by choosing the tabs at the top of the table. **The software identifies wells that may require new locations nearby** and allows the User to identify locations for new wells. The decision criteria for adding a new boundary well include positions downgradient from the center of the plume, high percent detection, COV of the SF above 1, high general rank and increasing or variable Mann-Kendall concentration trend for the COC.

Well Importance Rank: Indicates a location with higher uncertainty that may benefit from more characterization.

Alpha-BHC

Potential for New Well: BF-5, UU, MW-7BR

Well Sufficiency Decision Logic

MAIN MENU > SAMPLING OPTIMIZATION MENU > WELL SUFFICIENCY MENU > DECISION LOGIC INDIVIDUAL WELL AREAS

Description of what this page does / short instructions go here describing what to do on this page. This is also where we can stick illustrations etc. The content area below
Font face is Calabri (installed with Office 2007) and size is 11pt. Black text on white background.

ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE) | ARSENIC | TRICHLOROETHYLENE (TCE) | VINYL CHLORIDE

Hull Wells

Well Name	Downgradient from Center?	Percent Detection	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
BF-4	☐	0.0	1.58	7	ND	☐	☐
BF-5	☑	0.0	1.28	8	ND	☑	☐
MW-6BR	☐	33.3	0.84	6	S	☐	☐
QD	☑	70.0	0.59	4	S	☐	☐
UU	☑	0.0	1.29	3	ND	☑	☐

Interior Wells

Well Name	Baseline Comparison	Average Slope Factor	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
MW-5BR	1.51	0.17	0.77	1	D	☐	☐
MW-7BR	8.35	0.05	1.66	9	ND	☑	☐

Arsenic

Potential for New Well: MW-7BR

Well Sufficiency Decision Logic

MAIN MENU > SAMPLING OPTIMIZATION MENU > WELL SUFFICIENCY MENU > DECISION LOGIC INDIVIDUAL WELL AREAS

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ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE) | ARSENIC | TRICHLOROETHYLENE (TCE) | VINYL CHLORIDE

Hull Wells

Well Name	Downgradient from Center?	Percent Detection	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
BF-4	☐	11.1	0.69	7	D	☐	☐
BF-5	☑	50.0	0.52	8	NT	☐	☐
MW-6BR	☐	75.0	0.57	6	D	☐	☐
QD	☑	0.0	0.62	4	ND	☐	☐
UU	☑	75.0	0.45	3	S	☐	☐

Interior Wells

Well Name	Baseline Comparison	Average Slope Factor	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
MW-5BR	1.51	0.17	0.04	1	D	☐	☐
MW-7BR	8.35	0.34	1.14	9	D	☑	☐

TCE

Potential for New Well: BF-5,

Well Sufficiency Decision Logic

MAIN MENU > SAMPLING OPTIMIZATION MENU > WELL SUFFICIENCY MENU > DECISION LOGIC INDIVIDUAL WELL AREAS

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ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE) | ARSENIC | TRICHLOROETHYLENE (TCE) | VINYL CHLORIDE

Hull Wells

Well Name	Downgradient from Center?	Percent Detection	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
BF-4	☐	0.0	0.35	7	ND	☐	☐
BF-5	☑	75.0	1.83	8	S	☑	☐
MW-6BR	☐	25.0	0.45	6	NT	☐	☐
QD	☑	90.0	0.29	4	S	☐	☐
UU	☑	100.0	0.47	3	S	☐	☐

Interior Wells

Well Name	Baseline Comparison	Average Slope Factor	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
BF-2	1.09	0.16	0.73	5	D	☐	☐
MW-5BR	1.51	0.09	0.34	1	ND	☐	☐

Vinyl Chloride

Potential for New Well: BF-2D

Well Sufficiency Decision Logic

MAIN MENU > SAMPLING OPTIMIZATION MENU > WELL SUFFICIENCY MENU > DECISION LOGIC INDIVIDUAL WELL AREAS

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Font face is Calabri (installed with Office 2007) and size is 11pt. Black text on white background.

ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE) | ARSENIC | TRICHLOROETHYLENE (TCE) | VINYL CHLORIDE

Hull Wells

Well Name	Downgradient from Center?	Percent Detection	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
BF-2D	☐	100.0	0.10	2	PI	☑	☐
BF-4	☐	0.0	0.35	7	ND	☐	☐
BF-5	☑	0.0	0.96	8	ND	☐	☐
MW-6BR	☐	37.5	0.70	6	NT	☐	☐
QD	☑	0.0	0.35	4	ND	☐	☐

Interior Wells

Well Name	Baseline Comparison	Average Slope Factor	COV SF	Well Importance	Mann-Kendall Trend	Potential For New Well	Area Of Concern
BF-2	1.09	0.28	0.68	5	NT	☐	☐
MW-5BR	1.51	0.23	0.28	1	PD	☐	☐

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	3/24/2009	2.4	ug/l	0.05	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	12/15/2009	1.4	ug/l	0.2	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	12/13/2010	1.8	ug/l	0.05	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	7/23/2011	1.4	ug/l	0.05	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	3/24/2012	3.2	ug/l	0.05	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	12/9/2013	1	ug/l	0.25	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	9/30/2014	1.1	ug/l	0.05	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	6/19/2015	0.47	ug/L	0.05	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	12/12/2016	0.48	ug/l	0.05	
BF-2	529088.8	617318	alpha-BHC	BHCALPHA	4/25/2018	0.53	ug/L	0.1	
BF-2	529088.8	617318	ARSENIC	AS	3/24/2009	606.5	ug/l	10	
BF-2	529088.8	617318	ARSENIC	AS	12/15/2009	600	ug/l	10	
BF-2	529088.8	617318	ARSENIC	AS	12/13/2010	460	ug/l	1	
BF-2	529088.8	617318	ARSENIC	AS	7/23/2011	430	ug/l	10	
BF-2	529088.8	617318	ARSENIC	AS	3/24/2012	370	ug/l	5	
BF-2	529088.8	617318	ARSENIC	AS	12/9/2013	330	ug/l	10	
BF-2	529088.8	617318	ARSENIC	AS	9/30/2014	300	ug/l	8	
BF-2	529088.8	617318	Arsenic	AS	6/19/2015	300	ug/L	20	
BF-2	529088.8	617318	Arsenic	AS	12/12/2016	286	ug/L	1	
BF-2	529088.8	617318	ARSENIC	AS	4/25/2018	332	ug/L	1	
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009	1.65	ug/l	0.5	
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	12/13/2010	0.935	ug/l	0.5	
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	7/23/2011	0.88	ug/l	0.5	
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	3/24/2012	0.69	ug/l	0.5	
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	12/9/2013		ug/l	0.5	ND
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014	0.22	ug/l	0.5	TR
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	6/19/2015		ug/L	0.5	ND
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	12/12/2016		ug/l	0.5	ND
BF-2	529088.8	617318	TRICHLOROETHYLENE (TCE)	TCE	4/25/2018		ug/L	0.5	ND
BF-2	529088.8	617318	VINYL CHLORIDE	VC	3/24/2009	11	ug/l	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
BF-2	529088.8	617318	VINYL CHLORIDE	VC	12/13/2010	8.5	ug/l	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	7/23/2011	6.4	ug/l	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	3/24/2012	8	ug/l	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	12/9/2013	10	ug/l	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	9/30/2014	6.7	ug/l	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	6/19/2015	11.5	ug/L	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	12/12/2016	11	ug/l	0.5	
BF-2	529088.8	617318	VINYL CHLORIDE	VC	4/25/2018	10	ug/L	0.5	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	3/23/2009	1.3	ug/l	0.05	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	12/15/2009	1.1	ug/l	0.2	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	12/13/2010	2.2	ug/l	0.05	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	7/23/2011	1.3	ug/l	0.05	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	3/23/2012	3.5	ug/l	0.05	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	12/9/2013	0.67	ug/l	0.05	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	9/30/2014	0.56	ug/l	0.046	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	6/19/2015	0.29	ug/L	0.05	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	12/12/2016	0.22	ug/l	0.05	
BF-2D	529046.4	617366.4	alpha-BHC	BHCALPHA	4/25/2018	0.18	ug/L	0.02	
BF-2D	529046.4	617366.4	ARSENIC	AS	3/23/2009	10	ug/l	10	TR
BF-2D	529046.4	617366.4	ARSENIC	AS	12/15/2009	3.5	ug/l	10	TR
BF-2D	529046.4	617366.4	ARSENIC	AS	12/13/2010	16	ug/l	1	
BF-2D	529046.4	617366.4	ARSENIC	AS	7/23/2011	11.2	ug/l	10	
BF-2D	529046.4	617366.4	ARSENIC	AS	3/23/2012	9.5	ug/l	1	
BF-2D	529046.4	617366.4	ARSENIC	AS	12/9/2013	5.1	ug/l	1	
BF-2D	529046.4	617366.4	ARSENIC	AS	9/30/2014	4	ug/l	1	
BF-2D	529046.4	617366.4	Arsenic	AS	6/19/2015	3.3	ug/L	1	
BF-2D	529046.4	617366.4	Arsenic	AS	12/12/2016	3	ug/L	1	
BF-2D	529046.4	617366.4	ARSENIC	AS	4/25/2018	4.9	ug/L	1	
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	3/23/2009		ug/l	0.5	ND
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	7/23/2011	0.26	ug/l	0.5	TR
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	3/23/2012		ug/l	0.5	ND
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	12/9/2013		ug/l	0.5	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014		ug/l	0.5	ND
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	6/19/2015		ug/L	0.5	ND
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	12/12/2016		ug/l	0.5	ND
BF-2D	529046.4	617366.4	TRICHLOROETHYLENE (TCE)	TCE	4/25/2018		ug/L	0.5	ND
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	3/23/2009	72	ug/l	5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	12/15/2009	51	ug/l	5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	12/13/2010	51	ug/l	0.5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	7/23/2011	61	ug/l	0.5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	3/23/2012	63	ug/l	0.5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	12/9/2013	98	ug/l	5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	9/30/2014	74	ug/l	5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	6/19/2015	110	ug/L	10	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	12/12/2016	80	ug/l	2.5	
BF-2D	529046.4	617366.4	VINYL CHLORIDE	VC	4/25/2018	63	ug/L	0.5	
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	3/24/2009		ug/l	0.0094	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	12/16/2009		ug/l	0.05	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	12/13/2010		ug/l	0.05	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	7/21/2011		ug/l	0.05	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	3/23/2012		ug/l	0.05	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	12/6/2013		ug/l	0.05	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	9/29/2014		ug/l	0.0054	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	6/16/2015		ug/L	0.0025	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	12/15/2016		ug/l	0.05	ND
BF-4	529619.1	617180.5	alpha-BHC	BHCALPHA	4/25/2018		ug/L	0.02	ND
BF-4	529619.1	617180.5	ARSENIC	AS	3/24/2009		ug/l	10	ND
BF-4	529619.1	617180.5	ARSENIC	AS	12/16/2009		ug/l	10	ND
BF-4	529619.1	617180.5	ARSENIC	AS	7/21/2011		ug/l	10	ND
BF-4	529619.1	617180.5	ARSENIC	AS	3/23/2012		ug/l	1	ND
BF-4	529619.1	617180.5	ARSENIC	AS	12/6/2013		ug/l	1	ND
BF-4	529619.1	617180.5	ARSENIC	AS	9/29/2014		ug/l	1	ND
BF-4	529619.1	617180.5	Arsenic	AS	6/16/2015		ug/L	1	ND
BF-4	529619.1	617180.5	Arsenic	AS	12/15/2016		ug/L	1	ND
BF-4	529619.1	617180.5	ARSENIC	AS	4/25/2018	0.34	ug/L	1	TR
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009		ug/l	0.5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	12/16/2009		ug/l	5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	7/21/2011		ug/l	0.5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	3/23/2012		ug/l	0.5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	12/6/2013		ug/l	0.5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	9/29/2014		ug/l	0.5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	6/16/2015		ug/L	0.5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	12/15/2016		ug/l	0.5	ND
BF-4	529619.1	617180.5	TRICHLOROETHYLENE (TCE)	TCE	4/25/2018		ug/L	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	3/24/2009		ug/l	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	12/16/2009		ug/l	5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	7/21/2011		ug/l	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	3/23/2012		ug/l	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	12/6/2013		ug/l	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	9/29/2014		ug/l	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	6/16/2015		ug/L	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	12/15/2016		ug/l	0.5	ND
BF-4	529619.1	617180.5	VINYL CHLORIDE	VC	4/25/2018		ug/L	0.5	ND
BF-5	530061.2	616806	ALPHA BHC	BHCALPHA	4/24/2018		ug/L	0.02	ND
BF-5	530061.2	616806	alpha-BHC	BHCALPHA	3/25/2009		ug/l	0.0094	ND
BF-5	530061.2	616806	alpha-BHC	BHCALPHA	6/18/2015		ug/L	0.0025	ND
BF-5	530061.2	616806	alpha-BHC	BHCALPHA	12/12/2016		ug/l	0.05	ND
BF-5	530061.2	616806	ARSENIC	AS	3/25/2009	3	ug/l	10	TR
BF-5	530061.2	616806	Arsenic	AS	6/18/2015		ug/L	1	ND
BF-5	530061.2	616806	Arsenic	AS	12/12/2016		ug/L	1	ND
BF-5	530061.2	616806	Arsenic	AS	4/24/2018	0.66	ug/L	1	TR
BF-5	530061.2	616806	TRICHLOROETHYLENE (TCE)	TCE	3/25/2009	1600	ug/l	100	
BF-5	530061.2	616806	TRICHLOROETHYLENE (TCE)	TCE	6/18/2015		ug/L	0.5	ND
BF-5	530061.2	616806	TRICHLOROETHYLENE (TCE)	TCE	12/12/2016	1700	ug/l	100	
BF-5	530061.2	616806	TRICHLOROETHYLENE (TCE)	TCE	4/24/2018	1200	ug/L	50	
BF-5	530061.2	616806	VINYL CHLORIDE	VC	3/25/2009		ug/l	10	ND
BF-5	530061.2	616806	VINYL CHLORIDE	VC	6/18/2015		ug/L	0.5	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
BF-5	530061.2	616806	VINYL CHLORIDE	VC	12/12/2016		ug/l	0.5	ND
BF-5	530061.2	616806	VINYL CHLORIDE	VC	4/24/2018		ug/L	5	ND
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	3/25/2009	0.034	ug/l	0.05	
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	12/16/2009	0.032	ug/l	0.05	TR
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	12/10/2010	0.054	ug/l	0.05	
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	7/22/2011		ug/l	0.05	ND
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	3/22/2012	0.051	ug/l	0.05	
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	12/5/2013		ug/l	0.05	ND
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	9/30/2014	0.026	ug/l	0.0045	
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	6/17/2015		ug/L	0.0025	ND
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	12/14/2016		ug/l	0.05	ND
FU	529626.8	616815.4	alpha-BHC	BHCALPHA	4/24/2018		ug/L	0.02	ND
FU	529626.8	616815.4	ARSENIC	AS	3/25/2009	3.2	ug/l	10	TR
FU	529626.8	616815.4	ARSENIC	AS	12/16/2009		ug/l	10	ND
FU	529626.8	616815.4	ARSENIC	AS	7/22/2011		ug/l	10	ND
FU	529626.8	616815.4	ARSENIC	AS	3/22/2012		ug/l	1	ND
FU	529626.8	616815.4	ARSENIC	AS	12/5/2013		ug/l	1	ND
FU	529626.8	616815.4	ARSENIC	AS	9/30/2014		ug/l	1	ND
FU	529626.8	616815.4	Arsenic	AS	6/17/2015		ug/L	1	ND
FU	529626.8	616815.4	Arsenic	AS	12/14/2016		ug/L	1	ND
FU	529626.8	616815.4	ARSENIC	AS	4/24/2018	1.6	ug/L	1	
FU	529626.8	616815.4	DINOSEB	DINOSEB	12/16/2009	3.4	ug/l	0.5	
FU	529626.8	616815.4	DINOSEB	DINOSEB	12/10/2010	3.3	ug/l	0.25	
FU	529626.8	616815.4	DINOSEB	DINOSEB	7/22/2011	2.4	ug/l	0.25	
FU	529626.8	616815.4	DINOSEB	DINOSEB	3/23/2012	1.1	ug/l	0.25	
FU	529626.8	616815.4	DINOSEB	DINOSEB	12/5/2013	1.7	ug/l	0.25	
FU	529626.8	616815.4	DINOSEB	DINOSEB	9/30/2014	0.25	ug/l	0.25	TR
FU	529626.8	616815.4	DINOSEB	DINOSEB	10/1/2014		ug/l	0.25	ND
FU	529626.8	616815.4	DINOSEB	DINOSEB	12/14/2016		ug/l	0.0763	ND
FU	529626.8	616815.4	DINOSEB	DINOSEB	4/24/2018		ug/l	0.97	ND
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	3/25/2009	0.5	ug/l	0.5	TR
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	12/16/2009		ug/l	5	ND
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	7/22/2011	0.15	ug/l	0.5	TR
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	3/22/2012		ug/l	0.5	ND
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	12/5/2013		ug/l	0.5	ND
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014		ug/l	0.5	ND
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	6/17/2015		ug/L	0.5	ND
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	12/14/2016		ug/l	0.5	ND
FU	529626.8	616815.4	TRICHLOROETHYLENE (TCE)	TCE	4/24/2018		ug/L	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	3/25/2009		ug/l	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	12/16/2009		ug/l	5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	7/22/2011		ug/l	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	3/22/2012		ug/l	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	12/5/2013		ug/l	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	9/30/2014		ug/l	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	6/17/2015		ug/L	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	12/14/2016		ug/l	0.5	ND
FU	529626.8	616815.4	VINYL CHLORIDE	VC	4/24/2018		ug/L	0.5	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	3/25/2009		ug/l	0.0094	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	12/16/2009		ug/l	0.05	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	12/10/2010		ug/l	0.05	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	7/21/2011		ug/l	0.05	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	3/23/2012		ug/l	0.05	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	12/6/2013		ug/l	0.05	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	9/29/2014		ug/l	0.0051	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	6/16/2015		ug/L	0.0025	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	12/13/2016		ug/l	0.05	ND
GU	529627.5	617084.7	alpha-BHC	BHCALPHA	4/25/2018		ug/L	0.02	ND
GU	529627.5	617084.7	ARSENIC	AS	3/25/2009	2.4	ug/l	10	TR
GU	529627.5	617084.7	ARSENIC	AS	12/16/2009		ug/l	10	ND
GU	529627.5	617084.7	ARSENIC	AS	7/21/2011		ug/l	10	ND
GU	529627.5	617084.7	ARSENIC	AS	3/23/2012		ug/l	1	ND
GU	529627.5	617084.7	ARSENIC	AS	12/6/2013	1.3	ug/l	1	
GU	529627.5	617084.7	ARSENIC	AS	9/29/2014	1.3	ug/l	1	
GU	529627.5	617084.7	Arsenic	AS	6/16/2015		ug/L	1	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
GU	529627.5	617084.7	Arsenic	AS	12/13/2016	1.6	ug/L	1	
GU	529627.5	617084.7	ARSENIC	AS	4/25/2018	1.4	ug/L	1	
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	3/25/2009		ug/l	0.5	ND
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	12/16/2009		ug/l	5	ND
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	7/21/2011	0.075	ug/l	0.5	TR
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	3/23/2012		ug/l	0.5	ND
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	12/6/2013		ug/l	0.5	ND
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	9/29/2014		ug/l	0.5	ND
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	6/16/2015		ug/L	0.5	ND
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	12/13/2016		ug/l	0.5	ND
GU	529627.5	617084.7	TRICHLOROETHYLENE (TCE)	TCE	4/25/2018		ug/L	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	3/25/2009		ug/l	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	12/16/2009		ug/l	5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	7/21/2011		ug/l	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	3/23/2012		ug/l	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	12/6/2013		ug/l	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	9/29/2014		ug/l	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	6/16/2015		ug/L	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	12/13/2016		ug/l	0.5	ND
GU	529627.5	617084.7	VINYL CHLORIDE	VC	4/25/2018		ug/L	0.5	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	3/24/2009		ug/l	0.0095	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	12/15/2009		ug/l	0.05	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	12/9/2010		ug/l	0.05	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	7/20/2011		ug/l	0.05	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	3/20/2012		ug/l	0.05	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	12/4/2013		ug/l	0.05	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	9/29/2014		ug/l	0.0049	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	6/16/2015		ug/L	0.0025	ND
MW-2BR	529713.2	617522.1	alpha-BHC	BHCALPHA	4/25/2018		ug/L	0.02	ND
MW-2BR	529713.2	617522.1	ARSENIC	AS	3/24/2009	6.1	ug/l	10	TR
MW-2BR	529713.2	617522.1	ARSENIC	AS	12/15/2009		ug/l	10	ND
MW-2BR	529713.2	617522.1	ARSENIC	AS	7/20/2011	3.5	ug/l	10	TR
MW-2BR	529713.2	617522.1	ARSENIC	AS	3/20/2012	3.2	ug/l	1	
MW-2BR	529713.2	617522.1	ARSENIC	AS	12/4/2013	1.7	ug/l	1	
MW-2BR	529713.2	617522.1	ARSENIC	AS	9/29/2014	2.6	ug/l	1	
MW-2BR	529713.2	617522.1	Arsenic	AS	6/16/2015	3.2	ug/L	1	
MW-2BR	529713.2	617522.1	Arsenic	AS	4/25/2018	3.9	ug/L	1	
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	7/20/2011		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	3/20/2012		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	12/4/2013		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	9/29/2014		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	6/16/2015		ug/L	0.5	ND
MW-2BR	529713.2	617522.1	TRICHLOROETHYLENE (TCE)	TCE	4/25/2018		ug/L	0.5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	3/24/2009		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	7/20/2011		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	3/20/2012		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	12/4/2013		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	9/29/2014		ug/l	0.5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	6/16/2015		ug/L	0.5	ND
MW-2BR	529713.2	617522.1	VINYL CHLORIDE	VC	4/25/2018		ug/L	0.5	ND
MW-2I	529700.4	617510.3	alpha-BHC	BHCALPHA	3/24/2009		ug/l	0.0095	ND
MW-2I	529700.4	617510.3	alpha-BHC	BHCALPHA	6/16/2015		ug/L	0.0025	ND
MW-2I	529700.4	617510.3	alpha-BHC	BHCALPHA	12/13/2016		ug/l	0.05	ND
MW-2I	529700.4	617510.3	alpha-BHC	BHCALPHA	4/23/2018		ug/L	0.02	ND
MW-2I	529700.4	617510.3	ARSENIC	AS	3/24/2009		ug/l	10	ND
MW-2I	529700.4	617510.3	Arsenic	AS	6/16/2015	1.1	ug/L	1	
MW-2I	529700.4	617510.3	Arsenic	AS	12/13/2016		ug/L	1	ND
MW-2I	529700.4	617510.3	Arsenic	AS	4/23/2018	0.75	ug/L	1	TR
MW-2I	529700.4	617510.3	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009		ug/l	0.5	ND
MW-2I	529700.4	617510.3	TRICHLOROETHYLENE (TCE)	TCE	6/16/2015		ug/L	0.5	ND
MW-2I	529700.4	617510.3	TRICHLOROETHYLENE (TCE)	TCE	12/13/2016		ug/l	0.5	ND
MW-2I	529700.4	617510.3	TRICHLOROETHYLENE (TCE)	TCE	4/23/2018		ug/L	0.5	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
MW-2I	529700.4	617510.3	VINYL CHLORIDE	VC	3/24/2009		ug/l	0.5	ND
MW-2I	529700.4	617510.3	VINYL CHLORIDE	VC	6/16/2015		ug/L	0.5	ND
MW-2I	529700.4	617510.3	VINYL CHLORIDE	VC	12/13/2016		ug/l	0.5	ND
MW-2I	529700.4	617510.3	VINYL CHLORIDE	VC	4/23/2018		ug/L	0.5	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	3/24/2009		ug/l	0.0094	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	12/14/2009		ug/l	0.05	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	12/9/2010		ug/l	0.05	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	7/20/2011		ug/l	0.05	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	3/20/2012		ug/l	0.05	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	12/4/2013		ug/l	0.05	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	9/29/2014		ug/l	0.0047	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	6/16/2015		ug/L	0.0025	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	12/13/2016		ug/l	0.05	ND
MW-2S	529705	617515.4	alpha-BHC	BHCALPHA	4/23/2018		ug/L	0.02	ND
MW-2S	529705	617515.4	ARSENIC	AS	3/24/2009		ug/l	10	ND
MW-2S	529705	617515.4	ARSENIC	AS	12/14/2009		ug/l	10	ND
MW-2S	529705	617515.4	ARSENIC	AS	7/20/2011		ug/l	10	ND
MW-2S	529705	617515.4	ARSENIC	AS	3/20/2012		ug/l	1	ND
MW-2S	529705	617515.4	ARSENIC	AS	12/4/2013		ug/l	1	ND
MW-2S	529705	617515.4	ARSENIC	AS	9/29/2014		ug/l	1	ND
MW-2S	529705	617515.4	Arsenic	AS	6/16/2015		ug/L	1	ND
MW-2S	529705	617515.4	Arsenic	AS	12/13/2016		ug/L	1	ND
MW-2S	529705	617515.4	ARSENIC	AS	4/23/2018	0.48	ug/L	1	TR
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009		ug/l	0.5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	12/14/2009		ug/l	5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	7/20/2011		ug/l	0.5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	3/20/2012		ug/l	0.5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	12/4/2013		ug/l	0.5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	9/29/2014		ug/l	0.5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	6/16/2015		ug/L	0.5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	12/13/2016		ug/l	0.5	ND
MW-2S	529705	617515.4	TRICHLOROETHYLENE (TCE)	TCE	4/23/2018		ug/L	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	3/24/2009		ug/l	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	12/14/2009		ug/l	5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	7/20/2011		ug/l	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	3/20/2012		ug/l	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	12/4/2013		ug/l	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	9/29/2014		ug/l	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	6/16/2015		ug/L	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	12/13/2016		ug/l	0.5	ND
MW-2S	529705	617515.4	VINYL CHLORIDE	VC	4/23/2018		ug/L	0.5	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	3/24/2009		ug/l	0.01	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	12/15/2009		ug/l	0.05	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	12/8/2010		ug/l	0.05	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	7/19/2011		ug/l	0.05	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	3/20/2012		ug/l	0.05	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	12/5/2013		ug/l	0.05	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	9/30/2014		ug/l	0.0045	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	6/17/2015		ug/L	0.0025	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	12/12/2016		ug/l	0.05	ND
MW-3BR	531000.7	616365.4	alpha-BHC	BHCALPHA	4/24/2018		ug/L	0.02	ND
MW-3BR	531000.7	616365.4	ARSENIC	AS	3/24/2009		ug/l	10	ND
MW-3BR	531000.7	616365.4	ARSENIC	AS	12/15/2009		ug/l	10	ND
MW-3BR	531000.7	616365.4	ARSENIC	AS	7/19/2011		ug/l	10	ND
MW-3BR	531000.7	616365.4	ARSENIC	AS	3/20/2012	1.9	ug/l	1	
MW-3BR	531000.7	616365.4	ARSENIC	AS	12/5/2013	2.1	ug/l	1	
MW-3BR	531000.7	616365.4	ARSENIC	AS	9/30/2014	1.6	ug/l	1	
MW-3BR	531000.7	616365.4	Arsenic	AS	6/17/2015		ug/L	1	ND
MW-3BR	531000.7	616365.4	Arsenic	AS	12/12/2016	1.2	ug/L	1	
MW-3BR	531000.7	616365.4	ARSENIC	AS	4/24/2018	1.1	ug/L	1	
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	7/19/2011		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	3/20/2012		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	12/5/2013		ug/l	0.5	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	6/17/2015		ug/L	0.5	ND
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	12/12/2016		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	TRICHLOROETHYLENE (TCE)	TCE	4/24/2018		ug/L	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	3/24/2009		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	7/19/2011		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	3/20/2012		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	12/5/2013		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	9/30/2014		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	6/17/2015		ug/L	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	12/12/2016		ug/l	0.5	ND
MW-3BR	531000.7	616365.4	VINYL CHLORIDE	VC	4/24/2018		ug/L	0.5	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	3/24/2009		ug/l	0.01	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	12/15/2009		ug/l	0.2	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	12/14/2010		ug/l	0.05	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	7/19/2011		ug/l	0.05	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	3/20/2012		ug/l	0.05	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	12/4/2013		ug/l	0.05	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	10/1/2014		ug/l	0.0045	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	6/17/2015		ug/L	0.0025	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	12/12/2016		ug/l	0.05	ND
MW-3S	531004.3	616342.9	alpha-BHC	BHCALPHA	4/24/2018		ug/L	0.02	ND
MW-3S	531004.3	616342.9	ARSENIC	AS	3/24/2009		ug/l	10	ND
MW-3S	531004.3	616342.9	ARSENIC	AS	12/15/2009		ug/l	10	ND
MW-3S	531004.3	616342.9	ARSENIC	AS	7/19/2011		ug/l	10	ND
MW-3S	531004.3	616342.9	ARSENIC	AS	3/20/2012	2.9	ug/l	1	
MW-3S	531004.3	616342.9	ARSENIC	AS	12/4/2013		ug/l	1	ND
MW-3S	531004.3	616342.9	ARSENIC	AS	10/1/2014		ug/l	1	ND
MW-3S	531004.3	616342.9	Arsenic	AS	6/17/2015		ug/L	1	ND
MW-3S	531004.3	616342.9	Arsenic	AS	12/12/2016	1.4	ug/L	1	
MW-3S	531004.3	616342.9	ARSENIC	AS	4/24/2018	0.87	ug/L	1	TR
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009		ug/l	0.5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	7/19/2011		ug/l	0.5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	3/20/2012		ug/l	0.5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	12/4/2013		ug/l	0.5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	10/1/2014		ug/l	0.5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	6/17/2015		ug/L	0.5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	12/12/2016		ug/l	0.5	ND
MW-3S	531004.3	616342.9	TRICHLOROETHYLENE (TCE)	TCE	4/24/2018		ug/L	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	3/24/2009		ug/l	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	7/19/2011		ug/l	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	3/20/2012		ug/l	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	12/4/2013		ug/l	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	10/1/2014		ug/l	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	6/17/2015		ug/L	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	12/12/2016		ug/l	0.5	ND
MW-3S	531004.3	616342.9	VINYL CHLORIDE	VC	4/24/2018		ug/L	0.5	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	3/23/2009		ug/l	0.01	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	12/15/2009		ug/l	0.05	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	12/8/2010		ug/l	0.05	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	7/19/2011		ug/l	0.05	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	3/21/2012		ug/l	0.05	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	12/3/2013		ug/l	0.05	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	9/29/2014		ug/l	0.0047	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	6/15/2015		ug/L	0.0025	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	4/26/2018		ug/L	0.02	ND
MW-4BR	528348.2	617588.6	ARSENIC	AS	3/23/2009	5.1	ug/l	10	TR
MW-4BR	528348.2	617588.6	ARSENIC	AS	12/15/2009		ug/l	10	ND
MW-4BR	528348.2	617588.6	ARSENIC	AS	7/19/2011		ug/l	10	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
MW-4BR	528348.2	617588.6	ARSENIC	AS	3/21/2012	2.4	ug/l	1	
MW-4BR	528348.2	617588.6	ARSENIC	AS	12/3/2013	2.35	ug/l	1	
MW-4BR	528348.2	617588.6	ARSENIC	AS	9/29/2014	3	ug/l	1	
MW-4BR	528348.2	617588.6	Arsenic	AS	6/15/2015	2.25	ug/L	1	
MW-4BR	528348.2	617588.6	Arsenic	AS	12/13/2016	2.6	ug/L	1	
MW-4BR	528348.2	617588.6	ARSENIC	AS	4/26/2018	3.1	ug/L	1	
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	3/23/2009		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	7/19/2011		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	3/21/2012		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	12/3/2013		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	9/29/2014		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	6/15/2015		ug/L	0.5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	12/13/2016		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	TRICHLOROETHYLENE (TCE)	TCE	4/26/2018		ug/L	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	3/23/2009		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	7/19/2011		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	3/21/2012		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	12/3/2013		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	9/29/2014		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	6/15/2015		ug/L	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	12/13/2016		ug/l	0.5	ND
MW-4BR	528348.2	617588.6	VINYL CHLORIDE	VC	4/26/2018		ug/L	0.5	ND
MW-4BR	528348.2	617588.6	alpha-BHC	BHCALPHA	12/13/2016		ug/l	0.05	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	3/23/2009		ug/l	0.0094	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	12/15/2009		ug/l	0.05	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	12/8/2010		ug/l	0.05	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	7/20/2011		ug/l	0.05	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	3/21/2012		ug/l	0.05	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	6/15/2015		ug/L	0.0025	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	12/14/2016		ug/l	0.05	ND
MW-4S	528341.8	617603.2	alpha-BHC	BHCALPHA	4/23/2018		ug/L	0.02	ND
MW-4S	528341.8	617603.2	ARSENIC	AS	3/23/2009		ug/l	10	ND
MW-4S	528341.8	617603.2	ARSENIC	AS	12/15/2009		ug/l	10	ND
MW-4S	528341.8	617603.2	ARSENIC	AS	7/20/2011		ug/l	10	ND
MW-4S	528341.8	617603.2	ARSENIC	AS	3/21/2012		ug/l	1	ND
MW-4S	528341.8	617603.2	Arsenic	AS	6/15/2015		ug/L	1	ND
MW-4S	528341.8	617603.2	Arsenic	AS	12/14/2016	1.4	ug/L	1	
MW-4S	528341.8	617603.2	ARSENIC	AS	4/23/2018		ug/L	1	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	3/23/2009		ug/l	0.5	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	7/20/2011		ug/l	0.5	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	3/21/2012		ug/l	0.5	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014		ug/l	0.5	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	6/15/2015		ug/L	0.5	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	12/14/2016		ug/l	0.5	ND
MW-4S	528341.8	617603.2	TRICHLOROETHYLENE (TCE)	TCE	4/23/2018		ug/L	0.5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	3/23/2009		ug/l	0.5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	7/20/2011		ug/l	0.5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	3/21/2012		ug/l	0.5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	9/30/2014		ug/l	0.5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	6/15/2015		ug/L	0.5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	12/14/2016		ug/l	0.5	ND
MW-4S	528341.8	617603.2	VINYL CHLORIDE	VC	4/23/2018		ug/L	0.5	ND
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	3/25/2009	0.64	ug/l	0.05	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	12/15/2009	0.19	ug/l	0.05	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	12/13/2010	0.63	ug/l	0.05	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	7/21/2011	0.47	ug/l	0.05	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	3/23/2012	1.5	ug/l	0.05	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	12/9/2013	0.37	ug/l	0.05	

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	10/1/2014	0.43	ug/l	0.046	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	6/19/2015	0.16	ug/L	0.025	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	12/12/2016	0.16	ug/l	0.05	
MW-5BR	529113.9	617340	alpha-BHC	BHCALPHA	4/25/2018	0.099	ug/L	0.02	
MW-5BR	529113.9	617340	ARSENIC	AS	3/25/2009	214	ug/l	10	
MW-5BR	529113.9	617340	ARSENIC	AS	12/15/2009	180	ug/l	10	
MW-5BR	529113.9	617340	ARSENIC	AS	12/13/2010	150	ug/l	1	
MW-5BR	529113.9	617340	ARSENIC	AS	7/21/2011	135	ug/l	10	
MW-5BR	529113.9	617340	ARSENIC	AS	3/23/2012	160	ug/l	1	
MW-5BR	529113.9	617340	ARSENIC	AS	12/9/2013	140	ug/l	10	
MW-5BR	529113.9	617340	ARSENIC	AS	10/1/2014	170	ug/l	1	
MW-5BR	529113.9	617340	Arsenic	AS	6/19/2015	150	ug/L	1	
MW-5BR	529113.9	617340	Arsenic	AS	12/12/2016	136.5	ug/L	1	
MW-5BR	529113.9	617340	ARSENIC	AS	4/25/2018	118	ug/L	1	
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	3/25/2009		ug/l	0.5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	7/21/2011		ug/l	0.5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	3/23/2012		ug/l	0.5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	12/9/2013		ug/l	0.5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	10/1/2014		ug/l	0.5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	6/19/2015		ug/L	0.5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	12/12/2016		ug/l	0.5	ND
MW-5BR	529113.9	617340	TRICHLOROETHYLENE (TCE)	TCE	4/25/2018		ug/L	0.5	ND
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	3/25/2009	63	ug/l	5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	12/15/2009	56	ug/l	5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	12/13/2010	54	ug/l	0.5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	7/21/2011	66	ug/l	0.5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	3/23/2012	76	ug/l	0.5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	12/9/2013	57	ug/l	5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	10/1/2014	45	ug/l	2.5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	6/19/2015	65	ug/L	2.5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	12/12/2016	19.5	ug/l	0.5	
MW-5BR	529113.9	617340	VINYL CHLORIDE	VC	4/25/2018	17	ug/L	0.5	
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	3/25/2009	0.017	ug/l	0.05	
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	12/16/2009		ug/l	0.05	ND
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	12/13/2010		ug/l	0.05	ND
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	7/21/2011		ug/l	0.05	ND
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	3/24/2012		ug/l	0.05	ND
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	12/6/2013		ug/l	0.05	ND
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	9/30/2014	0.005	ug/l	0.0046	
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	6/19/2015	0.0095	ug/L	0.0025	
MW-6BR	529064.2	617054.4	alpha-BHC	BHCALPHA	12/13/2016		ug/l	0.05	ND
MW-6BR	529064.2	617054.4	ARSENIC	AS	3/25/2009	10.7	ug/l	10	
MW-6BR	529064.2	617054.4	ARSENIC	AS	12/16/2009		ug/l	10	ND
MW-6BR	529064.2	617054.4	ARSENIC	AS	7/21/2011		ug/l	10	ND
MW-6BR	529064.2	617054.4	ARSENIC	AS	3/24/2012	4.9	ug/l	1	
MW-6BR	529064.2	617054.4	ARSENIC	AS	12/6/2013	2.7	ug/l	1	
MW-6BR	529064.2	617054.4	ARSENIC	AS	9/30/2014	1.7	ug/l	1	
MW-6BR	529064.2	617054.4	Arsenic	AS	6/19/2015	1.6	ug/L	1	
MW-6BR	529064.2	617054.4	Arsenic	AS	12/13/2016	1.3	ug/L	1	
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	3/25/2009	0.5	ug/l	0.5	TR
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	12/16/2009		ug/l	5	ND
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	7/21/2011	0.18	ug/l	0.5	TR
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	3/24/2012		ug/l	0.5	ND
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	12/6/2013		ug/l	0.5	ND
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014		ug/l	0.5	ND
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	6/19/2015		ug/L	0.5	ND
MW-6BR	529064.2	617054.4	TRICHLOROETHYLENE (TCE)	TCE	12/13/2016		ug/l	0.5	ND
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	3/25/2009	0.47	ug/l	0.5	TR
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	12/16/2009		ug/l	5	ND
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	7/21/2011	0.11	ug/l	0.5	TR
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	3/24/2012		ug/l	0.5	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	12/6/2013		ug/l	0.5	ND
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	9/30/2014		ug/l	0.5	ND
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	6/19/2015	0.56	ug/L	0.5	
MW-6BR	529064.2	617054.4	VINYL CHLORIDE	VC	12/13/2016		ug/l	0.5	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	3/25/2009		ug/l	0.01	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	12/16/2009		ug/l	0.05	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	12/10/2010		ug/l	0.05	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	7/22/2011		ug/l	0.05	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	3/22/2012		ug/l	0.05	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	12/6/2013		ug/l	0.05	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	9/30/2014		ug/l	0.0045	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	6/17/2015		ug/L	0.0025	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	12/14/2016		ug/l	0.05	ND
MW-7BR	529631.5	616812.9	alpha-BHC	BHCALPHA	4/24/2018		ug/L	0.02	ND
MW-7BR	529631.5	616812.9	ARSENIC	AS	3/25/2009		ug/l	10	ND
MW-7BR	529631.5	616812.9	ARSENIC	AS	12/16/2009		ug/l	10	ND
MW-7BR	529631.5	616812.9	ARSENIC	AS	7/22/2011		ug/l	10	ND
MW-7BR	529631.5	616812.9	ARSENIC	AS	3/22/2012		ug/l	1	ND
MW-7BR	529631.5	616812.9	ARSENIC	AS	12/6/2013		ug/l	1	ND
MW-7BR	529631.5	616812.9	ARSENIC	AS	9/30/2014		ug/l	1	ND
MW-7BR	529631.5	616812.9	Arsenic	AS	6/17/2015	1.2	ug/L	1	
MW-7BR	529631.5	616812.9	Arsenic	AS	12/14/2016		ug/L	1	ND
MW-7BR	529631.5	616812.9	ARSENIC	AS	4/24/2018	0.18	ug/L	1	TR
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	3/25/2009	6.6	ug/l	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	12/16/2009		ug/l	5	ND
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	12/10/2010	2.7	ug/l	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	7/22/2011	1.6	ug/l	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	3/22/2012	1	ug/l	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	12/6/2013	1.6	ug/l	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014	2.3	ug/l	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	6/17/2015	1.8	ug/L	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	12/14/2016	1.3	ug/l	0.5	
MW-7BR	529631.5	616812.9	TRICHLOROETHYLENE (TCE)	TCE	4/24/2018	0.69	ug/L	0.5	
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	3/25/2009		ug/l	0.5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	12/16/2009		ug/l	5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	7/22/2011		ug/l	0.5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	3/22/2012		ug/l	0.5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	12/6/2013		ug/l	0.5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	9/30/2014		ug/l	0.5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	6/17/2015		ug/L	0.5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	12/14/2016		ug/l	0.5	ND
MW-7BR	529631.5	616812.9	VINYL CHLORIDE	VC	4/24/2018		ug/L	0.5	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	3/23/2009		ug/l	0.01	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	12/15/2009		ug/l	0.05	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	12/14/2010		ug/l	0.05	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	7/23/2011		ug/l	0.05	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	3/21/2012		ug/l	0.05	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	12/4/2013		ug/l	0.05	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	9/28/2014		ug/l	0.005	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	6/15/2015		ug/L	0.0025	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	12/14/2016		ug/l	0.05	ND
NUS-2D	528866.2	616745.8	alpha-BHC	BHCALPHA	4/26/2018		ug/L	0.02	ND
NUS-2D	528866.2	616745.8	ARSENIC	AS	3/23/2009	2.8	ug/l	10	TR
NUS-2D	528866.2	616745.8	ARSENIC	AS	12/15/2009		ug/l	10	ND
NUS-2D	528866.2	616745.8	ARSENIC	AS	7/23/2011		ug/l	10	ND
NUS-2D	528866.2	616745.8	ARSENIC	AS	3/21/2012	2.5	ug/l	1	
NUS-2D	528866.2	616745.8	ARSENIC	AS	12/4/2013	2.2	ug/l	1	
NUS-2D	528866.2	616745.8	ARSENIC	AS	9/28/2014	2.4	ug/l	1	
NUS-2D	528866.2	616745.8	Arsenic	AS	6/15/2015	2.5	ug/L	1	
NUS-2D	528866.2	616745.8	Arsenic	AS	12/14/2016		ug/L	1	ND
NUS-2D	528866.2	616745.8	ARSENIC	AS	4/26/2018	1.6	ug/L	1	
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	3/23/2009		ug/l	0.5	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	7/23/2011		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	3/21/2012		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	12/4/2013		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	9/28/2014		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	6/15/2015		ug/L	0.5	ND
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	12/14/2016		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	TRICHLOROETHYLENE (TCE)	TCE	4/26/2018		ug/L	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	3/23/2009		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	7/23/2011		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	3/21/2012		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	12/4/2013		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	9/28/2014		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	6/15/2015		ug/L	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	12/14/2016		ug/l	0.5	ND
NUS-2D	528866.2	616745.8	VINYL CHLORIDE	VC	4/26/2018		ug/L	0.5	ND
NUS-3D	528591.5	616683.5	alpha-BHC	BHCALPHA	3/23/2009		ug/l	0.0094	ND
NUS-3D	528591.5	616683.5	alpha-BHC	BHCALPHA	6/15/2015		ug/L	0.0025	ND
NUS-3D	528591.5	616683.5	alpha-BHC	BHCALPHA	12/14/2016		ug/l	0.05	ND
NUS-3D	528591.5	616683.5	alpha-BHC	BHCALPHA	4/23/2018	0.015	ug/L	0.02	TR
NUS-3D	528591.5	616683.5	ARSENIC	AS	3/23/2009		ug/l	10	ND
NUS-3D	528591.5	616683.5	Arsenic	AS	6/15/2015	3	ug/L	1	
NUS-3D	528591.5	616683.5	Arsenic	AS	12/14/2016		ug/L	1	ND
NUS-3D	528591.5	616683.5	Arsenic	AS	4/23/2018	0.55	ug/L	1	TR
NUS-3D	528591.5	616683.5	TRICHLOROETHYLENE (TCE)	TCE	3/23/2009		ug/l	0.5	ND
NUS-3D	528591.5	616683.5	TRICHLOROETHYLENE (TCE)	TCE	6/15/2015		ug/L	0.5	ND
NUS-3D	528591.5	616683.5	TRICHLOROETHYLENE (TCE)	TCE	12/14/2016		ug/l	0.5	ND
NUS-3D	528591.5	616683.5	TRICHLOROETHYLENE (TCE)	TCE	4/23/2018		ug/L	0.5	ND
NUS-3D	528591.5	616683.5	VINYL CHLORIDE	VC	3/23/2009		ug/l	0.5	ND
NUS-3D	528591.5	616683.5	VINYL CHLORIDE	VC	6/15/2015		ug/L	0.5	ND
NUS-3D	528591.5	616683.5	VINYL CHLORIDE	VC	12/14/2016		ug/l	0.5	ND
NUS-3D	528591.5	616683.5	VINYL CHLORIDE	VC	4/23/2018		ug/L	0.5	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	3/23/2009		ug/l	0.0094	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	12/15/2009		ug/l	0.05	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	12/14/2010		ug/l	0.05	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	7/23/2011		ug/l	0.05	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	3/21/2012		ug/l	0.05	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	12/5/2013		ug/l	0.05	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	9/28/2014		ug/l	0.005	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	6/15/2015		ug/L	0.0025	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	12/14/2016		ug/l	0.05	ND
NUS-3S	528598.9	616681	alpha-BHC	BHCALPHA	4/26/2018		ug/L	0.02	ND
NUS-3S	528598.9	616681	ARSENIC	AS	3/23/2009		ug/l	10	ND
NUS-3S	528598.9	616681	ARSENIC	AS	12/15/2009		ug/l	10	ND
NUS-3S	528598.9	616681	ARSENIC	AS	7/23/2011		ug/l	10	ND
NUS-3S	528598.9	616681	ARSENIC	AS	3/21/2012		ug/l	1	ND
NUS-3S	528598.9	616681	ARSENIC	AS	12/5/2013	8.9	ug/l	1	
NUS-3S	528598.9	616681	ARSENIC	AS	9/28/2014		ug/l	1	ND
NUS-3S	528598.9	616681	Arsenic	AS	6/15/2015	1.3	ug/L	1	
NUS-3S	528598.9	616681	Arsenic	AS	12/14/2016		ug/L	1	ND
NUS-3S	528598.9	616681	ARSENIC	AS	4/26/2018	2.5	ug/L	1	
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	3/23/2009		ug/l	0.5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	12/15/2009		ug/l	5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	7/23/2011		ug/l	0.5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	3/21/2012		ug/l	0.5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	12/5/2013		ug/l	0.5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	9/28/2014		ug/l	0.5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	6/15/2015		ug/L	0.5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	12/14/2016		ug/l	0.5	ND
NUS-3S	528598.9	616681	TRICHLOROETHYLENE (TCE)	TCE	4/26/2018		ug/L	0.5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	3/23/2009		ug/l	0.5	ND

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	12/15/2009		ug/l	5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	7/23/2011		ug/l	0.5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	3/21/2012		ug/l	0.5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	12/5/2013		ug/l	0.5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	9/28/2014		ug/l	0.5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	6/15/2015		ug/L	0.5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	12/14/2016		ug/l	0.5	ND
NUS-3S	528598.9	616681	VINYL CHLORIDE	VC	4/26/2018		ug/L	0.5	ND
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	3/25/2009	0.028	ug/l	0.05	
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	12/14/2009	0.019	ug/l	0.05	TR
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	12/10/2010	0.029	ug/l	0.05	TR
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	7/21/2011		ug/l	0.05	ND
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	3/22/2012	0.062	ug/l	0.05	
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	12/5/2013		ug/l	0.05	ND
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	9/30/2014	0.026	ug/l	0.0046	
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	6/17/2015	0.011	ug/L	0.0025	
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	12/15/2016		ug/l	0.05	ND
QD	529370.6	616751.9	alpha-BHC	BHCALPHA	4/26/2018	0.024	ug/L	0.02	
QD	529370.6	616751.9	ARSENIC	AS	3/25/2009		ug/l	10	ND
QD	529370.6	616751.9	ARSENIC	AS	12/14/2009		ug/l	10	ND
QD	529370.6	616751.9	ARSENIC	AS	7/21/2011		ug/l	10	ND
QD	529370.6	616751.9	ARSENIC	AS	3/22/2012		ug/l	1	ND
QD	529370.6	616751.9	ARSENIC	AS	12/5/2013		ug/l	1	ND
QD	529370.6	616751.9	ARSENIC	AS	9/30/2014		ug/l	1	ND
QD	529370.6	616751.9	Arsenic	AS	6/17/2015		ug/L	1	ND
QD	529370.6	616751.9	Arsenic	AS	12/15/2016		ug/L	1	ND
QD	529370.6	616751.9	ARSENIC	AS	4/26/2018		ug/L	1	ND
QD	529370.6	616751.9	DINOSEB	DINOSEB	12/14/2009	5	ug/l	1	
QD	529370.6	616751.9	DINOSEB	DINOSEB	12/10/2010	4.7	ug/l	0.25	
QD	529370.6	616751.9	DINOSEB	DINOSEB	7/21/2011	5.4	ug/l	0.25	
QD	529370.6	616751.9	DINOSEB	DINOSEB	3/22/2012	6.2	ug/l	0.25	
QD	529370.6	616751.9	DINOSEB	DINOSEB	3/22/2012	3.4	ug/l	0.25	
QD	529370.6	616751.9	DINOSEB	DINOSEB	12/5/2013	2.8	ug/l	0.25	
QD	529370.6	616751.9	DINOSEB	DINOSEB	9/30/2014	2.55	ug/l	0.25	
QD	529370.6	616751.9	DINOSEB	DINOSEB	12/15/2016		ug/l	0.0724	ND
QD	529370.6	616751.9	DINOSEB	DINOSEB	4/26/2018	7.7	ug/l	9.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	3/25/2009	1.5	ug/l	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	12/14/2009		ug/l	5	ND
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	12/10/2010	2.3	ug/l	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	7/21/2011	1.3	ug/l	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	3/22/2012	1.4	ug/l	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	12/5/2013	2	ug/l	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	9/30/2014	1.4	ug/l	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	6/17/2015	2.05	ug/L	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	12/15/2016	2	ug/l	0.5	
QD	529370.6	616751.9	TRICHLOROETHYLENE (TCE)	TCE	4/26/2018	1.7	ug/L	0.5	
QD	529370.6	616751.9	VINYL CHLORIDE	VC	3/25/2009		ug/l	0.5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	12/14/2009		ug/l	5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	7/21/2011		ug/l	0.5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	3/22/2012		ug/l	0.5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	12/5/2013		ug/l	0.5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	9/30/2014		ug/l	0.5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	6/17/2015		ug/L	0.5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	12/15/2016		ug/l	0.5	ND
QD	529370.6	616751.9	VINYL CHLORIDE	VC	4/26/2018		ug/L	0.5	ND
UU	530363.2	616309.5	alpha-BHC	BHCALPHA	3/24/2009		ug/l	0.01	ND
UU	530363.2	616309.5	alpha-BHC	BHCALPHA	6/18/2015		ug/L	0.0025	ND
UU	530363.2	616309.5	alpha-BHC	BHCALPHA	12/14/2016		ug/l	0.05	ND
UU	530363.2	616309.5	alpha-BHC	BHCALPHA	4/26/2018		ug/L	0.02	ND
UU	530363.2	616309.5	ARSENIC	AS	3/24/2009		ug/l	10	ND
UU	530363.2	616309.5	Arsenic	AS	6/18/2015	4.7	ug/L	1	
UU	530363.2	616309.5	Arsenic	AS	12/14/2016	6.6	ug/L	1	
UU	530363.2	616309.5	Arsenic	AS	4/26/2018	1.6	ug/L	1	
UU	530363.2	616309.5	TRICHLOROETHYLENE (TCE)	TCE	3/24/2009	1.7	ug/l	0.5	
UU	530363.2	616309.5	TRICHLOROETHYLENE (TCE)	TCE	6/18/2015	0.79	ug/L	0.5	

Well Name	XCoord	YCoord	Constituent	CODE	SampleDate	Result	Units	DetLim	Flags
UU	530363.2	616309.5	TRICHLOROETHYLENE (TCE)	TCE	12/14/2016	1	ug/l	0.5	
UU	530363.2	616309.5	TRICHLOROETHYLENE (TCE)	TCE	4/26/2018	0.61	ug/L	0.5	
UU	530363.2	616309.5	VINYL CHLORIDE	VC	3/24/2009		ug/l	0.5	ND
UU	530363.2	616309.5	VINYL CHLORIDE	VC	6/18/2015		ug/L	0.5	ND
UU	530363.2	616309.5	VINYL CHLORIDE	VC	12/14/2016		ug/l	0.5	ND
UU	530363.2	616309.5	VINYL CHLORIDE	VC	4/26/2018		ug/L	0.5	ND

In 2008 O'Brian and Gere performed an Additional Groundwater Investigation (AGI). Part of the AGI defined the site conditions for OU4 of CIC to support trend analysis as calculated by the MAROS program. The analysis was needed to accurately monitor and assess the effectiveness of the site OU 3 and OU4 remedies. In 2005, the OU3 final remedy implementation of excavation of surface and subsurface soils that were impacted by site contaminants was completed. OU4, the impacted groundwater at the site was enrolled in a long-term monitoring program to document natural attenuation. In the 13 years since the source area removal action, the characteristics of OU4 have evolved as part of effective natural attenuation. The definitions that feed the MAROS calculations consist of four categories. These categories include Hydrogeology, Source Information, Distance from Source to Nearest Receptor, Distance from edge of Tail to Nearest Receptor.

Starting with the 2018 investigation report the parameters will be updated to reflect present conditions and changed in MAROS to support the assessment of effectiveness as well as the addition of optimization assessment to the site. The table below presents the original Parameters and the new parameters.

CIC MAROS Calculation Parameters
Site Information and Hydrogeology

	2008	**2018**
Hydrogeology		
Hydraulic Conductivity	1.11 ft/day or 0.0004 cm/sec	NC
Porosity	35%	NC
Horizontal Gradient (Ft/Ft)	0.02-0.04	NC
Groundwater Seepage Velocity (Ft/yr)	35	NC
Current Plume Width (ft)	600	100
current Plume Length (ft)	800	200
Maximum Plume Length (ft)	1500	200
Number of Tail Wells	16	5
Number of Source Wells	9	3
Number of Delineation Wells	0	17
Source Information		
Free Phase NAPL Present	No	NC
Current Source Treatment	Excavation and Natural Attenuation	Natural Attenuation
Distance from source to Nearest Receptor[1]		
Down-gradient receptor	100 ft	NC
Down-gradient Property	100 Ft	NC
Distance from Edge of Tail to Nearest Receptor[2]		
Down-gradient receptor	200 ft	500 ft
Down-gradient Property	200 ft	500 ft

Notes:

NC = No Change

Source Wells (3): BF-2, BF-2D, MW-5BR

Tail Wells (5): BF-4, QD, MW-7BR, UU, MW-6BR, BF-5

Delineation Wells (17): NUS-3D, NUS-3S, NUS-2D, MW-4BR, MW-4S, MW-1BRS, MW-1BRD, MW-2BR, MW-2I, MW-2S, MW-3S, MW-3BR, FU, GU, OU, MW-8BR

1 - Source is CIC property, 1st Receptor is Automatic Rolls Building

2 - Tail in 2008 assumed to be MW-8BR, Tail in 2018 is assumed to be MW-7BR, Receptor is Total TEC building

Definitions

Source Well: A well in the known source area, impacted by contaminants of concern

Tail Well: A well in the presumed area of contaminant transport, may or may not be impacted by contaminants

Delineation Wells: A well outside of the presumed area of contaminant transport, a non detect well that identifies with confidence the boundary of plume.