SEMI-ANNUAL MONITORING REPORT
JULY - DECEMBER 2017

for the

Delaware Sand & Gravel Superfund Site
New Castle, Delaware

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ACRONYMS AND ABBREVIATIONS

ACL	Army Creek Landfill
AWC	Artesian Water Company
BCEE	bis (2-chloroethyl) ether
BRA	Bioremediation Area
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
cis-1,2,-DCE	cis-1,2-dichloroethene
COCs	Chemicals of Concerns
COPCs	Chemicals of Potential Concern
CSM	Conceptual Site Model
1,2-DCA	1,2-Dichloroethane
DDA	Drum Disposal Area
DNREC	State of Delaware Department of Natural Resources and Environmental Control
DO	Dissolved Oxygen
DS&G	Delaware Sand & Gravel
DQA	Data Quality Assessment
FS	Feasibility Study
FS Rev 1	Feasibility Study - Revision 1
FSWP Rev 2	Feasibility Study Work Plan - Revision 2
ft-bgs	feet below ground surface
gpm	gallons per minute
GWTT	Groundwater Treatment and Technology
HDPE	High-Density Polyethylene
HI	Hazard Index
lbs	pounds
LCS	Laboratory Control Sample
LFExS	Low-Flow Extraction System
LIMS	Laboratory Information Management System
MCLs	Maximum Contaminant Levels
mg/L	milligrams per liter
MS/MSD	Matrix Spike/Matrix Spike Duplicate
mV	millivolts
NAPs	Natural Attenuation Parameters
NCC	New Castle County
NTUs	Nephelometric Turbidity Units
OM&M	Operation, Maintenance and Monitoring
ORP	Oxidation/Reduction Potential
OU	Operable Unit
PCB	Polychlorinated biphenyls
POTW	Publicly Owned Treatment Works
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance/Quality Control
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RSL	Regional Screening Levels
SAP	Sampling and Analysis Plan
ss-PRG	Site-specific Preliminary Remediation Goals
SSC Rev 2	Supplemental Site Characterization Report – Revision 2
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
1,2,4-TMB	1,2,4-Trimethylbenzene
TTO	Total Toxic Organics
TVOC	Total Volatile Organic Compound
µg/L	micrograms per liter
UPA	Upper Potomac Aquifer

UPCU	Upper Potomac Confining Unit
UPCUTZ	UPCU Transition Zone
USEPA	United States Environmental Protection Agency
VBVS	Vertical Bioventing System
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

On behalf of the Delaware Sand & Gravel (DS&G) Remedial Trust (the Trust), Golder Associates Inc. (Golder) is providing this Semi-Annual Monitoring Report for the Delaware Sand & Gravel Superfund Site (the Site) located in New Castle, Delaware (see Figures 1 and 2). This report covers the monitoring activities conducted at the Site from July to December 2017 including the following:

- Groundwater monitoring in accordance with the October 2011 Feasibility Study Work Plan Revision 2 (FSWP Rev 2) Sampling and Analysis Plan (SAP) (Golder, 2011b)
- Sampling of additional monitoring wells in support of the ongoing pre-design activities
- Low-flow extraction system (LFExS) operation, maintenance and monitoring (OM&M)
- Pumping well PW-1(U) OM&M

In addition to Site-wide groundwater quality data, this report also presents the following for the period covered by this report:

- an evaluation of groundwater characteristics associated with the Drum Disposal Area (DDA), including hydraulic containment/hydraulic gradient evaluations in support of the LFExS performance evaluation,
- estimates of mass removed by the LFExS,
- an estimate of mass removed by pumping at well PW-1(U), and
- an estimate of mass loading to the New Castle County (NCC) sewer system (publicly-owned treatment works [POTW]) during the period covered by this report.

1.1 Groundwater Monitoring

The September-October 2017 monitoring event was conducted in accordance with the FSWP Rev 2 SAP (Golder, 2011b), with addition of select monitoring wells as approved by the United States Environmental Protection Agency (USEPA) and State of Delaware Department of Natural Resources and Environmental Control (DNREC) to monitor groundwater conditions at and downgradient of the Site. The monitoring wells and/or piezometers sampled during the period covered by this report are listed on Table 1 and shown on Figures 3 and 4. A synoptic round of water levels was collected before the start of the monitoring event. Table 2 provides the gauged water levels and calculated groundwater elevations for the September-October 2017 monitoring event.

In addition to the September-October 2017 routine monitoring event, bimonthly monitoring events were voluntarily performed in June[1], September and December 2017 for four wells (MW-26N, UPA-03D, AWC-E1, and AWC-E2) located upgradient of well AWC-G3R. The sampling frequency for these wells was increased to evaluate the migration of manganese and the leachate plume from the area of combined mass

[1] The data for the June 2017 monitoring event was in the validation process when the January to June 2017 report was submitted; therefore, the data is being presented in this report.

between the DS&G and Army Creek Landfill (ACL) Sites toward Artesian Water Company's (AWC's) Llangollen Wellfield.

1.2 LFExS and Well PW-1(U) Operation, Maintenance and Monitoring

The LFExS extracts groundwater from the DDA at a target extraction rate of 8 to 10 gallons per minute (gpm) and discharges the extracted water directly to the NCC sewer system. The LFExS provides hydraulic containment and removal of volatile organic compounds (VOCs) and bis(2-chloroethyl) ether (BCEE) contaminant mass from the groundwater within the DDA through operation of eight extraction wells (see Appendix B of Golder, 2016b). Additional discussion is included in Section 2.2.

In June 2004, NCC and the DS&G Trust worked together to install pumping well PW-1[2] in the vicinity of monitoring well DGC-7S to complete the groundwater divide between the DDA and AWC's Llangollen wellfield and to provide capture of Upper Potomac Aquifer (UPA) groundwater in the vicinity of the DDA. On October 15, 2012, the Trust assumed hands-on responsibility for the operation and maintenance of pumping well PW-1(U) from NCC. The well PW-1(U) system discharges directly to the NCC sanitary sewer system (POTW). The NCC sewer discharge permit was modified to include the discharge from both the LFExS and pumping well PW-1(U) with the total combined flow now permitted at 51 gpm.

Since the Trust assumed hands-on responsibility for operation and maintenance, well PW-1(U) has extracted groundwater at a rate between approximately 30 and 40 gpm (instantaneous extraction rate). A summary of the LFExS and well PW-1(U) system operation and monitoring results since installation of the systems is presented in the Supplemental Site Characterization Report – Revision 2 (SSC Rev 2) dated January 29, 2016 (Golder, 2016a). As presented in the SSC Rev 2 Report, the groundwater data indicate that operation of pumping well PW-1(U) captures some contaminant mass within the UPA upper sand groundwater to the north and northwest of well PW-1(U). Operation of well PW-1(U) is also providing some capture of the impacts observed in the Upper Potomac Confining Unit Transition Zone (UPCUTZ) between the DDA and well PW-1(U).

During the September-October 2017 monitoring event, the extraction wells for both systems were sampled and analyzed in accordance with the FSWP Rev 2 SAP, and samples were also collected and analyzed for parameters required by the NCC sewer discharge permit. A summary of the LFExS OM&M activities conducted during the period covered by this report are presented in Sections 3.4.1, 3.4.2, and 4.1. Well

[2] Wells PW-1(L) (screened in the lower sand of the UPA) and PW-1(U) (screened in the upper sand of the UPA) began operation in October 2004. Well PW-1(L) was operated until January 25, 2005, when the USEPA "approved termination of pumping from the lower zone [well PW-1(L)] because multiple rounds of chemical-quality data and hydraulic data demonstrated that the lower zone is generally free of contaminants and is hydraulically separated from the upper zone [well PW-1(U)]" (Ruth, 2007). On May 23, 2011, the portion of well PW-1 containing well PW-1(L) was grouted up to just below the base of well PW-1(U) (Ruth, 2013).

PW-1(U) monitoring activities conducted during the period covered by this report are presented in Sections 3.4.3 and 4.2.

2.0 SITE SETTING AND PREVIOUS ACTIVITIES

The detailed Conceptual Site Model (CSM) originally presented in the FSWP Rev 2 (Golder, 2011b) was most recently updated in the Final FS Report - Revision 1 (Final FS Rev 1; Golder, 2016b). The sections below briefly present the Site history and description, remedial activities to date, and an overview of the chemicals of concern (COCs).

2.1 Brief Site History and Description

The DS&G Site is approximately 27 acres in area, and is located in an area of residential and light-industrial use with many residential developments within one mile. The Site is bound to the north and northeast by the Norfolk Southern Railroad tracks and to the west by Army Creek, which eventually discharges into the Delaware River.

Prior to 1968, the DS&G Site operated as a sand and gravel quarry, following which filling operations began. Between 1968 and 1976, the DS&G Landfill collected approximately 550,000 cubic yards of waste including about 13,000 drums[3] containing liquids and sludges from chemical production, manufacturing, and petroleum-refining processes. (USEPA, 2005) The following presents a summary of the disposal area activities from the 1993 Record of Decision (ROD) Amendment for the DS&G Site:

- The Drum Disposal Area (DDA): "This area was originally a pit where drums containing liquids and sludges, including perfume, plastics, paint, and petroleum, from various industrial processes were disposed. The majority of drum contents were organics and inorganic solids." (USEPA, 1993)
- The Ridge Area: "...was used primarily for surface storage of drums and large storage tanks containing inorganic and organic sludges and solids. The drums and tanks have been removed, or emptied, and steam cleaned; however, contaminated surface soils remain." (USEPA, 1993)
- The Inert Disposal Area: "Field investigations suggest that nearly one half million cubic yards of construction rubble and scattered chemical wastes were deposited in this disposal area. The refuse was covered with a thin layer of soil. Abandoned cars, trucks, storage tanks, and other solid wastes currently occupy the surface of the Inert Disposal Area." (USEPA, 1993)
- The Grantham South Area: "An estimated 73,400 cubic yards of construction rubble and scattered chemical wastes were deposited in a layer nearly 35 feet thick. Pre-construction field investigations identified elevated levels of organic and inorganic contaminants within the refuse layer" (USEPA, 1993). Between 1988 and 1991, the US Army Corps of Engineers installed a cap on the Grantham South Area.

The ACL Superfund Site is located immediately west of the DS&G Site across Army Creek/Army Pond. The ACL Site is a 60-acre abandoned sand and gravel quarry that was operated by NCC as an unlined

[3] The 1993 Amended ROD indicates "approximately 550,000 cubic yards of industrial wastes and construction debris, including at least 7,000 drums, were disposed of within four distinct disposal areas on the DS&G property" (USEPA, 1993).

landfill between 1960 and 1968, and received 1.9 million cubic yards of municipal and industrial wastes (USEPA, 1998).

2.2 Previous and Ongoing Remedial Activities

In 1984, the USEPA and DNREC conducted an immediate removal action, removing more than 1,600 drums from the surface of the DDA and Ridge Areas (USEPA, 1984). Between 1989 and 1991, a multi-layer landfill cap, gas venting system, and perimeter fence were installed in the Grantham South Area. Between 1996 and 1997, the Trust constructed an 11-acre, multi-layer, landfill cap over the Inert Area.

In 1994, the Trust constructed a slurry-wall system to enclose an area of about three acres, including the DDA and the surrounding soils affected by historical releases from the DDA. The slurry-wall system consists of a three-foot thick, soil-bentonite slurry wall keyed into the underlying Upper Potomac Confining Unit (UPCU; clay unit), where present, and ranges in depth from 17 to 57 feet below ground surface (ft-bgs) (USEPA, 1997). Between 1995 and 1997, the Trust completed remedial activities for the DDA (including drum and soil removal, and construction of a bio-venting system within the slurry-wall system) and Ridge Area (implemented under OU4 and OU5, which superseded OU2). (USEPA, 1997)

The area within the slurry-wall system is divided by a partition wall, which isolates the portion of the DDA with contaminated soils (containment area) from the area where the clay is thin, discontinuous, or not present (partition area). Around the partition area, the slurry wall is classified as a "hanging wall" because the UPCU is absent beneath this section of wall.

An overview of the OU4 (Ridge Area/DDA excavation of drums and highly contaminated wastes) and OU5 (Ridge Area/DDA bio-cell construction and operation) activities is provided in the USEPA's 1999 Five-Year Review (FYR; USEPA, 1999), where the USEPA states the following:

> "Excavation of buried drums within the DDA began in August 1995 and was completed in August 1996. An estimated 13,000 drums were removed and transported off-site for treatment and/or disposal. In addition, approximately 2,300 cubic yards of PCB [polychlorinated biphenyl] contaminated soil was transported off-site for incineration between February and May 1996. Construction of the DDA slurry wall was completed during summer 1996[4]. Construction of the bioremediation (bioventing) system designed to treat 80,000 cubic yards of contaminated soils within the DDA slurry wall began in September 1996 and was completed in July 1997. The bioremediation process for contaminated soils began in July 1997 and will operate for a projected period of approximately eight years under the O&M Phase."

Between 1997 and 2009, the Trust operated an active remediation (bio-venting) system within a portion of the DDA referred to as the Bioremediation Area (BRA). Between 1996 and 1997 the Trust installed the BRA which included two components: a bio-cell and a VBVS, which treated the interval below the bio-cell.

[4] The 1999 FYR indicates slurry-wall construction was completed in 1996; however, the construction was essentially completed in 1994. The Preliminary Close Out Report (USEPA, 1997) states that the USEPA accepted the certification of completion for the slurry wall on February 23, 1995.

The bio-cell included the original 0.8-acre area where drums were disposed within the DDA, and the soils that were excavated and consolidated from the DDA and the Ridge Area. The Trust mixed the excavated soils with wood chips, sand, and di-ammonium phosphate to enhance the biodegradation of the soil contaminants prior to placement within the bio-cell (additional discussion is provided in Appendix C of the Final FS Rev1). As described in more detail in Appendix B of the Final FS Rev1, the Trust constructed and operated the bio-cell above the surface of the Columbia Aquifer water table (as influenced by operation of an extraction well to lower and maintain the water table beneath the bio-cell).

In 2005, with concurrence of the USEPA, the Trust suspended operation of the VBVS portion of the system, due to high water levels[5] in the VBVS extraction wells. The bio-cell is located at a higher elevation than the VBVS; therefore, operation of the bio-cell was not affected by the high water levels. The bio-cell continued to operate until 2009 when the Trust suspended active operation of the bio-cell because the technical limits of the system (asymptotic performance) had been achieved. Portions of the bio-cell's aboveground piping and appurtenances were subsequently removed to enable construction of the LFExS.

As indicated in Section 3.1.2 of the SSC Rev 2, a groundwater recovery system was operated by NCC between 1973 and October 2004 to extract contaminated groundwater from the UPA and in an attempt to create a groundwater divide between the Sites (ACL and DS&G) and AWC's Llangollen wellfield.

In October 2004, NCC began pumping from well PW-1 (as discussed in Section 1.2) and initiated a pilot study to shut down the NCC recovery well system. The NCC groundwater recovery system has been shut down since that time.

In May 2009, the Trust began operation of the LFExS, which initially extracted water from six extraction wells within the DDA (wells C-2D, C-19D, C-18D, BG-1, C-4D, and B-4D). The LFExS started temporary operation on May 4, 2009 and operated at a monthly average flow rate of approximately 2 to 5 gallons per minute (gpm) until the system was shut down for construction of the permanent system in December 2009. Operation of the permanent system started on February 23, 2010. In September 2010, the Trust completed construction of an additional extraction well within the DDA (C-30) and in December 2012, existing well C-20D began operation as part of the LFExS. As indicated in Section 1.2, the system discharges directly to the NCC sewer system under a permit with NCC.

The LFExS currently has eight operational extraction wells (wells C-2D, C-19D, C-18D, BG-1, C-4D, B-4DR, C-30 and C-20D as shown on Figure 4) that provide hydraulic containment within the DDA by inducing inward (horizontal) gradients in the Columbia Aquifer across the slurry walls, and upward (vertical) gradients between the UPA upper sand and the Columbia Aquifer (i.e., maintaining a lower potentiometric head within

[5] Shutdown of the NCC system in 2004 resulted in a rise in the Columbia Aquifer and UPA potentiometric surfaces.

the DDA). Operation of the LFExS also removes VOC and semi-VOC (SVOC, primarily BCEE and 1,4-dioxane[6]) dissolved-phase contaminant mass from within the DDA containment area.

Completed actions have achieved important remedial objectives at the Site. The USEPA has indicated that the remedial activities at the Grantham South, Inert Area, and Ridge Area are currently protective of human health and the environment; however, the USEPA has indicated that "in order for the remedy to be protective in the long term, additional response actions are needed at the DDA" (USEPA, 2015a). Ongoing activities, including maintenance of caps over the DDA and Grantham South and Inert Areas and operation of well PW-1(U) and the LFExS, address sources and potential exposure pathways on the DS&G property.

2.3 Chemicals of Concern

A list of COCs were provided in the Technical Memorandum – *Revised Addendum to Development of Site-Specific Preliminary Remediation Goals – Revision 2*, dated October 16, 2017 (Revised Addenum to Development of ss-PRGs – Rev 2; Golder, 2017). As discussed in the document and presented below, the COCs in groundwater at the Site include VOCs (benzene, and four alkylbenzenes [ethylbenzene; xylenes; 1,2,4-trimethylbenzene; and 1,3,5-trimethylbenzene]), SVOCs (BCEE; 1,4-dioxane[7]; naphthalene; and N,N-dimethylaniline), and metals (arsenic, cobalt, iron and manganese).

Based on review of the available analytical data, it is apparent that the ACL Site represents an on-going source of contaminant mass (primarily iron and manganese, which are also COCs at the DS&G Site) to the UPA. As stated by the USEPA in their comments dated December 19, 2014, "the Army Creek Landfill may be characterized as an indirect source of dissolved iron and manganese and a source of 1,2-dichloroethane [1,2-DCA] in the UPA. Elevated total arsenic and cobalt are also found in groundwater downgradient of the Army Creek Landfill and appear to be site-related." (USEPA, 2014)

[6] 1,4-dioxane is considered an SVOC due to its fate and transport properties and is handled as such within the context of the CSM. However, since it is analyzed via a VOC analytical method, the 1,4-dioxane results are presented in Sections 3.4 and 4, and Appendix B grouped with the other VOC analytes.

[7] 1,4-dioxane is detected using a VOC analytical method and is presented as a VOC in Appendix B.

Chemical of Concern	ss-PRG (micrograms per liter [µg/L])	Notes
1,2,4-Trimethylbenzene	5.7	COC-specific Non-Carcinogenic PRG
1,3,5-Trimethylbenzene	6.1	COC-specific Non-Carcinogenic PRG
1,4-Dioxane	4.6	Carcinogenic PRG with a Target Risk of 1.0E-05
Arsenic	0.52	Carcinogenic PRG with a Target Risk of 1.0E-05
Benzene	4.6	Carcinogenic PRG with a Target Risk of 1.0E-05
Bis(2-chloroethyl) Ether	0.14	Carcinogenic PRG with a Target Risk of 1.0E-05
Cobalt	6.0	COC-specific Non-Carcinogenic PRG
Ethylbenzene	15	Carcinogenic PRG with a Target Risk of 1.0E-05
Iron	13,939	COC-specific Non-Carcinogenic PRG
Manganese	260	COC-specific Non-Carcinogenic PRG
N,N-dimethylaniline	25	Carcinogenic PRG with a Target Risk of 1.0E-05
Naphthalene	0.63	COC-specific Non-Carcinogenic PRG
Xylenes, Total	21	COC-specific Non-Carcinogenic PRG

3.0 GROUNDWATER SAMPLING AND ANALYSES

Consistent with the FSWP Rev 2 SAP (Golder, 2011b), Golder measured water levels, sampled wells and submitted the samples for analysis to monitor performance of the LFExS and the PW-1(U) system. Also consistent with the FSWP Rev 2 SAP, Golder performed routine groundwater monitoring in the UPA at and downgradient of the Site (see well list in Table 1). The monitoring locations are shown on Figures 3 and 4.

The semi-annual groundwater monitoring events are typically conducted in April and October each year and the results are summarized in semi-annual monitoring reports. This July to December 2017 semi-annual report provides the groundwater monitoring results from the September-October 2017 routine semi-annual monitoring event[8], as summarized on Table 1.

As outlined in the FSWP Rev 2 SAP, this semi-annual report includes the following information:

- Purpose and scope of monitoring
- Brief description of field procedures
- Summary of collected field data, including a table of field sampling parameters
- Groundwater elevation contour maps
- Laboratory analytical data tables (new data only)
- Trend plots of constituent concentrations over time
- Mass removal estimates based on a comparison of previous to current remaining mass estimates, and calculation of mass extracted by the LFExS
- Mass remaining estimates based on contouring the semi-annual groundwater data and calculating the residual mass in the saturated zone[9]
- Recommendations for additional monitoring or system enhancements

3.1 Groundwater Elevations

The piezometers and wells gauged and the groundwater elevations calculated for the September-October 2017 monitoring event are listed on Table 2. Depth to water was measured[10] using a decontaminated electronic water level indicator from the top of casing reference points, and water elevations were subsequently calculated using surveyed elevation information. The October 2017 groundwater elevations were used to prepare the groundwater elevation contours presented on Figures 5 through 9.

The groundwater elevations and flow directions indicate the following:

- Within the DDA, the elevations and flow directions reflect consistent, ongoing LFExS operation (see Figure 5). As expected, groundwater flow within the DDA converges toward the operating LFExS wells.

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[8] See footnote 1.
[9] Mass remaining estimates were updated as part of the SSC Rev 2 (Golder, 2016a).
[10] Water levels were measured before commencement of sampling.

- In the UPCUTZ between the DDA and pumping well PW-1(U) (see Figure 6), groundwater flow is from north-northwest to south-southeast toward well PW-1(U).
- In the upper sand of the UPA between the DDA and pumping well PW-1(U) (see Figure 7), groundwater flow is from north-northwest to south-southeast toward pumping well PW-1(U).
- In the upper and lower sand of the UPA downgradient of well PW-1(U) (see Figures 8 and 9, respectively), groundwater flow is generally from north to south consistent with operation of the downgradient AWC wellfield.

3.2 Sampling and Analysis

3.2.1 Well Purging

All wells that required use of a submersible pump were purged using the low-flow purging and sampling procedure[11]. The monitoring wells were purged using a decontaminated 2-inch diameter submersible pump (Grundfos® Rediflo2) and Teflon®-lined tubing[12] that was dedicated to each well. Wells were purged at a rate of approximately 200 to 500 milliliters per minute. Frequent monitoring of the water level and adjustments to the flow (when necessary) minimized the drawdown during purging. A minimum of three feet of water was maintained over the pump intake to avoid entrainment of air in the pump. Pumping rate adjustments, if any, and depth(s) to water measurements were recorded on sample collection forms. Water removed during purging was collected in five-gallon buckets and disposed in the on-Site wastewater holding tank at the existing treatment building.

During purging, field parameters were monitored in-line with a Horiba U-22® water quality instrument. A flow-through cell device was used to minimize sample exposure to the atmosphere. Measurements were collected approximately every five minutes until the parameters stabilized based on three consecutive readings within the following ranges:

- Temperature: +/- 10%
- pH: +/- 0.1 Standard Units
- Conductivity: +/- 3%
- Oxidation/Reduction Potential (ORP): +/- 10 millivolts (mV)
- Dissolved Oxygen (DO): +/- 10% (or +/- 0.1 milligrams per liter (mg/L) if less than 1.0 mg/L)

[11] The procedure is based upon the USEPA Region II document entitled "Groundwater Sampling Procedure, Low Stress (Low Flow) Purging and Sampling" dated March 20, 1998.

[12] Teflon®-lined tubing and bailers are used for purging and sampling at the Site except during monitoring events which include sampling and analysis for PFAS.

- Turbidity: +/- 10% (or three consecutive readings below 50 nephelometric turbidity units (NTUs))

Table 3 summarizes the stabilized field parameter measurements (temperature, pH, specific conductance, turbidity, DO, and ORP) for the monitoring wells.

Minor deviations from the planned sampling and analysis procedures are described below. These deviations do not affect the quality of data collected and are consistent with conventional practices:

- Monitoring wells DGC-7C, PZ-6N and PZ-6S were purged and sampled using certified-clean disposable bailer[13] because these locations go dry during purging.
- Monitoring well location MW-18 was purged and sampled using a peristaltic pump because well MW-18 is a 1-inch diameter well.
- Extraction wells BG-1, B-4DR, C-2D, C-4D, C-18D, C-19D, C-20D, C-30 and PW-1(U) pump almost continuously. Prior to field parameter measurement and sample collection, the port at each well was purged of approximately 19 liters of water with the exception of B-4DR which was purged of approximately 5 liters due to its limited flow rate.
- Extraction wells AWC-7 and AWC-G3R were not sampled by Golder as AWC has denied access to these wells, but instead has commenced sampling and analysis for a limited list of VOCs, SVOCs, and manganese themselves, and has been providing the data to the Trust.
- Extraction well AWC-K1 is no longer operating and the pump and piping have been removed; therefore, a submersible pump and tubing were lowered down the well to collect a sample using low-flow purging and sampling procedures as described above.

3.2.2 Sample Collection

TestAmerica of Edison, New Jersey supplied certified-clean sample bottles, blank bottle labels, custody seals, analyte-free water, coolers, and chain-of-custody documents for the monitoring event. The bottles were labeled prior to sample collection using a permanent-marking pen. Once purging was completed, the discharge tubing was disconnected from the flow-through cell and samples were collected directly from the end of the discharge tubing. Bottles were filled by allowing the pump discharge to flow gently down the inside of the bottle with minimal agitation. Extraction wells BG-1, C-2D, C-18D, C-19D, C-20D, C-30 and PW-1(U) were sampled by filling bottles directly from the sampling ports. Due to operational issues at the time of the monitoring event, extraction wells B-4DR and C-4D were purged and sampled via low-flow procedures. Monitoring locations DGC-7C, PZ-6N, and PZ-6S were sampled using certified-clean disposable bailers. Well MW-18 was sampled using a peristaltic pump.

Each bottle was capped after it was filled. Samples for VOCs were collected first, taking steps to eliminate headspace in the vials. All samples were preserved according to method-specific requirements and were

[13] Teflon®-lined tubing and bailers are used for purging and sampling at the Site except during monitoring events which include sampling and analysis for PFAS.

carefully packed into standard sample coolers with ice at approximately four degrees Celsius. All samples were shipped under chain-of-custody procedures via an overnight courier to TestAmerica for analysis.

In addition to the primary samples, the following quality assurance/quality control (QA/QC) samples were collected during the September-October 2017 monitoring event:

- Twelve trip blanks were sent along with the VOC samples collected
- Four field equipment rinsate blanks from decontaminated submersible pumps
- Field duplicate parameter sets from three wells (DGC-11S, UPA-02D, and C-22S)
- Triple volumes from two wells (DGC-11D, and P-6(UPA)) for the analysis of matrix spike/matrix spike duplicates (MS/MSD)

Tables 1 and 2 in Appendix A list the types and number of samples collected for analysis and the parameters analyzed for the September-October 2017 monitoring event. The laboratory result forms for the validated sample data are included in Appendix A.

3.2.3 Analyses

Table 3 lists the wells sampled during the September-October 2017 monitoring event, and provides a summary of field parameters measured. Samples collected from these wells were analyzed for the parameters indicated on Table 1, which include VOCs with low-level 1,4-dioxane as needed, SVOCs with low-level BCEE as needed, dissolved iron, dissolved manganese and total Target Analyte List (TAL)[14] metals. Well PW-1(U) and the LFExS effluent (NCC sewer discharge monitoring points) were also analyzed for discharge permit parameters (total metals including arsenic, cadmium, chromium, copper, lead, molybdenum, nickel, selenium, zinc, and mercury, and general chemistry parameters including ammonia, total cyanide, biochemical oxygen demand, and total suspended solids).

The wells sampled during the bimonthly monitoring events were analyzed for dissolved iron and dissolved manganese.

3.3 Data Quality Assessment

TestAmerica logged the samples into their laboratory information management systems (LIMS) upon receipt, and scheduled the samples for preparation and analysis. Golder performed validation on all the data following guidelines provided by USEPA Region III Innovative Approaches for Validation of Organic and Inorganic Data – Standard Operating Procedures (USEPA, 1995), as applicable to the analytical methods as listed in Appendix A. Additional information regarding sample analysis and validation, including the Data Quality Assessment (DQA), can be found in Appendix A.

[14] TAL metals include aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, vanadium, and zinc.

Based on the data validations and DQA, the analytical data (including estimated data) for samples collected at the Site were determined to be acceptable for their intended use. Acceptable levels of accuracy and precision, based on laboratory control samples (LCS), MS/MSD, field duplicate and surrogate recoveries, were achieved for the data. In addition, the data completeness (i.e., the ratios of the amount of valid data obtained to the amount expected, including estimated data) was 100 percent for the September-October 2017 monitoring event. The data qualifier summaries are presented in Appendix A Table 2.

3.4 Analytical Results

The detected compounds and their respective concentrations for the groundwater samples collected during the September-October 2017 monitoring event are summarized and compared to groundwater standards and screening levels including maximum contaminant levels (MCLs), ss-PRGs and the May 2014[15] regional screening levels (RSLs) for tapwater in Appendix B-1. The bimonthly results are summarized and compared to the same standards in Appendix B-3.

A summary of the analytical results relative to ss-PRGs and MCLs is provided below, and a discussion of the trends is provided in Sections 4.1.4 and 4.2.3. Appendix B provides details of the analytical results and comparison of detections to ss-PRGs, MCLs, and RSLs.

3.4.1 DDA Extraction Wells

Golder collected groundwater samples from the eight DDA extraction wells during the September-October 2017 monitoring event. Although the 2017 ss-PRGs and/or MCLs are not applicable for the groundwater within the DDA, the 2017 ss-PRGs and/or MCLs are used as a basis for comparison and to provide context in the absence of applicable standards/goals. The following compounds were detected in DDA extraction wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,2,4-Trimethylbenzene (1,2,4-TMB); 1,3,5-Trimethylbenzene (1,3,5-TMB); 1,2-DCA; Chlorobenzene; cis-1,2-Dichloroethene (cis-1,2-DCE); 1,4-Dioxane[16]; Benzene; Ethylbenzene; Toluene; Vinyl Chloride; and Xylenes, Total
- SVOCs – BCEE and Naphthalene
- Dissolved Metals – Iron and Manganese

Isoconcentration maps for BCEE and 1,4-dioxane (considered the primary COCs at the Site) in the DDA groundwater are included in Appendix C as Figures C-1 and C-2, respectively.

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[15] The May 2014 RSLs for tapwater were used in development of the 2014 ss-PRGs for the UPA groundwater, and the 2014 RSLs have been used for data comparison in the semi-annual report since that time. In October 2017, revised ss-PRGs were developed for the Site (2017 ss-PRGs). For the next monitoring period (January to June 2018) and subsequent monitoring reports, the June 2017 RSLs will be used for comparison.

[16] As noted in Section 2.2, 1,4-dioxane is considered an SVOC due to its fate and transport properties and is handled as such within the context of the CSM. However, since it is analyzed via a VOC analytical method, the 1,4-dioxane results are presented in Sections 3.4 and 4, and Appendix B grouped with the other VOC analytes.

3.4.2 DDA Monitoring Wells

Golder collected groundwater samples from a total of 14 DDA monitoring wells, including piezometers PZ-4-INT-R, PZ-6N, PZ-6S, and PZ-11-EXT during the September-October 2017 monitoring event. The following compounds were detected in DDA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,2,4-TMB; 1,3,5-TMB; 1,2-DCA; 1,4-Dioxane; Benzene; Chlorobenzene; Cis-1,2-DCE; Ethylbenzene; Tetrachloroethene; Toluene; Trichloroethene; Vinyl Chloride; and Xylenes, Total
- SVOCs – BCEE and Naphthalene
- Dissolved Metals – Iron and Manganese

Isoconcentration maps for BCEE and 1,4-dioxane in the DDA groundwater are included in Appendix C as Figures C-1 and C-2, respectively.

3.4.3 PW-1(U) Monitoring Wells

Golder collected groundwater samples from a total of 12 monitoring wells (3 wells screened in the UPCUTZ and 9 wells screened in the UPA) associated with monitoring the performance of pumping well PW-1(U) during the September-October 2017 monitoring event. The following sections summarize the PW-1(U) monitoring wells screened in these units.

3.4.3.1 PW-1(U) UPCUTZ Wells

The following compounds were detected in PW-1(U) UPCUTZ monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs - 1,2,4-TMB; 1,3,5-TMB, 1,4-Dioxane; Benzene; Ethylbenzene; and Xylenes Total
- SVOCs - BCEE and Naphthalene
- Dissolved Metals – Iron and Manganese

3.4.3.2 PW-1(U) Upper Sand Wells

The following compounds were detected in PW-1(U) UPA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,2,4-TMB; 1,3,5-TMB; 1,4-Dioxane; Benzene; Ethylbenzene; and Xylenes, Total
- SVOCs – BCEE and Naphthalene
- Dissolved Metals – Iron and Manganese

Isoconcentration maps for BCEE and 1,4-dioxane in the UPA groundwater are included in Appendix C as Figures C-3 and C-4, respectively.

3.4.4 Downgradient UPA Wells – DS&G Site

Golder collected groundwater samples from 13 DS&G UPA monitoring wells located downgradient of pumping well PW-1(U) and from one AWC well (AWC-K1) during the September-October 2017 monitoring event. The following compounds were detected in downgradient UPA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,4-Dioxane; Benzene; and Ethylbenzene
- SVOCs – BCEE
- Dissolved Metals – Iron and Manganese

Golder collected groundwater samples bimonthly from four DS&G UPA monitoring wells (MW-26N, UPA-03D, AWC-E1 and AWC-E2) located immediately upgradient of well AWC-G3R in June, September and December 2017 for analysis of dissolved iron and manganese. Both compounds were detected in these UPA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B-3 for details).

3.4.5 NCC UPA Monitoring Wells and P-6 Vicinity

Golder collected groundwater samples from UPA wells associated with the ACL monitoring program and located downgradient of pumping well PW-1(U) during the September-October 2017 monitoring event. The following compounds were detected in these monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs - 1,2,4-TMB; 1,4-Dioxane; Benzene; and Xylenes, Total
- SVOCs – BCEE
- Dissolved Metals – Iron and Manganese

4.0 LFExS AND PW-1(U) EXTRACTION SYSTEMS

The following section presents a summary of operation and maintenance activities, contaminant concentration trends, mass removal rates and other lines of evidence to support performance evaluations and recommended operational modifications for the LFExS and well PW-1(U) extraction system.

4.1 LFExS

The LFExS currently has eight operational extraction wells (wells C-2D, C-19D, C-18D, BG-1, C-4D, B-4DR, C-30 and C-20D) that provide hydraulic containment within the DDA by inducing inward and upward gradients between the UPA and the Columbia Aquifer and remove VOC and BCEE contaminant mass from the DDA groundwater. Between the months of July 2017 and December 2017, the system operated at a monthly average extraction rate between 8.79 and 10.89 gpm. Monthly and semi-annual average extraction rates for the LFExS from startup (2009) through December 2017 are presented on Appendix D, and are graphically represented on Figure 10. As shown on Figure 10, the Trust's focus on routine preventative maintenance activities and startup of Redux addition (see discussion in Section 5.2.4 of the SSC Rev 2) have improved the LFExS performance and increased the monthly average extraction rate. The monthly average extraction rates are reviewed on a semi-annual basis to assess system operation, evaluate options for maintaining an average monthly extraction rate between 8 and 10 gpm, and optimize system operation.

4.1.1 Operation and Maintenance

Operation and maintenance activities for the LFExS were conducted between July 2017 and December 2017. The following presents these items, as stated in the Trust's Quarterly OM&M Reports:

- Third quarter 2017 activities:
  - August 22 through 24 - Groundwater Treatment and Technology (GWTT) was on site to complete the third quarter maintenance. Third quarter maintenance consisted of:
    - Removed, cleaned, and reinstalled all eight well pumps. When the well pumps were removed, the drop tubing was inspected and cleaned as necessary. All of the pumps were clean and in good condition.
    - Cleaned inside piping from tank to the floor penetration including the globe valve, check pump for buildup, and check the influent and effluent flow meters. The air relief valve was disassembled and cleaned.
    - Removed, inspected, cleaned and reinstalled six flowmeters and check valves in the shed manifold and one flowmeter outside for well C-20D. Replaced flowmeter internals for C-4D.
    - Visually inspected and cleaned hoses and piping in shed manifold. The hoses for wells C-19D, C-30 and C4D were replaced due to leaking connections.
    - Removed, inspected, cleaned and reinstalled tank float switches, and confirmed function and alarm activation.
    - Assisted with calibration of the LEL sensors.
  - July 26 and September 14 – Started new drums of Redux on LFExS discharge.

- August 2 – GWTT cleaned the discharge air relief valve, checked on the pump for well C-4D, and repaired the sump pump floats.

- Fourth Quarter 2017 activities:
  - December 6 and 7 - GWTT was on site to complete the fourth quarter maintenance. Fourth quarter maintenance consisted of:
    - Removed, cleaned, and reinstalled four well pumps (C30, C18D, C4D and C19D). When the well pumps were removed, the drop tubing was inspected and cleaned as necessary.
    - Cleaned inside piping from tank to the floor penetration including the gate valve, checked pump for buildup, and checked the influent and effluent flow meters. Air relief valve was disassembled and cleaned.
    - Jetted/vacuumed discharge pipe to NCC sewer and the line from the field into the building (Rosey's Septic Service).
    - Dis-assembled and inspected the discharge check and globe valves in the shed. Some build up noted, but build up not restrictive.
    - Replaced pump and motor in well C4D; snaked discharge line from well C4D to loosen any blockage. Water was able to flow through the line (fed water from shed to well without restriction).
    - Inspected and checked function of heat tracing in shed and on well C20D.
    - Assisted with the LEL sensors calibration.

4.1.2 Discharge Monitoring

The effluent from the LFExS discharges directly to the NCC sewer system. In accordance with the NCC discharge permit, effluent samples are collected semi-annually and analyzed for VOCs, SVOCs, metals and total toxic organics (TTO). During the period covered by this report, one set of effluent samples was collected for VOCs, SVOCs, metals, TTO, and natural attenuation parameters (NAPs). The analytical results are submitted annually by the Trust to the NCC Department of Special Services – Engineering & Environmental Services Division in conformance with the discharge permit. An evaluation of mass loading to the NCC sewer system for the DS&G Site is presented in Section 4.5.

4.1.3 Performance Evaluations

As documented in Golder's April 24, 2009 letter to the USEPA, the general strategy for achieving effective, consistent operation of the LFExS requires balancing the extraction rates from the extraction wells to comply with the current wastewater discharge permit, including flow and contaminant limits, as well as providing an additional degree of hydraulic control near the DDA slurry wall using well C-2D. The following sections present an evaluation of the LFExS system for the period between July 2017 and December 2017.

4.1.3.1 Groundwater Contours

Figure 5 presents the contours for the groundwater elevation measurements observed within the DDA during the September-October 2017 monitoring event. This figure includes a blue-hatched area to indicate the approximate extent of LFExS-induced upward (vertical) gradients, based on a comparison of groundwater elevations above the UPCU within the DDA containment area versus below the UPCU (i.e.,

within the UPA upper sand beneath the DDA). As demonstrated by Figure 5, the extent of LFExS-induced upward (vertical) gradients includes a significant portion of the containment area of the DDA, particularly the portions of the containment area with elevated BCEE detections (Figure C-1).

4.1.3.2 Groundwater Gradient Evaluation

Appendix E presents trend plots of hydraulic head differences for groundwater elevations observed at wells and piezometers in the vicinity of the DDA. Golder calculated head differences instead of gradients because the slurry wall and confining clay (UPCU) represent hydraulic barriers, and gradients will vary depending on the location of the observation point relative to the hydraulic barrier. For example, the horizontal head difference across the slurry wall at the PZ-5 and PZ-11 piezometer pairs is similar, but the distance between the interior and the exterior wells is approximately two times farther for piezometer pair PZ-11 compared to piezometer pair PZ-5, so a calculated gradient would be two times lower for piezometer pair PZ-11.

4.1.3.2.1 Vertical Gradients

Vertical head differences are illustrated on the trend plots included in Figures E-1 through E-10 in Appendix E. For previous semi-annual monitoring reports, Golder calculated vertical head differences for DDA extraction wells BG-1, C-18D and C-20D and DDA monitoring wells B-2D, C 1D, C-3D, and C-6. To support the performance evaluation presented in the Final FS Rev 1 (Golder, 2016b), Golder also calculated vertical head differences for three additional DDA monitoring wells: B-3D, MHW-1M, and C-16.

In the previous semi-annual monitoring report submittals, the vertical head differences were calculated relative to UPA monitoring well MHW-1D, since well MHW-1D was the only UPA well screened beneath the DDA prior to September 2012. These calculated head differences were biased low because well MHW-1D is located downgradient (in the UPA) of many of the Columbia monitoring wells used for the vertical head difference calculations. For example, well MHW-1D is located in the UPA upper sand approximately 97 feet downgradient of the location of Columbia well B-2D; therefore, the UPA groundwater elevation at well MHW-1D is approximately 0.5 feet lower than the UPA upper sand groundwater elevation beneath well B-2D. Therefore, using the lower groundwater elevation at well MHW-1D results in a calculated vertical head difference at well B-2D that is lower than the actual vertical head difference at well B-2D. To give a more accurate representation of actual head differences, Golder re-calculated head differences using more proximal UPCUTZ and UPA upper sand wells installed and screened beneath the DDA between September and December 2012. Continuing the example above, well B-2D vertical head differences were re-calculated relative to UPCUTZ well DDA-08-TZ and UPA well DDA-08-US. Trend plots

using these re-calculated vertical head differences are presented in Appendix E along with the original head differences calculated relative to well MHW-1D[17].

The positive vertical head differences observed since initiation of LFExS extraction in May 2009 indicate that the LFExS generally induces an upward (vertical) gradient across the most impacted portions of the DDA containment area. These areas are coincident with the DDA extraction well locations. Lesser vertical head differences (near zero) were observed during groundwater gauging events that occurred during or shortly after LFExS shutdown for maintenance, such as the March 5, 2012 shutdown for the well B-4DR connection (see Appendix E). The reduced vertical head differences on the figures included in Appendix E are generally associated with water level monitoring events conducted: (1) during brief well, pump or system performance declines between quarterly maintenance events due to iron fouling, and/or (2) before, during or soon after routine, quarterly maintenance of the LFExS; therefore, they are not fully representative of the long-term vertical head differences between the Columbia Aquifer within the DDA and the UPA upper sand associated with the LFExS operation.

An exception to these observations is the neutral or slightly negative vertical head differences that have been calculated for DDA monitoring wells C-6 (see Figure E-7) and C-16 (see Figure E-10). The fluctuating vertical head differences calculated for well C-6 since 2011 are related to performance/operational issues associated with extraction well B-4DR, and indicate that well C-6 is at the eastern periphery of the extraction well B-4DR and LFExS influence. Well C-6 is located in a portion of the containment area where thick UPCU is present and VOC and SVOC concentrations are low (e.g., BCEE was detected at 0.021 micrograms per liter [ug/l] in 2008, prior to LFExS startup). While head differences in the area of monitoring well C-6 are evaluated, well C-6 is outside of the target capture zone defined by BCEE and VOC impacts; therefore, the neutral or slightly negative vertical head differences at well C-6 do not represent a gap in containment. In addition, the DDA-15-US/DDA-15-TZ well pair is located in the UPA slightly downgradient of the Columbia well C-6 location, which would bias-low the calculated head differences at this location. The negative head difference observed at well C-16 in September 2015 is considered anomalous, because nearby extraction well C-30 was operating during the period of water level monitoring, which would a promote a positive gradient at well C-16.

4.1.3.2.2 Horizontal Gradients

Horizontal head differences are illustrated on the trend plots included in Appendix E Figures E-11 through E-15. Golder calculates horizontal head differences for DDA piezometer pairs PZ-2, PZ-5, PZ-6, PZ-11 and PZ-12[18]. For the purposes of this analysis, the groundwater elevation for the interior piezometer is subtracted from the exterior piezometer; therefore, a positive horizontal head difference represents an

[17] Head differences for wells C-20D and MHW-1M are presented relative to UPA well MHW-1D because it is the nearest UPA well.
[18] Golder calculated horizontal head differences for piezometer pair PZ-1 until April 2012 when it was determined that the exterior piezometer PZ-1-EXT is likely influenced by perched conditions.

inward hydraulic gradient (i.e., the Columbia Aquifer groundwater elevation outside the slurry wall is higher than inside the slurry wall). The positive horizontal head differences observed since initiation of LFExS extraction in May 2009 suggest that the LFExS induces an inward (horizontal) gradient within the Columbia Aquifer in the vicinity of the wells located along the northeastern, southeastern and southwestern slurry walls of the DDA containment area, and across the slurry wall between the northwestern DDA partition and containment areas. The reduced horizontal head differences on the figures included in Appendix E are generally associated with water level monitoring events conducted: (1) during brief well, pump or system performance declines between quarterly maintenance events due to iron fouling, and/or (2) before, during or soon after routine, quarterly maintenance of the LFExS; therefore, they are not fully representative of the long-term horizontal head differences across the slurry walls associated with the LFExS operation.

4.1.3.2.3 Conclusion

An evaluation of the vertical and horizontal head differences presented in Appendix E demonstrates that since October 2012, the LFExS has induced:

- Inward (horizontal) gradients (from the Columbia Aquifer outside the DDA slurry walls to the Columbia Aquifer inside the DDA slurry walls).
- Upward (vertical) gradients (from the UPA upper sand into the DDA [Columbia Aquifer]) across the impacted portions of the DDA containment area.

The LFExS provides hydraulic control for the DDA by achieving inward (horizontal) head differences for the entire containment area and upward (vertical) head differences for the most impacted portions of the DDA containment area, except during brief periods of system maintenance. The Trust has implemented many measures to maintain consistent operation and improve the reliability of the system, as described in Section 2.1.4 of the Final FS Rev 1 (Golder, 2016b). The enhanced or modified LFExS, in combination with an impermeable cap over the DDA and groundwater extraction from the UPCUTZ and UPA as proposed in the Final FS Rev 1 (Golder, 2016b), will improve the overall reliability of the LFExS.

4.1.4 Contaminant Concentration Trends

To evaluate changes in groundwater quality within the DDA associated with operation of the LFExS, Golder prepared trend plots of groundwater analytical data for BCEE, 1,4-dioxane, benzene, iron, and manganese. The trend plots prepared for DDA (LFExS) extraction wells and DDA (LFExS) monitoring wells are presented in Appendix F.

BCEE, 1,4-dioxane, benzene, iron, and manganese were chosen for inclusion on the trend plots because they are considered as the primary risk drivers at the Site, and they are detected in the DDA groundwater as well as in groundwater within the proposed AoA. There may be additional contaminants that exceed applicable standards in various Site wells or located downgradient of the Site, but these contaminants were not included on the trend plots because they are not the primary COCs and/or they are not detected Site-

wide. Trend observations for 1,4-dioxane are limited to the period from 2012 to present as 1,4-dioxane was added to the sampling program as an analytical parameter in 2012.

4.1.4.1 DDA Extraction Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, and manganese for the LFExS extraction wells are presented in Figures F-1A through F-1E of Appendix F. The LFExS extraction well trend plots for BCEE and benzene indicate that concentrations generally decreased following initiation of LFExS extraction in 2009 and have been generally stable between LFExS startup and the September-October 2017 monitoring event, with the exception of the following:

- Well C-4D which shows an increase in BCEE since April 2016
- Well C-20D and C-2D which show an increase in BCEE in October 2017
- 1,4-Dioxane, iron and manganese show no discernible trends

4.1.4.2 LFExS and DDA Monitoring Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, and manganese for the LFExS monitoring wells are presented in Figures F-2A through F-2E of Appendix F and for the DDA monitoring wells in Figures F-3A through F-3E of Appendix F. The LFExS and DDA monitoring well trend plots for BCEE and benzene indicate generally decreasing and/or stable concentrations in many wells when compared to concentrations prior to LFExS startup in May 2009 although some wells appear to have no discernible trends, with the exception of the following:

- BCEE trend plot for well MHW-1S shows overall increasing trends since October 2012, likely due to the initiation of extraction from well C-20D
- BCEE trend plot for B-3D shows an increase in October 2017
- Benzene trend plot for well PZ-6S shows a generally increasing trend since July 2009, likely due to the initiation of extraction from well C-18D
- Iron trend plots for wells B-2D and PZ-11-EXT show generally increasing trends since October 2012
- Manganese trend plot for wells MHW-1S shows a generally increasing trends since October 2010

The concentrations in these wells will continue to be monitored in subsequent events and the trends will continue to be evaluated semi-annually.

4.2 PW-1(U) Extraction System

4.2.1 Operation and Maintenance

On October 15, 2012, the Trust assumed hands-on responsibility for the operation and maintenance of extraction well PW-1(U) from NCC. The well PW-1(U) system discharges directly to the NCC sanitary sewer system (POTW). The NCC sewer discharge permit was modified to include the discharge from both the LFExS and pumping well PW-1(U) with the total combined flow now permitted at 51 gpm.

On October 3, 2013, the Trust began addition of Redux 620 to reduce iron fouling in the well. Since beginning Redux 620 addition to well PW-1(U), maintenance requirements for this well have decreased significantly due to the decreased iron fouling, and more consistent extraction rates (i.e., average monthly extraction rates generally between 32 and 37 gpm) have been maintained. Extraction rates for well PW-1(U) from December 2011 through December 2017 are presented in Appendix D, and graphically represented on Figure 11. As shown on Figures 11 and 14, the Trust's focus on routine preventative maintenance activities and startup of Redux addition have improved the well PW-1(U) performance and increased the monthly average extraction rate. However, due to the decline in the average extraction rate since summer 2017, the Trust will be performing a chemical swabbing of well PW-1(U) in March 2018.

4.2.2 Performance Evaluation

The operational effectiveness of pumping well PW-1(U) was evaluated as part of the Performance Evaluation (Golder, 2012) and further evaluated in the SSC Rev 2 submitted in January 2016. As presented in the SSC Rev 2 Report, groundwater data (water quality and potentiometric data) indicate that pumping well PW-1(U) captures some contaminant mass within the UPA upper sand and contaminant mass migrating from the UPCUTZ groundwater to the UPA upper sand groundwater to the north and northwest of well PW-1(U). Based on the potentiometric surface and results of the Spring 2013 aquifer testing, the areas to the east and northeast of well PW-1(U) (eastern edge of the groundwater emanating from beneath the DDA), and to the west in the area of well DDA-16-US, appear to be outside the capture zone for well PW-1(U). Results of the numerical groundwater flow modeling in the DDA area (see Appendix B of the DAA) generally support these observations. More specifically, the results of the groundwater flow model indicate the following:

- Particles released near the DDA since shutdown of the NCC system in 2004 have been generally captured by well PW-1(U) operation[19] (see Appendix D of the Final FS Rev 1 which includes Slides 18 to 21 from Attachment 1 of Appendix B of the DAA)
- The capture zone for well PW-1(U) at a simulated extraction rate of 40 gpm encompasses more than the entire width of the DDA (see Appendix D of the Final FS Rev 1 which includes Slide 28 from Attachment 1 of Appendix B of the DAA)

4.2.3 Contaminant Concentration Trends

To evaluate changes in groundwater quality associated with the DDA and operation of the LFExS and well PW-1(U), Golder prepared trend plots of groundwater analytical data for BCEE, 1,4-dioxane and benzene, iron, and manganese. The trend plots and discussion[20] of the contaminant concentration trends focus on the groundwater between the DDA and pumping well PW-1(U), and the UPA groundwater downgradient of

[19] The particle capture in the groundwater model was simulated with well PW-1(U) operating at 40 gpm to approximate current conditions. Based on the operational history of well PW-1(U), NCC generally operated the well at less than 30 gpm between 2005 and 2012. Figure 14 of the Semi-Annual Monitoring Report illustrates the well PW-1(U) extraction rates and changes over time.

[20] Trend observations for 1,4-dioxane are limited to the period from 2012 to present as 1,4-dioxane was added to the sampling program as an analytical parameter in 2012.

well PW-1(U) to the AWC wells (AWC-7 and AWC-K1). The trend plots were prepared for: UPCUTZ monitoring wells located between the DDA and well PW-1(U) (see Figures E-4A through E-4E); pumping well PW-1(U) with associated PW-1(U) monitoring wells in the UPCUTZ and UPA (see Figures E-5A through E-5E); and downgradient UPA wells (see Figures E-6A through E-6E, E-7A through E-7E, E-8A through E-8E, E-9A through E-9E, and E-10A through E-10E).

The rationale for the choice of these constituents is presented in Section 4.1.4. There may be additional contaminants that exceed applicable standards in various wells associated with the Site or located downgradient of the Site, but these contaminants were not included on the trend plots because they are not the primary COCs associated with the Site and/or they are not detected Site-wide.

The following sections discuss the concentration trends observed in the PW-1(U) performance monitoring wells and the downgradient UPA monitoring wells.

4.2.3.1 PW-1(U) Performance Monitoring Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, and manganese for PW-1(U) performance monitoring wells are presented in Figures F-4A through F-4E of Appendix F for wells screened in the UPCUTZ and in Figures F-5A through F-5E of Appendix F for wells screened in the UPA. The concentrations shown in the PW-1(U) performance monitoring well trend plots for which long-term data exists (wells DGC-2S and DGC-7S) generally indicate an initial decreasing trend after the startup of pumping well PW-1(U) in October 2004, followed by a relatively stable trend. Monitoring wells located between the DDA and pumping well PW-1(U) installed after well PW-1(U) startup (i.e., DDA-01 and DDA-03 installed in 2008 and the DAA-series wells installed in 2012) indicate relatively stable trends. Exceptions to this include:

- UPCUTZ wells DDA-07-TZ (manganese), DDA-12-TZ (BCEE and benzene) and DDA-16-TZ (iron) for which the data set begins in 2012 and concentration trends appear to be fluctuating or increasing
- UPA wells DDA-10-US (manganese) and DDA-12-US (BCEE) for which the data set begins in 2012 and recent concentration trends appear to be fluctuating or increasing

The concentrations in these wells will continue to be monitored and the trends will continue to be evaluated on a semi-annual basis.

4.2.3.2 Downgradient UPA Monitoring Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, and manganese for select UPA monitoring wells downgradient of well PW-1(U) are presented in Figures F-6A through F-6E, F-7A through F-7E, F-8A

through F-8E, F-9A through F-9E, and F-10A through F-10E[21] of Appendix F. These trend plots indicate that concentrations in these wells were relatively stable or decreasing with the exception of the following:

- New maximum 1,4-dioxane concentration[22] in well MW-28[23] located along the eastern lobe of the ACL[24].
- Increasing or relatively stable trends in BCEE, 1,4-dioxane, benzene, iron, and manganese have been observed in wells P-6, RT-1-UP, UPA-01, and MW-26N since shutdown of wells AWC-G3 and AWC-K1 in early 2012.
- Well P-6 exhibited increasing BCEE and benzene concentrations between October 2004 and October 2007 following shutdown of the NCC extraction system. Since April 2012, the COC concentrations in well P-6 have demonstrated a stable or decreasing trend.
- In April 2015, 1,4-dioxane, iron, and manganese increased in well MW-34 relative to concentrations observed since 2012. In October 2015 and April 2016, 1,4-dioxane, iron, and manganese decreased from the concentrations detected in April 2015 in well MW-34; however, concentrations for iron and manganese remain above concentrations observed since 2012. The manganese concentration in well BW-1 has been increasing since April 2015 as well.
- Decreasing trends in iron and increasing trends in manganese have been observed at well UPA-02D since shutdown of wells AWC-G3 and AWC-K1 in early 2012. Trends for these compounds in well UPA-02D have been generally stable since re-start of AWC-G3R in October 2014.
- Decreasing trends in BCEE, 1,4-dioxane, benzene and iron have been observed at well UPA-03D since shutdown of wells AWC-G3 and AWC-K1 in early 2012.
- Well AWC-G3 exhibited increasing BCEE concentrations between October 2004 and late 2014 following shutdown of the NCC extraction system, and increasing 1,4-dioxane concentrations between April 2012 and late 2014. Since late 2014, concentrations of BCEE and 1,4-dioxane have decreased in well AWC-G3R.
- Well AWC-7 has exhibited increasing BCEE and 1,4-dioxane trends since shutdown of wells AWC-G3 and AWC-K1 in early 2012, although the April 2015 through April 2017 concentrations (based on data for wells AWC-7 and AWC-G3 provided by AWC) are below the values reported for February and March 2015.
- Concentration trends for benzene, iron or other parameters in AWC production wells since April 2014 have not been evaluated as AWC has denied access to these wells, but AWC

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[21] AWC production wells have not been sampled by Golder since March 2014 as AWC has denied access to these wells, but has commenced sampling and analysis for a limited list of VOCs and SVOCs themselves, and has been providing the data to DS&G. Data provided by AWC for BCEE and 1,4-dioxane have been incorporated into the trend plots included as Figures E-10A through E-10C.

[22] The data for this monitoring event were validated and no issues with this new maximum concentration were identified. The field information forms for this event were reviewed and compared to historical forms, and no deviations from protocols used during previous monitoring events were identified.

[23] Well MW-28 has a long screen interval and is screened across the upper and lower sand of the UPA. Golder purges and samples well MW-28 from the shallow portion of the screen interval consistent with the UPA upper sand.

[24] The groundwater elevation measured in well MW-28 during this monitoring event was the lowest groundwater elevation recorded for this well by Golder since sampling and analysis for 1,4-dioxane was initiated at the Site in 2012. This new maximum concentration (120 ug/l) is consistent with the concentration detected during this event and previous events in downgradient well BW-2 (the 1,4-dioxane concentration in well BW-2 was also 120 ug/l in October 2017). The previous 1,4-dioxane maximum concentration in well BW-2 was about 4 ug/l. While the monitoring network is relatively sparse in this area, the particle tracking analysis performed in 2015 by TetraTech indicates the migration pathway for 1,4-dioxane impacts to the well BW-2 area passes from beneath the eastern lobe of ACL to the east of the well MW-28 area and down to the area of well BW-2. The 1,4-dioxane concentration in this well will continue to be monitored.

has commenced sampling and analysis for a limited list of VOCs and SVOCs and more recently manganese themselves, and has been providing the data to the Trust.

The concentrations in these wells will continue to be monitored and the trends will continue to be evaluated on a semi-annual basis.

4.3 LFExS Mass Removal Estimate

The FSWP Rev 2 SAP indicated that future reports would include estimates of the contaminant mass removed by the LFExS based on calculation of mass extracted by the LFExS and comparison of previous to current remaining mass estimates. In the June 2, 2010 DDA LFExS Memo (Golder, 2010), Golder estimated the mass of VOCs and BCEE removed for the period from system startup in May 2009 to April 2010. This mass estimate was calculated based on the volume of water discharged by the LFExS multiplied by the detected concentrations in the LFExS effluent samples. This method has been used to evaluate each six-month period since that time. As shown on Table 4, Golder estimated that the LFExS removed approximately 4.7 pounds (lbs) of VOCs (does not include 1,4-dioxane) and 0.43 lbs of BCEE between May 1, 2017 and October 31, 2017. The effluent analytical results are provided in Appendix G. Since system startup, it is estimated that the LFExS has removed between approximately 2.6 and 13 lbs per year of VOCs (does not include 1,4-dioxane) and between approximately 0.2 and 1.8 lbs per year of BCEE.

Figure 12 shows the changes over time in the LFExS mass removal based on the effluent analytical results. This figure shows that mass removal rates for VOCs increased to 13 lbs per year at the end of 2011, and have since remained below 10 lbs per year. The figure also shows that mass removal rates for BCEE have generally increased since the middle of 2012 and have generally remained between 0.5 and 1 lb per year since that time.

To evaluate the relative contribution of the individual extraction wells to the overall system mass removal rate, Golder estimated the mass removal for individual extraction wells by multiplying the extraction rates for those wells by the concentrations detected in those wells for six-month periods since system start-up. Golder estimated this mass contribution for the period between May 1, 2017 and October 31, 2017 for inclusion in this report. Table 5 summarizes the mass removal estimates for the individual wells and Figure 13 shows the changes over time in the mass removal rates for the system. Golder estimates that the LFExS has removed between approximately 12.5 and 34.7[25] lbs/year of VOCs (including between 3.5 and 11 lbs/year of 1,4-dioxane since it was added to the target analyte list in 2012), and between

[25] The 34.7 lbs/year total volatile organic compound (TVOC) mass removal based on the sum of individual extraction wells for the period between November 1, 2014 and April 30, 2015 is above recent values, largely due to an increase in the concentration of toluene in well C-18D.

approximately 0.2 and 3.3 lbs/year of BCEE since startup (Table 5). During this most recent six-month period, the individual well mass removal estimates suggest the following:

- Extraction wells C-18D, C-20D, C-30, and BG-1 accounted for nearly 100% of the VOC mass removal
- Extraction well C-20D accounted for nearly 70% of the BCEE mass removal
- Extraction well C-20D accounted for 75% of the 1,4-dioxane mass removal

Table 5 provides a summary of mass removal estimates for May 2017 to October 2017 based on the LFExS effluent samples and the LFExS individual wells.[26] On a semi-annual basis, Golder reviews the mass removal rates and recommends adjustment of extraction rates as part of the semi-annual monitoring report to improve mass removal of the LFExS system. Recommendations for adjustments of extraction rates are included in Section 4.6.1 of this report.

4.4 PW-1(U) Mass Removal Estimate

As part of the LFExS Memo and the May through December 2010 Semi-Annual Monitoring Report, Golder estimated the mass of VOCs[27] and BCEE removed by extraction well PW-1(U) on a quarterly basis for the period from system startup in November 2004 to December 2010 (see Appendix F of the LFExS Memo and Table 5 of the May-December 2010 Semi-Annual Monitoring Report (Golder, 2011a)). This mass estimate was calculated based on the extraction rate for pumping well PW-1(U) and the concentrations detected in the well PW-1(U) samples. This method has been used to evaluate each six-month period since that time. Using the September-October 2017 analytical data, Golder estimated the mass removal rate based on the same methodology. As shown on Tables 6 and 7, the current pumping well PW-1(U) mass removal rates are approximately 23 lbs per year for VOCs (including approximately 15 lbs per year of 1,4-dioxane) and 1.5 lbs per year for BCEE.

Figure 14 shows the changes over time in the well PW-1(U) mass removal rates in pounds removed per quarter and the average quarterly extraction rate of pumping well PW-1(U). As shown on the figure, the extraction rate of pumping well PW-1(U) increased to almost 40 gpm between October 2013 and April 2014 and ranged from 33 to 34 gpm in 2017.

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[26] As noted above, these results should not be directly compared to one another because the effluent sample estimates are based on 6-month averages and the VOC total concentrations do not include 1,4 dioxane, while the individual well estimates are based on monthly snapshots and the VOC totals include 1,4 dioxane. However, the relative mass removal contributions for individual wells reflected as percentages of total system mass removal are instructive.

[27] Historically, concentrations used in the VOCs calculation only included benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds. Since April 2012, data collected has been based on a revised target analyte list which includes 1,4-dioxane. Table 8 and Figure 12 present both historical BTEX and current TVOCs data.

4.5 POTW Mass Loading Rate

At the request of the USEPA (see recommendations of the Five Year Review report for the DS&G Site dated August 28, 2015), an evaluation of the actual mass loading to the NCC sewer system versus the permitted[28] maximum permissible loading[29] to the NCC sewer system for the LFExS and the well PW-1 system were performed. Appendix Tables G-1 and G-2 summarize the following associated with the evaluation:

- Maximum permissible mass loading limits in lbs per day
- Concentration-based limits in ug/l calculated by dividing the permitted mass loading limits by the permitted flow rates for the systems
- April 2016 through October 2017 system discharge sample analytical results[30]

Based on a comparison of the 2017 system discharge data sets to the calculated concentration based limits, the system discharges are below the maximum permissible loading[31].

4.6 Recommendations

4.6.1 LFExS

The individual well mass removal estimates suggest there is significant variability in mass removal rates among the wells. The mass removal of the LFExS can be maintained and/or increased by increasing the extraction rate at wells removing a greater percentage of the contaminant mass and decreasing the extraction rate at wells removing a lower percentage of the contaminant mass. Changes in extraction rates are recommended such that hydraulic containment (inward and upward gradients) is maintained within the DDA. Based on the conclusions of the Performance Evaluation (Golder, 2012) and Appendix B of the Final FS Rev 1 (Golder, 2016b), Golder recommends maintaining the 8 to 10 gpm extraction rate for the LFExS and continued optimization of the extraction regime to maximize mass extraction while maintaining 8 to 10 gpm.

Based on a review of the mass removal rate of individual wells between May 2017 and October 2017 and contaminant concentrations within the DDA in September-October 2017, Golder recommends the following extraction rates for the LFExS wells:

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[28] Wastewater Discharge Permit WDP 04-107, Permit Revision 5 dated July 1, 2014 between NCC and the Trust.

[29] Note that the permit limit for molybdenum is listed by NCC as 0.00000 lbs/day.

[30] The detection limit for the molybdenum analysis is above the calculated concentration-based permit limit.

[31] Total cyanide has been non-detect at 0.01 mg/l in samples previously collected from well PW-1(U). Total cyanide was detected in the October 9, 2017 sample from well PW-1 at 1.9 mg/l which exceeds the permit limit of 0.49 mg/l. These data have been provided to NCC by the Trust. The total cyanide concentration in well PW-1(U) will be evaluated again in April 2018.

Well	Extraction Rate Minimum	Extraction Rate Maximum
BG-1	0.5	0.75
B-4DR	0.25	0.5
C-2D	0.75	1.0
C-4D	1.0	1.25
C-18D	0.75	1.0
C-19D	0.50	0.75
C-20D	3.25	3.5
C-30	1.0	1.25
Totals	**8 gpm**	**10 gpm**

These extraction rates are the same rates recommended in the previous semi-annual monitoring report.

4.6.2 PW-1(U) System

Well PW-1(U) has operated at over 30 gpm since addition of Redux 620 started in October 3, 2013. Operation of well PW-1(U) will continue to be monitored and evaluated semi-annually. There are no recommendations for changes in well PW-1(U) OM&M at this time. However, due to the decline in the average extraction rate since summer 2017, the Trust will be performing a chemical swabbing of well PW-1(U) in March 2018.

5.0 DATA EVALUATION AND INTERPRETATION

In their Fourth Five-Year Review Report for the Site, the USEPA provided the following recommendations/follow-up actions: "Progress toward the attainment of remedial action objectives, changes in Site conditions and opportunities for remedy optimization should be regularly evaluated using Site data and documented in regularly submitted reports. If necessary, data collection objectives should be reviewed." (USEPA, 2010)

5.1 Changes in Site Conditions

Golder evaluated changes in the groundwater conditions at the Site based on the September-October 2017 monitoring data. Sections 4.1.4 and 4.2.3 discuss COC concentration trends and Appendix F presents trend plots for the wells in the semi-annual monitoring program. RI/FS activities have provided additional information about groundwater conditions. Results of the monitoring indicate that the groundwater conditions are largely unchanged since the previous monitoring event, with the exception of the new maximum 1,4-dioxane concentration in well MW-28 located along the eastern lobe of the ACL. Additional information is provided in Section 4.2.3.2.

Changes in groundwater conditions will continue to be evaluated on a semi-annual basis and reported via the semi-annual monitoring reports.

5.2 Remedy Optimization

Modifications to the LFExS have been made with the intent of optimizing the system's performance both in maintaining hydraulic containment as well as in increasing the extraction rates of the extraction wells with the highest mass removal rates. Additional modifications in the form of rebalancing individual well extraction rates are recommended in Section 4.6.1. Hydraulic gradients and mass removal rates will continue to be evaluated on a semi-annual basis to further optimize the effectiveness of the LFExS.

Modifications to the well PW-1(U) system have been made with the intent of optimizing the system's performance both in maintaining hydraulic control as well as capturing groundwater impacts in migrating with in the UPA upper sand and from the UPCUTZ into the UPA upper sand near the DDA. Hydraulic gradients and mass removal rates will continue to be evaluated on a semi-annual basis.

5.3 Attainment of RAOs

In May 2016, the Trust submitted the Final FS Rev 1 for the Site including the proposed Remedial Action Objectives (RAOs) to the USEPA (Golder, 2016b). Based on the information presented in the Final FS Rev 1, the SSC Rev 2 and in this semi-annual report, progress is being made toward the attainment of these proposed RAOs.

The LFExS reduces the migration of COCs to groundwater from contaminated soil remaining in the DDA by lowering the water level in select areas (areas with higher relative contaminant concentrations) within

the DDA. The LFExS also reduces the contaminant mass remaining in the DDA and prevents migration of impacted groundwater from the DDA to the Columbia Aquifer, UPCUTZ and the UPA groundwater. Monitoring results indicate the LFExS is providing hydraulic containment and removing VOCs and BCEE contaminant mass from the DDA. Additional discussion about the hydraulic containment and mass removal by the LFExS is provided in Appendix B of the Final FS Report Rev 1 (Golder, 2016b).

As presented in the SSC Rev 2 Report, the groundwater data indicate that pumping well PW-1(U) captures some contaminant mass within the UPA upper sand and contaminant mass migrating from the UPCUTZ groundwater to the UPA upper sand groundwater to the north and northwest of well PW-1(U).

As discussed in Sections 2, 4 and 6 of the DAA (Golder, 2015a), there are institutional and engineering controls in place which achieve two of the four proposed RAOs for the Site. These RAOs are:

- Prevent direct contact with contaminated soil at the DDA that would result in unacceptable levels of risk, i.e., prevent exposures that would present a cumulative excess lifetime cancer risk greater than one in one million (1×10^{-6}) or result in a HI [hazard index] greater than 1.0[32]
- Prevent direct contact with groundwater containing contaminants from the DS&G Site at levels that exceed the ss-PRGs

Progress toward attainment of the proposed RAOs was discussed in Section 5.4.1 of the Final FS Rev 1 (Golder, 2016b), and will continue to be assessed on a semi-annual basis.

5.4 Data Collection Objectives

To assist with evaluation of the Site-wide contaminant concentration trends, the Trust obtains analytical and field parameter data for the wells sampled as part of the ACL monitoring program from NCC. In addition, the Trust sampled the UPA-101-TZ/UPA-101-US well pair installed in 2013, and the UPCUTZ and UPA wells installed in 2012 (DDA-07-US through DDA-17).

5.5 Evaluation of Tentatively Identified Compounds

On December 21, 2016, the Trust submitted to the USEPA a technical memorandum prepared by Golder regarding Review of Tentatively Identified Compounds in Groundwater (Golder, 2016c). This memorandum provided a summary of tentatively identified compounds (TICs) for the 2015 and 2016 groundwater monitoring events and recommended four compounds to be added to the target analyte list (TAL) for the Site (indane, 1,2,3-trimethylbenzene, N-methyl aniline and, fluorodichloromethane).

The USEPA provided a response to the memo via email dated February 7, 2017. In the response, the USEPA indicated concurrence with Golder's recommended TAL additions and requested that the Trust

[32] RAO revised from a cumulative excess lifetime cancer risk greater than one in ten thousand (1×10^{-4}) to one in one million (1×10^{-6}), based on the August 6, 2015 comments from the USEPA on the Draft FS.

perform a bi-annual review of groundwater TICs (the next review should to be completed in December 2018).

5.6 Reporting

The Trust will continue to summarize the routine groundwater monitoring results and evaluate the performance of the LFExS and pumping well PW-1(U) in semi-annual monitoring reports. These reports will be prepared for monitoring periods as follows: January 1 through June 30, and July 1 through December 31. The reports will be submitted to the USEPA within 60 days of the completion of the monitoring period.

6.0 CLOSING

Golder appreciates the opportunity to prepare this report for submission to the USEPA on behalf of the Trust. Should you have any questions regarding this report, please contact Ms. Theresa Miller at (978) 376-8434.

GOLDER ASSOCIATES INC.

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TABLES

Table 1
September-October 2017 Semi-Annual Monitoring Program
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Sample ID	Routine Groundwater Monitoring VOCs+ll-1,4-dioxane, SVOCs+ll-BCEE, d-Fe/Mn	FSWP Revision 2 (October 2011) Sample Location?
DDA Extraction Wells		
B-4DR	x	Yes
BG-1	x	Yes
C-18D	x	Yes
C-19D	x	Yes
C-20D	x	Yes
C-2D	x	Yes
C-30	x	Yes
C-4D	x	Yes
DDA Monitoring Wells		
B-2D	x	Yes
B-3D	x	Yes
C-1D	x	Yes
C-22S	x	Yes
C-3D	x	Yes
DGC-7C	x	Yes
DGC-8C		-
GA-101	x	Yes*
MHW-1M	x	Yes
MHW-1S	x	Yes
P-4D	x	Yes
PZ-11-EXT	x	Yes**
PZ-4-INT-R	x	Yes
PZ-6N	x	Yes
PZ-6S	x	Yes
PW-1(U) Monitoring Wells		
DDA-01	x	Yes
DDA-02	x	Yes
DDA-03	x	Yes
DDA-05	x	Yes
DDA-06	x	Yes
DDA-07-TZ		Not included in FSWP Revision 2. Installed as part of Supplemental Remedial Investigation Activities in Fall 2012. See Notes.
DDA-07-US		
DDA-08-TZ		
DDA-08-US		
DDA-09-TZ		
DDA-10-US	x	
DDA-11-LS		
DDA-11-US		
DDA-12-TZ		
DDA-12-US	x	
DDA-13-TZ		
DDA-14-TZ		
DDA-15-TZ		
DDA-15-US		
DDA-16-TZ		
DDA-16-US		
DDA-17		
DGC-2S	x	Yes
DGC-5	x	Yes
DGC-7S	x	Yes
MHW-1D		Yes
PW-1(U)		Yes
Downgradient UPA Wells		
AWC-E1 at 132 ft bgs	x	-
AWC-E1 at 156 ft bgs	x	-
AWC-E2 at 140 ft bgs	x	-
AWC-E2 at 165 ft bgs	x	-
DGC-10D	x	Yes
DGC-10S	x	Yes
DGC-11D		Yes
DGC-11S	x	Yes
DGC-8D		-
DGC-8S		-
RT-1-UP	x	Yes
UPA-01	x	Yes
UPA-02D	x	Yes
UPA-02S	x	Yes
UPA-03D	x	Yes
AWC Wells		
AWC-7	^	Yes
AWC-G3R	^	Yes
AWC-K1	x	Yes
NCC UPA Monitoring Wells and P-6 Vicinity		
MW-18	x	Yes***
MW-26N	x	Yes***
MW-28	x	-
MW-29	x	-
MW-31	x	-
MW-34	x	Yes***
P-6_(UPA)		Yes***
BW-1	x	-
BW-2	x	-
P-4_UPA	x	-
P-5L		-
UPA-101-TZ		Not included in FSWP Rev 2. Installed in Fall 2013.
UPA-101-US		
NCC Sewer Discharge Monitoring Points		
PW-1(U) Discharge	x	-
TTO		-

Notes:
1) A synoptic round of water level measurements was collected after the monitoring event.

2) The following quality assurance/quality control (QA/QC) samples were collected during the monitoring event at a rate of 1 per 20 primary samples: field duplicates, field equipment rinsate blanks, matrix spikes and matrix spike duplicates.

3) Trip blanks accompanied each shipment of VOC samples (1 per day).
4) ll = low level
5) d-Fe/Mn = dissolved iron and manganese
6) FSWP = Feasibility Study Work Plan
7) VOCs = volatile organic compounds
8) SVOCs = semi-volatile organic compounds
9) DDA = drum disposal area
10) UPA = Upper Potomac Aquifer
11) NCC = New Castle County
12) AWC = Artesian Water Company
13) ft bgs = feet below ground surface
14) Both PW-1(U) Discharge and TTO are monitored for VOCs, SVOCs, d-Fe/Mn, and NCC Discharge Permit Parameters.

- Indicates well was not included as a FSWP Revision 2 sample location

*According to the FSWP Revision 2 SAP, well GA-101 has been added as a routine semi-annual well due to PRG exceedances.

** PZ-11-EXT was included in the FSWP Revision 2 SAP for a one-time sampling event.

*** Initially sampled in April 2012 to collect additional FS parameters, but due to detections in well P-6_(UPA), these area wells remained in the monitoring program.

^ Wells were not sampled during the September-October 2017 sampling event due to denial of access by AWC

Prepared by: CRT
Checked by: TGB
Reviewed by: TAM

Golder Associates

Table 2
Groundwater Elevations - September 2017
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Monitoring Point ID	Hydrogeologic Unit	Reference Elevation (feet MSL)	Date	Depth to Groundwater (feet BTOIC)	Groundwater Elevation (feet MSL)	Extracting Well Function
DDA Extraction Wells						
B-4DR	Columbia Aquifer - Columbia Sand	30.15	9/25/2017	34.02	-3.87	Extracting
BG-1	Columbia Aquifer	24.97	9/25/2017	32.95	-7.98	-
C-18D	Columbia Aquifer	25.41	9/25/2017	32.70	-7.29	-
C-19D	Columbia Aquifer	28.86	9/25/2017	36.71	-7.85	Extracting
C-20D	Columbia Aquifer	32.57	9/25/2017	NM	-	Extracting
C-2D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.44	9/25/2017	28.24	-5.80	Extracting
C-30	Columbia Aquifer	25.71	9/25/2017	33.58	-7.87	Extracting
C-4D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.74	9/25/2017	27.80	-5.06	Extracting
DDA Monitoring Wells						
B-1D	Columbia Aquifer	27.40	9/25/2017	30.37	-2.97	-
B-2D	Columbia Aquifer - Columbia Sand and Basal Gravel	28.60	9/25/2017	34.14	-5.54	-
B-3D	Columbia Aquifer	31.21	9/25/2017	36.46	-5.25	-
C-1D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.30	9/25/2017	27.75	-5.45	-
C-3D	Columbia Aquifer	22.66	9/25/2017	27.79	-5.13	-
C-5D	Columbia Aquifer	23.20	9/25/2017	27.54	-4.34	-
C-6_DDA	Columbia Aquifer	25.32	9/25/2017	27.76	-2.44	-
C-7	Columbia Aquifer	23.07	9/25/2017	NM	-	-
C-8	Columbia Aquifer	23.50	9/25/2017	24.94	-1.44	-
C-9	Columbia Aquifer	24.93	9/25/2017	26.73	-1.80	-
C-10	Columbia Aquifer	26.43	9/25/2017	28.90	-2.47	-
C-12	Columbia Aquifer	26.04	9/25/2017	29.13	-3.09	-
C-14	Columbia Aquifer	25.50	9/25/2017	29.17	-3.67	-
C-15D	Columbia Aquifer	23.53	9/25/2017	27.00	-3.47	-
C-16	Columbia Aquifer	24.01	9/25/2017	26.86	-2.85	-
C-17	Columbia Aquifer	24.80	9/25/2017	27.86	-3.06	-
C-21D	Columbia Aquifer	32.42	9/25/2017	37.79	-5.37	-
C-22D	Columbia Aquifer	33.38	9/25/2017	37.78	-4.40	-
C-22S	Columbia Aquifer	34.55	9/25/2017	35.94	-1.39	-
C-23	Columbia Aquifer	29.70	9/25/2017	32.58	-2.88	-
C-24	Columbia Aquifer	28.28	9/25/2017	30.48	-2.20	-
C-25	Columbia Aquifer	30.37	9/25/2017	33.50	-3.13	-
C-27	Columbia Aquifer	29.25	9/25/2017	32.19	-2.94	-
DGC-7C	Columbia Aquifer	29.65	9/25/2017	30.52	-0.87	-
DGC-8C	Columbia Aquifer	24.57	9/25/2017	26.22	-1.65	-
DGC-15**	Columbia Aquifer	42.48	9/25/2017	19.65	22.83	-
GA-101	Columbia Aquifer	23.65	9/25/2017	26.13	-2.48	-
MHW-1M	Base of Columbia Aquifer	29.83	9/25/2017	35.60	-5.77	-
MHW-1S	Columbia Aquifer	29.83	9/25/2017	32.71	-2.88	-
P-4D	Columbia Aquifer - UPCU, Columbia Clay, Basal Gravel	25.22	9/25/2017	26.19	-0.97	-
PZ-11-EXT	Columbia Aquifer	23.27	9/25/2017	26.09	-2.82	-
PZ-11-INT-R	Columbia Aquifer	24.28	9/25/2017	29.91	-5.63	-
PZ-12-EXT	Columbia Aquifer	26.07	9/25/2017	27.97	-1.90	-
PZ-12-INT	Columbia Aquifer	24.77	9/25/2017	29.12	-4.35	-
PZ-2-EXT	Columbia Aquifer	25.49	9/25/2017	26.14	-0.65	-
PZ-2-INT	Columbia Aquifer	29.53	9/25/2017	32.34	-2.81	-
PZ-3 INT	Columbia Aquifer	21.56	9/25/2017	26.66	-5.10	-
PZ-4-EXT	Columbia Aquifer	23.98	9/25/2017	26.62	-2.64	-
PZ-4-INT-R	Columbia Aquifer	24.11	9/25/2017	25.77	-1.66	-
PZ-5-EXT	Columbia Aquifer	24.18	9/25/2017	25.97	-1.79	-
PZ-5-INT	Columbia Aquifer	24.40	9/25/2017	27.28	-2.88	-
PZ-6N	Columbia Aquifer	27.55	9/25/2017	28.76	-1.21	-
PZ-6S	Columbia Aquifer	28.01	9/25/2017	30.85	-2.84	-
PW-1(U) Monitoring Wells						
DDA-01	UPA - Upper Sand	30.92	9/25/2017	34.68	-3.76	-
DDA-02	UPA - Upper Sand	29.57	9/25/2017	33.81	-4.24	-
DDA-03	UPA - Upper Sand	27.12	9/25/2017	31.58	-4.46	-
DDA-04	UPA - Upper Sand	31.03	9/25/2017	36.78	-5.75	-
DDA-05	UPCU - Transition Zone	28.68	9/25/2017	32.67	-3.99	-
DDA-06	UPCU - Transition Zone	28.14	9/25/2017	32.68	-4.54	-
DDA-07-TZ	UPCU - Transition Zone	25.22	9/25/2017	27.71	-2.49	-
DDA-07-US	UPA - Upper Sand	25.44	9/25/2017	28.27	-2.83	-
DDA-08-TZ	UPCU - Transition Zone	26.20	9/25/2017	29.67	-3.47	-
DDA-08-US	UPA - Upper Sand	24.52	9/25/2017	27.70	-3.18	-
DDA-09-TZ	UPCU - Transition Zone	30.86	9/25/2017	36.58	-5.72	-
DDA-10-US	UPA - Upper Sand	24.30	9/25/2017	28.24	-3.94	-
DDA-11-LS	UPA - Lower Sand	31.38	9/25/2017	35.90	-4.52	-
DDA-11-US	UPA - Upper Sand	31.53	9/25/2017	35.78	-4.25	-
DDA-12-TZ	UPCU - Transition Zone	27.90	9/25/2017	32.81	-4.91	-
DDA-12-US	UPA - Upper Sand	28.27	9/25/2017	33.36	-5.09	-
DDA-13-TZ	UPCU - Transition Zone	29.90	9/25/2017	35.01	-5.11	-
DDA-14-TZ	UPCU - Transition Zone	30.32	9/25/2017	34.16	-3.84	-
DDA-15-TZ	UPCU - Transition Zone	33.98	9/25/2017	37.61	-3.63	-
DDA-15-US	UPA - Upper Sand	34.58	9/25/2017	38.37	-3.79	-
DDA-16-TZ	UPCU - Transition Zone	28.59	9/25/2017	32.32	-3.73	-
DDA-16-US	UPA - Upper Sand	29.05	9/25/2017	32.58	-3.53	-
DDA-17	UPA - Upper Sand	29.39	9/25/2017	33.69	-4.30	-
DGC-2D	UPA - Lower Sand	31.51	9/25/2017	35.23	-3.72	-
DGC-2S	UPA - Upper Sand	31.90	9/25/2017	34.95	-3.05	-
DGC-5	UPCU - Transition Zone	15.14	9/25/2017	17.83	-2.69	-
DGC-7S	UPA - Upper Sand	29.74	9/25/2017	34.49	-4.75	-
MHW-1D	UPA - Upper Sand	29.99	9/25/2017	33.86	-3.87	-
MW-45	UPA - Upper and Lower Sand	25.85	9/25/2017	31.80	-5.95	-
PW-1(U)	UPA - Upper Sand	31.38	9/25/2017	80.18**	-48.80	Extracting
Downgradient UPA Wells						
AWC-E2	UPA - Upper and Lower Sand	34.00	9/25/2017	62.04	-28.04	-
DGC-8D	UPA - Lower Sand	24.41	9/25/2017	29.41	-5.00	-
DGC-8S	UPA - Upper Sand	24.61	9/25/2017	29.43	-4.82	-
DGC-10D	UPA - Lower Sand	41.77	9/25/2017	57.23	-15.46	-
DGC-10S	UPA - Upper Sand	41.92	9/25/2017	57.22	-15.30	-
DGC-11D	UPA - Upper Sand	38.93	9/25/2017	55.94	-17.01	-
DGC-11S	UPA - Upper Sand	38.54	9/25/2017	51.13	-12.59	-
RT-1-UP	UPA - Upper Sand	39.16	9/25/2017	50.22	-11.06	-
UPA-01	UPA - Upper Sand	35.76	9/25/2017	46.72	-10.96	-
UPA-02D	UPA - Lower Sand	44.15	9/25/2017	60.09	-15.94	-
UPA-02S	UPA - Upper Sand	44.37	9/25/2017	60.19	-15.82	-
UPA-03D	UPA - Lower Sand	30.14	9/25/2017	53.81	-23.67	-
NCC UPA Monitoring Wells and P-6 Vicinity						
BW-1	UPA - Lower Sand	30.32	9/25/2017	45.95	-15.63	-
BW-2	UPA - Lower Sand	33.68	9/25/2017	48.76	-15.08	-
BW-3	UPA - Lower Sand	7.80	9/25/2017	NM	-	-
MW-18	UPA - Upper Sand	6.97	9/25/2017	19.54	-12.57	-
MW-22N	UPA - Lower Sand	51.68	9/25/2017	68.89	-17.21	-
MW-26N	UPA - Upper and Lower Sand	36.76	9/25/2017	55.74	-18.98	-
MW-28	UPA - Upper and Lower Sand	20.37	9/25/2017	29.14	-8.77	-
MW-29	UPA - Upper and Lower Sand	17.38	9/25/2017	23.26	-5.88	-
MW-31	UPA - Upper and Lower Sand	13.77	9/25/2017	17.75	-3.98	-
MW-34	UPA - Upper and Lower Sand	7.20	9/25/2017	19.77	-12.57	-
MW-38N	UPA - Upper and Lower Sand	35.55	9/25/2017	48.19	-12.64	-
MW-40	UPA - Lower Sand	36.32	9/25/2017	48.06	-11.74	-
MW-49N	UPA - Upper and Lower Sand	51.41	9/25/2017	NM	-	-
P-4_UPA (18)	UPA - Upper Sand	47.89	9/25/2017	62.87	-14.98	-
P-5L	UPA - Lower Sand	14.90	9/25/2017	29.40	-14.50	-
P-5U	UPA - Upper Sand	15.30	9/25/2017	27.66	-12.36	-
P-6_UPA	UPA - Upper Sand	43.06	9/25/2017	50.68	-7.62	-
RW-2	UPA - Upper Sand	6.98	9/25/2017	20.21	-13.23	-
RW-5	UPA - Upper Sand	33.09	9/25/2017	44.80	-11.71	-
RW-10	UPA - Upper Sand	8.67	9/25/2017	18.30	-9.63	-
RW-6	UPA - Upper Sand	14.98	9/25/2017	NM	-	-
UPA-101-TZ	UPCU - Transition Zone	46.13	9/25/2017	54.62	-8.49	-
UPA-101-US	UPA - Upper Sand	46.23	9/25/2017	53.49	-7.26	-
AWC Wells						
AWC-E1	UPA - Upper and Lower Sand	40.50	9/25/2017	67.36	-26.86	-
AWC-J1	UPA - Upper and Lower Sand	11.58	9/25/2017	51.97	-40.39	-
AWC-K1	UPA - Lower Sand	29.56	9/25/2017	57.44	-27.88	-
AWC-MW-1	UPA - Lower Sand	10.34	9/25/2017	48.97	-38.63	-
AWC-MW-2	UPA - Upper Sand	10.50	9/25/2017	40.03	-29.53	-
AWC-MW-3	UPA - Lower Sand	9.65	9/25/2017	39.69	-30.04	-
AWC-MW-4	UPA - Lower Sand	12.49	9/25/2017	46.12	-33.63	-
AWC-MW-5	UPA - Upper Sand	12.49	9/25/2017	46.49	-34.00	-
AWC-MW-6	UPA - Lower Sand	18.58	9/25/2017	53.10	-34.52	-
AWC-2*	UPA - Lower Sand	64.58		NA		Extracting
AWC-6*	UPA - Upper and Lower Sand	55.91		NA		-
AWC-7*	UPA - Upper and Lower Sand	47.98		NA		Extracting
AWC-G3R*	UPA - Upper and Lower Sand	19.70		NA		Extracting
AWC-ASR*	UPA - Lower Sand	10.70		NA		-

Notes

(1) MSL = Mean Sea Level
(2) BTOIC = Below Top of Inner Casing
(3) DDA = Drum Disposal Area
(4) LFExS = Low-flow Extraction System
(5) NA = Not Available
(6) NC = Not Calculated
(7) NM = Not Measured
(8) NCC = New Castle County
(9) UPA = Upper Potomac Aquifer
(10) UPCU = Upper Potomac Confining Unit
(11) Survey data provided by Delaware Sand and Gravel Trust.
(12) Survey data updated based on 12/5/2012, 12/11/2012, and 12/18/2013 surveys, where available.
(13) * = Water level data not provided by Artesian Water Company
(14) ** = Perched water table
(15) AWC = Artesian Water Company
(16) ASR = Aquifer Storage and Recovery
(17) As observed by Delaware Sand & Gravel Trust
(18) Golder replaced the expandable well cap on well P-4 in May 2015. During the March-April 2015 monitoring event, Golder observed that the expandable well cap could not expand to correctly seal the well from water infiltration. Well P-4 is located in a localized topographic low point and, potentially susceptible to surface water infiltration.

Prepared by: TGB
Checked by: BPC
Reviewed by: TAM

Table 3
Groundwater Field Parameter Summary - September 2017
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Monitoring Point ID	Note Number	Date Sampled	Hydrogeologic Unit	Temperature [°C]	pH [std]	Specific Conductance [mS/cm]	Dissolved Oxygen [mg/L]	Redox Potential [mV]	Turbidity [ntu]	Volume Purged (1) [liters]	Depth to Water(2) [ft-btoic]
DDA Extraction Wells											
B-4DR	3	10/12/2017	Columbia Aquifer - Columbia Sand	17.60	6.57	0.652	0.00	-99	116.0	15	33.62
BG-1	3	10/9/2017	Columbia Aquifer	20.22	6.23	0.000	14.93	72	396.0	5	-
C-18D	3	10/9/2017	Columbia Aquifer	19.57	6.15	0.352	0.00	-66	1.0	5	-
C-19D	3	10/9/2017	Columbia Aquifer	18.55	6.17	0.345	0.00	-74	0.0	5	-
C-20D	3	10/9/2017	Columbia Aquifer	16.12	6.29	0.451	7.20	-79	0.0	5	-
C-2D	3	10/12/2017	Columbia Aquifer - Columbia Sand and Basal Gravel	17.76	6.26	0.326	8.80	-39	375.0	2	-
C-4D	3	10/12/2017	Columbia Aquifer - Columbia Sand and Basal Gravel	15.24	6.85	0.521	0.00	-163	181.0	22	27.65
C-30	3	10/9/2017	Columbia Aquifer	18.69	6.31	0.412	0.00	-102	0.0	5	-
DDA Monitoring Wells											
B-2D		10/6/2017	Columbia Aquifer - Columbia Sand and Basal Gravel	18.40	6.35	0.458	0.00	-112	36.3	22	33.95
B-3D		10/6/2017	Columbia Aquifer	17.13	6.77	0.626	0.00	-65	0.0	10	36.09
C-1D		10/6/2017	Columbia Aquifer - Columbia Sand and Basal Gravel	17.42	6.39	0.334	0.00	-120	276	28	28.12
C-3D		10/10/2017	Columbia Aquifer	16.28	6.89	0.495	0.00	-94	6.7	48	27.91
C-22S		10/10/2017	Columbia Aquifer	20.20	6.58	0.709	0.00	-62	0.0	11	36.68
DGC-7C	4	10/11/2017	Columbia Aquifer	18.91	6.23	0.826	3.94	-99	34.2	11	34.13
GA-101		10/6/2017	Columbia Aquifer	18.15	7.06	0.693	0.00	-150	0.0	18	27.16
MHW-1M		10/11/2017	Base of Columbia Aquifer	18.19	7.69	0.683	0.00	-177	5.9	10	35.83
MHW-1S		10/11/2017	Columbia Aquifer	20.11	6.30	0.903	0.00	-57	169.0	32	34.66
P-4D		10/5/2017	Columbia Aquifer - UPCU, Columbia Clay, Basal Gravel	16.57	6.20	0.452	0.00	-25	0.0	10	26.52
PZ-4-INTR		10/5/2017	Columbia Aquifer	16.29	6.48	0.351	0.00	-28	0.0	12	23.94
PZ-6N	4	10/10/2017	Columbia Aquifer	20.28	6.58	0.464	1.05	-78	25.0	6	36.10
PZ-6S	4	10/10/2017	Columbia Aquifer	16.91	6.65	0.471	0.00	-141	8.9	3	31.32
PZ-11-EXT		10/6/2017	Columbia Aquifer	17.27	7.14	0.315	0.00	-147	65.7	24	26.42
PW-1(U) Monitoring Wells											
DDA-01		10/11/2017	UPA - Upper Sand	15.29	5.67	0.257	0.00	-12	21.6	24	35.04
DDA-02		10/9/2017	UPA - Upper Sand	14.81	5.49	0.255	0.00	24	8.4	20	33.98
DDA-03		10/5/2017	UPA - Upper Sand	14.79	5.57	0.458	0.00	70	0.0	12	31.99
DDA-05		10/11/2017	UPCU - Transition Zone	16.70	6.09	0.306	0.00	-96	0.0	16	32.96
DDA-06		10/9/2017	UPCU - Transition Zone	18.61	8.65	0.456	0.00	-238	0.0	17	37.30
DDA-10-US		10/11/2017	UPA - Upper Sand	16.80	6.34	0.503	0.00	-149	1.0	22	28.92
DDA-12-US		10/5/2017	UPA - Upper Sand	15.36	6.42	0.393	0.00	-113	0.0	12	34.83
DGC-2S		10/5/2017	UPA - Upper Sand	14.91	5.57	0.191	0.00	58	5.5	22	35.40
DGC-5		10/4/2017	UPCU - Transition Zone	13.75	6.67	0.365	0.00	-68	20.1	14	18.60
DGC-7S		10/10/2017	UPA - Upper Sand	17.31	6.05	0.251	0.00	-54	51.9	12	34.97
MHW-1D		10/10/2017	UPA - Upper Sand	15.57	5.48	0.309	0.00	37	0.0	16	34.04
PW-1(U)	3	10/9/2017	UPA - Upper Sand	19.87	6.10	0.296	8.56	-45	12.0	5	-
Downgradient UPA Wells											
DGC-10D		9/27/2017	UPA - Lower Sand	16.03	4.09	0.189	0.00	276	12.8	24	57.82
DGC-10S		9/27/2017	UPA - Upper Sand	19.18	6.34	0.219	8.54	-46	43.4	22	58.25
DGC-11D		9/27/2017	UPA - Upper Sand	15.41	4.25	0.159	0.00	241	0.0	14	55.83
DGC-11S		9/27/2017	UPA - Upper Sand	15.66	5.73	0.072	2.84	52	102	28	51.89
RT-1-UP		10/2/2017	UPA - Upper Sand	19.56	5.33	0.098	0.00	98	0.0	10	51.40
UPA-01		10/4/2017	UPA - Upper Sand	15.16	6.41	0.280	0.00	-101	118.0	26	87.85
UPA-02D		10/4/2017	UPA - Lower Sand	14.87	5.91	0.283	0.00	19	0.0	12	59.67
UPA-02S		10/4/2017	UPA - Upper Sand	15.77	4.87	0.317	2.76	238	0.0	12	59.94
UPA-03D		9/29/2017	UPA - Lower Sand	13.57	5.25	0.181	0.00	237	19.5	30	53.32
AWC-E1(132)		9/28/2017	UPA - Upper Sand	15.55	5.92	0.296	0.00	18	14.5	24	67.46
AWC-E1 (156)		9/28/2017	UPA - Lower Sand	15.69	5.99	0.294	0.00	-7	292.0	22	67.61
AWC-E2 (140)		9/28/2017	UPA - Upper Sand	14.17	5.63	0.193	0.00	14	15.2	14	62.06
AWC-E2 (165)		9/28/2017	UPA - Lower Sand	14.18	6.20	0.212	0.00	17	54.1	34	62.22
NCC UPA Monitoring Wells and P-6 Vicinity											
BW-1		10/3/2017	UPA - Lower Sand	15.53	6.36	0.470	0.00	-70	41.1	18	45.60
BW-2		10/3/2017	UPA - Upper and Lower Sand	17.98	6.58	0.329	0.00	-18	17.2	22	48.69
MW-18		9/29/2017	UPA - Upper Sand	13.43	6.38	0.461	1.11	-95	12.1	28	-
MW-26N		10/5/2017	UPA - Upper and Lower Sand	14.98	5.91	0.267	0.00	75	0.0	10	55.27
MW-28		10/2/2017	UPA - Upper and Lower Sand	14.06	6.57	0.470	0.00	-129	0.0	10	29.72
MW-29		10/2/2017	UPA - Upper and Lower Sand	16.09	7.37	0.542	0.06	-136	0.5	18	23.71
MW-31		10/2/2017	UPA - Upper and Lower Sand	14.27	7.15	0.503	0.00	-70	52.7	24	18.16
MW-34		9/29/2017	UPA - Upper and Lower Sand	13.18	6.14	0.339	0.00	-4	3.6	26	19.63
P-4_UPA		9/29/2017	UPA - Upper Sand	15.45	5.95	0.216	0.00	159	0.0	14	63.46
P-5L		10/2/2017	UPA - Lower Sand	15.62	5.83	0.181	0.00	76	0.0	10	29.71
P-6_UPA		10/4/2017	UPA - Upper Sand	14.33	6.86	0.379	0.00	-144	0.9	12	51.01
RW-10		10/2/2017	UPA - Upper Sand	13.46	6.64	0.324	0.03	-111	25.6	24	18.93
AWC Wells											
AWC-K1		9/28/2017	UPA - Lower Sand	14.49	6.69	0.313	0.00	-21	32.0	34	58.13
NCC Sewer Discharge Monitoring Points											
TTO	3	10/9/2017	Columbia Aquifer	18.04	6.26	0.432	4.40	-81	156.0	5	-

Notes

(1) All wells were purged using the low-flow purging and sampling procedure based upon the USEPA Region II document entitled "Groundwater Sampling Procedure, Low Stress (Low Flow) Purging and Sampling" dated March 20, 1998 except as noted below.

Prepared by: LWL
Checked by: CRT
Reviewed by: TAM

(2) Depth to water measurements were made prior to purging the wells. These values are not the same as the values measured during the synoptic round of water level measurements.
(3) Wells B-4DR, BG-1, C-2D, C-4D, C-18D, C-19D, C-20D, C-30 and PW-1(U) are extraction wells that typically run continuously. The port of each well, as well as TTO, was purged at least 19 liters prior to sample collection with the
(4) Purged and sampled with a bailer using the conventional 3 well volume method due to insufficient recharge for low flow purging.
(5) AWC = Artesian Water Company
(6) DDA = Drum Disposal Area
(7) LFExS = Low-flow Extraction System
(8) NCC = New Castle County
(9) '-' = Not Measured
(10) TTO = Total Toxic Organics
(11) UPA = Upper Potomac Aquifer
(12) UPCU = Upper Potomac Confining Unit
(13) °C = degrees Celsius
(14) std = standard units
(15) mS/cm = millisiemens per centimeter
(16) mg/L = milligrams per liter
(17) mV = millivolts
(18) ntu = nephelometric turbidity units
(19) ft-btoic = feet below top of inner casing

Table 4
DDA Combined LFExS Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Flow Rate							Analytical Results			Detected Concentrations			Mass Removed		Average Mass Removal Rate					
Period of Mass Calculation	Days in period	Days of System Operation	Percent Operation	Total Volume for Period	Average Flow Rate(9)	Adjusted Average Flow Rate(10)	Sample Date	Total VOCs	BCEE	Total VOCs	BCEE	Concentration Note	Total VOCs	BCEE	Total VOCs			BCEE		
			%	Gallons	GPM	GPM		ug/l	ug/l	ug/l	ug/l		lb	lb	lb/day	lb/6-mo	lb/year	lb/day	lb/6-mo	lb/year
5/4/2009 - 10/31/2009	180	180	100%	629,891	**2.43**	**2.43**	5/26/2009	455.4	280			*Startup date 5/4/2009*								
							10/15/2009	166.1	53	311	167	Average of 5/26/2009 and 10/15/2009 values	1.63	0.88	9.07E-03	1.66	3.31	4.87E-03	0.89	1.78
11/1/2009 - 4/30/2010	180	180	100%	768,957	**2.97**	**2.97**	4/14/2010	225.1	0	196	27	Average of 10/15/2009 and 4/14/2010 values	1.26	0.17	6.98E-03	1.27	2.55	9.62E-04	0.18	0.35
5/1/2010 - 10/31/2010	183	183	100%	1,280,274	**4.86**	**4.86**	10/11/2010	635.3	20	430.0	10	Average of 4/14/2010 and 10/11/2010 values	4.59	0.11	2.51E-02	4.58	9.15	5.83E-04	0.11	0.21
11/1/2010 - 4/30/2011	180	176	98%	1,292,178	**4.99**	**5.10**	4/4/2011	287.3	20	461	20	Average of 10/11/2010 and 4/4/2011 values	4.97	0.22	2.76E-02	5.04	10.07	1.20E-03	0.22	0.44
5/1/2011 - 10/31/2011	183	183	100%	1,741,056	**6.61**	**6.61**	10/6/2011	450.0	15	369	18	Average of 4/4/2011 and 10/6/2011 values	5.36	0.26	2.93E-02	5.34	10.68	1.43E-03	0.26	0.52
11/1/2011 - 4/30/2012	181	177	98%	1,993,749	**7.65**	**7.82**	4/2/2012	324.3	13	387	14	Average of 10/6/2011 and 4/2/12 values	6.43	0.23	3.55E-02	6.49	12.97	1.29E-03	0.23	0.47
5/1/2012 - 10/31/2012	183	183	100%	1,796,158	**6.82**	**6.82**	10/8/2012	128.6	7.0	226	10	Average of 4/2/12 and 10/8/12 values	3.38	0.15	1.85E-02	3.38	6.75	8.18E-04	0.15	0.30
11/1/2012 - 4/30/2013	180	179	99%	2,397,889	**9.25**	**9.30**	3/18/2013	221.4	9.5	175	8.0	Average of 10/8/12 and 3/18/13 values	3.50	0.16	1.94E-02	3.55	7.09	8.88E-04	0.16	0.32
5/1/2013 - 10/31/2013	183	180	98%	2,592,490	**9.84**	**10.0**	9/30/2013	230.0	14	226	12	Average of 3/18/13 and 9/30/13 values	4.88	0.26	2.67E-02	4.87	9.74	1.42E-03	0.26	0.52
11/1/2013 - 4/30/2014	180	179	99%	2,340,780	**8.98**	**9.03**	3/24/2014	170.5	9.7	200	12	Average of 9/30/13 and 3/24/14 values	3.91	0.23	2.17E-02	3.97	7.94	1.29E-03	0.24	0.47
5/1/2014 - 10/31/2014	183	182	99%	2,639,447	**10.08**	**10.14**	9/30/2014	119.4	13	145	11	Average of 3/24/14 and 9/30/14 values	3.19	0.25	1.74E-02	3.19	6.37	1.37E-03	0.25	0.50
11/1/2014 - 4/30/2015	180	180	100%	2,379,788	**9.13**	**9.13**	3/30/2015	103.1	20	111	17	Average of 9/30/14 and 3/30/15-4/2/15 values (note 12)	2.21	0.33	1.23E-02	2.24	4.48	1.82E-03	0.34	0.66
5/1/2015 - 10/31/2015	183	182	99%	2,486,638	**9.38**	**9.44**	9/28/2015	99.1	27	101	24	Average of 3/30/15-4/2/15 (note 12) and 9/30/15 values	2.10	0.49	1.15E-02	2.09	4.19	2.66E-03	0.49	0.97
11/1/2015 - 4/30/2016	181	180	99%	1,916,462	**7.31**	**7.35**	4/7/2016	135.6	26	117	27	Average of 9/28/15 and 3/30/2016 values	1.88	0.42	1.04E-02	1.89	3.79	2.34E-03	0.43	0.85
5/1/2016 - 10/31/2016	183	182	99%	2,282,164	**8.61**	**8.66**	9/30/2016	181.6	19	159	23	Average of 4/7/2016 and 9/30/2016 values	3.02	0.43	1.65E-02	3.02	6.03	2.34E-03	0.43	0.85
11/1/2016 - 4/30/2017	180	180	100%	1,722,069	**6.61**	**6.61**	3/27/2017	295.8	14	239	17	Average of 9/30/2016 and 3/27/2017 values	3.43	0.24	1.91E-02	3.48	6.96	1.32E-03	0.25	0.48
5/1/2017 - 10/31/2017	183	182	99%	2,760,164	**10.42**	**10.48**	10/9/2017	116.0	23	206	19	Average of 3/27/2017 and 10/9/2017 values	4.74	0.43	2.59E-02	4.73	9.47	2.33E-03	0.43	0.85

NOTES
(1) The low flow extraction system (LFExS) began operation on May 4, 2009
(2) Analytical results used in the mass removal calculation are based on unvalidated effluent data for the total toxic organics sample and do not include tentatively identified compounds (TICs)
(3) Flow volume and average values based on totalizer volume spreadsheet provided by DS&G Remedial Trust
(4) ug/l = micrograms per liter
(5) lb = pound
(6) GPM = gallons per minute
(7) VOCs = volatile organic compounds
(8) BCEE = bis(2-chloroethyl)ether
(9) Average flow rate represents system discharge rate to sewer
(10) Adjusted average flow rate represents system flow for periods of system operation, excluding down-time
(11) Total VOCs based on 624 analysis that does not include 1,4-dioxane
(12) Primary sample collected on March 30, 2015 and re-sampled for SVOC analysis on April 2, 2015

Prepared by: BPC
Checked by: TGB
Reviewed by: TAM

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Well	Avg Flow prior to sample (GPM)	Days in Period	(hide) Days System Down	Days of System Operation	Percent Operation (%)	Adjusted Flow Rate (GPM)	Average Flow Period	Sample Date	Total Detected VOC Concentration (Revised analyte list) (ug/l)	Total Detected VOC Concentration (Historical analyte list) (ug/l)	1,4-Dioxane Concentration (ug/l)	BCEE Concentration (ug/l)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/day)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/day)	Adjusted 1,4-Dioxane Mass Removal (lb/day)	Adjusted BCEE Mass Removal (lb/day)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/year)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/year)	Adjusted 1,4-Dioxane Mass Removal (lb/year)	Adjusted BCEE Mass Removal (lb/year)	TVOC Mass Removal (% of Total)	BCEE Mass Removal (% of Total)	1,4-Dioxane Mass Removal (% of Total)
5/4/2009	**through**	**10/31/2009**																					
B4D	0.94	180	0	180	100%	0.94	05/06/09 - 06/15/09	7/10/2009	NA	224	NA	500	NA	2.53E-03		5.64E-03	NA	0.92	NA	2.06	9%	63%	NA
C2D	0.86	180	0	180	100%	0.86	05/06/09 - 06/15/09	7/10/2009	NA	199	NA	29	NA	2.05E-03		2.99E-04	NA	0.75	NA	0.11	7%	3%	NA
C4D	1.02	180	0	180	100%	1.02	05/06/09 - 06/15/09	7/10/2009	NA	49	NA	140	NA	5.96E-04		1.71E-03	NA	0.22	NA	0.63	2%	19%	NA
C18D	0.59	180	0	180	100%	0.59	05/06/09 - 06/15/09	7/10/2009	NA	1884	NA	63	NA	1.33E-02		4.46E-04	NA	4.87	NA	0.16	47%	5%	NA
C19D	0.86	180	0	180	100%	0.86	05/06/09 - 06/15/09	7/10/2009	NA	46	NA	30	NA	4.70E-04		3.10E-04	NA	0.17	NA	0.11	2%	3%	NA
BG-1	0.49	180	0	180	100%	0.49	05/06/09 - 06/15/09	7/10/2009	NA	1649	NA	90	NA	9.70E-03		5.29E-04	NA	3.54	NA	0.19	34%	6%	NA
TOTAL=	**4.76**											**TOTAL=**		**2.87E-02**		**8.94E-03**	NA	**10.47**	NA	**3.26**	**100%**	**100%**	
11/1/2009	**through**	**4/30/2010**																					
B4D	0.62	180	0	180	100%	0.62	03/31/10 - 04/12/10	4/14/2010	NA	280	NA	51	NA	2.08E-03		3.80E-04	NA	0.76	NA	0.14	5%	27%	NA
C2D	0.39	180	0	180	100%	0.39	03/31/10 - 04/12/10	4/14/2010	NA	35	NA	14	NA	1.65E-04		6.55E-05	NA	0.06	NA	0.02	0%	5%	NA
C4D	0.81	180	0	180	100%	0.81	03/31/10 - 04/12/10	4/14/2010	NA	207	NA	46	NA	2.01E-03		4.47E-04	NA	0.73	NA	0.16	5%	32%	NA
C18D	0.75	180	0	180	100%	0.75	03/31/10 - 04/12/10	4/14/2010	NA	4371	NA	46	NA	3.94E-02		4.14E-04	NA	14.37	NA	0.15	89%	30%	NA
C19D	1.02	180	0	180	100%	1.02	03/31/10 - 04/12/10	4/14/2010	NA	40	NA	7	NA	4.90E-04		8.57E-05	NA	0.18	NA	0.03	1%	6%	NA
BG-1	0	180	14	166	92%	0.00	03/31/10 - 04/12/10	4/14/2010	NA	561	NA	22	NA	0.00E+00		0.00E+00	NA	0.00	NA	0.00	0%	0%	NA
TOTAL=	**3.59**											**TOTAL=**		**4.41E-02**		**1.39E-03**	NA	**16.10**	NA	**0.50**	**100%**	**100%**	
5/1/2010	**through**	**10/31/2010**																					
B4D	0.05	183	69	114	62%	0.03	12/02/10 - 12/16/2010	12/16/2010	NA	402	NA	140	NA	1.50E-04		5.24E-05	NA	0.05	NA	0.02	0%	6%	NA
C2D	0.85	183	8	175	96%	0.81	12/02/10 - 12/16/2010	12/16/2010	NA	65	NA	6.3	NA	6.36E-04		6.15E-05	NA	0.23	NA	0.02	1%	7%	NA
C4D	1.00	183	25	158	86%	0.86	12/02/10 - 12/16/2010	12/16/2010	NA	106	NA	29	NA	1.10E-03		3.01E-04	NA	0.40	NA	0.11	2%	33%	NA
C18D	1.09	183	73	110	60%	0.66	12/02/10 - 12/16/2010	12/16/2010	NA	5198	NA	46	NA	4.09E-02		3.62E-04	NA	14.92	NA	0.13	77%	40%	NA
C19D	0.06	183	27	156	85%	0.05	12/02/10 - 12/16/2010	12/16/2010	NA	20	NA	9.3	NA	1.22E-05		5.71E-06	NA	0.00	NA	0.00	0%	1%	NA
C30	0.06	183	18	165	90%	0.05	12/02/10 - 12/16/2010	12/16/2010	NA	4124	NA	11	NA	2.68E-03		7.14E-06	NA	0.98	NA	0.00	5%	1%	NA
BG-1	0.40	183	0	183	100%	0.40	12/02/10 - 12/16/2010	12/16/2010	NA	1578	NA	23		7.58E-03		1.10E-04	NA	2.77	NA	0.04	14%	12%	NA
TOTAL=	**3.51**											**TOTAL=**		**5.30E-02**		**9.00E-04**		**19.30**		**0.30**	**100%**	**100%**	
11/1/2010	**through**	**4/30/2011**																					
B4D	0.61	180	16	164	91%	0.56	3/21/2011 - 4/7/2011	4/6/2011	NA	397	NA	74	NA	2.65E-03		4.94E-04	NA	0.97	NA	0.18	8%	45%	NA
C2D	0.54	180	4	176	98%	0.53	3/21/2011 - 4/7/2011	4/6/2011	NA	111	NA	2.7	NA	7.02E-04		1.71E-05	NA	0.26	NA	0.01	2%	2%	NA
C4D	0.57	180	9	171	95%	0.54	3/21/2011 - 4/7/2011	4/6/2011	NA	602	NA	26	NA	3.91E-03		1.69E-04	NA	1.43	NA	0.06	11%	15%	NA
C18D	0.63	180	19	161	89%	0.56	3/21/2011 - 4/7/2011	4/6/2011	NA	1996	NA	21	NA	1.35E-02		1.42E-04	NA	4.93	NA	0.05	38%	13%	NA
C19D	0.57	180	38	142	79%	0.45	3/21/2011 - 4/7/2011	4/6/2011	NA	8.77	NA	9.2	NA	4.73E-05		4.97E-05	NA	0.02	NA	0.02	0%	5%	NA
C30	0.70	180	13	167	93%	0.65	3/21/2011 - 4/7/2011	4/6/2011	NA	827	NA	9.1	NA	6.45E-03		7.10E-05	NA	2.35	NA	0.03	19%	6%	NA
BG-1	1.30	180	14	166	92%	1.20	3/21/2011 - 4/7/2011	4/6/2011	NA	492	NA	11		7.09E-03		1.58E-04	NA	2.59	NA	0.06	21%	14%	NA
TOTAL=	**4.92**											**TOTAL=**		**3.44E-02**		**1.10E-03**		**11.58**		**0.23**	**100%**	**100%**	
5/1/2011	**through**	**10/31/2011**																					
B4D	1.11	183	59	124	68%	0.75	9/22/2011 - 10/6/2011	10/5/2011	NA	676	NA	32	NA	6.10E-03		2.89E-04	NA	2.23	NA	0.11	17%	29%	NA
C2D	1.01	183	0	183	100%	1.01	9/22/2011 - 10/6/2011	10/5/2011	NA	59	NA	2.9	NA	7.21E-04		3.52E-05	NA	0.26	NA	0.01	2%	3%	NA
C4D	0.95	183	25	158	86%	0.82	9/22/2011 - 10/6/2011	10/5/2011	NA	480	NA	21	NA	4.72E-03		2.07E-04	NA	1.72	NA	0.08	13%	20%	NA
C18D	1.08	183	38	145	79%	0.86	9/22/2011 - 10/6/2011	10/5/2011	NA	1507	NA	14	NA	1.55E-02		1.44E-04	NA	5.65	NA	0.05	44%	14%	NA
C19D	1.14	183	0	183	100%	1.14	9/22/2011 - 10/6/2011	10/5/2011	NA	21	NA	8.1	NA	2.92E-04		1.11E-04	NA	0.11	NA	0.04	1%	11%	NA
C30	1.27	183	0	183	100%	1.27	9/22/2011 - 10/6/2011	10/5/2011	NA	438	NA	7.9	NA	6.69E-03		1.20E-04	NA	2.44	NA	0.04	19%	12%	NA
BG-1	1.06	183	8	175	96%	1.01	7/1/2011 - 9/6/2011	10/3/2011	NA	91	NA	8.5		1.11E-03		1.03E-04	NA	0.40	NA	0.04	3%	10%	NA
TOTAL=	**7.62**											**TOTAL=**		**3.51E-02**		**1.01E-03**		**10.58**		**0.26**	**100%**	**100%**	
11/1/2011	**through**	**4/30/2012**																					
B4DR	0.17	181	34	147	81%	0.14	3/15/12 - 4/12/12	4/2/2012	1935	NA	810	14	3.30E-03	NA	1.38E-03	2.38E-05	1.20	NA	0.50	0.01	6%	2%	10%
C2D	1.21	181	4	177	98%	1.19	3/12/12 - 4/12/12	4/2/2012	84	NA	0	3.4	1.20E-03	NA	0.00E+00	4.84E-05	0.44	NA	0.00	0.02	2%	4%	0%
C4D	1.00	181	4	177	98%	0.97	3/12/12 - 4/12/12	4/2/2012	1222	NA	130	25	1.43E-02	NA	1.52E-03	2.92E-04	5.22	NA	0.55	0.11	27%	27%	11%
C18D	1.29	181	4	177	98%	1.27	3/12/12 - 4/12/12	4/2/2012	1122	NA	120	24	1.70E-02	NA	1.82E-03	3.65E-04	6.22	NA	0.67	0.13	32%	34%	14%
C19D	0.93	181	22	159	88%	0.82	3/12/12 - 4/12/12	4/2/2012	284	NA	270	8.6	2.80E-03	NA	2.66E-03	8.46E-05	1.02	NA	0.97	0.03	5%	8%	20%
C30	0.98	181	4	177	98%	0.96	3/12/12 - 4/12/12	4/2/2012	779	NA	360	9.8	8.99E-03	NA	4.15E-03	1.13E-04	3.28	NA	1.52	0.04	17%	10%	31%
BG-1	1.49	181	34	147	81%	1.21	3/12/12 - 4/12/12	4/3/2012	347	NA	120	11	5.04E-03	NA	1.74E-03	1.60E-04	1.84	NA	0.64	0.06	10%	15%	13%
TOTAL=	**7.08**											**TOTAL=**	**5.27E-02**		**1.33E-02**	**1.09E-03**	**19.22**		**4.85**	**0.39**	**100%**	**100%**	**100%**
5/1/2012	**through**	**10/31/2012**																					
B4DR	0.10	183	61	122	67%	0.07	8/30/2012 - 10/1/2012	10/2/2012	1766	NA	770	22	1.48E-03	NA	6.45E-04	1.84E-05	0.54	NA	0.24	0.01	4%	2%	6%
C2D	1.15	183	53	130	71%	0.82	9/10/2012 - 10/1/2012	10/2/2012	39	NA	0	3.0	3.83E-04	NA	0.00E+00	2.94E-05	0.14	NA	0.00	0.01	1%	2%	0%
C4D	0.84	183	7	176	96%	0.81	8/30/2012 - 10/1/2012	10/2/2012	680	NA	240	47	6.59E-03	NA	2.33E-03	4.55E-04	2.41	NA	0.85	0.17	18%	37%	21%
C18D	0.62	183	0	183	100%	0.62	9/24/2012 - 10/1/2012	10/2/2012	1371	NA	89	26	1.02E-02	NA	6.65E-04	1.94E-04	3.74	NA	0.24	0.07	27%	16%	6%
C19D	0.66	183	8	175	96%	0.63	9/10/2012 - 10/1/2012	10/2/2012	259	NA	230	14	1.96E-03	NA	1.74E-03	1.06E-04	0.72	NA	0.64	0.04	5%	9%	16%
C20D	NA	NA	NA	NA	NA	NA	NA	10/2/2012	309	NA	280	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C30	1.05	183	7	176	96%	1.01	9/10/2012 - 10/1/2012	10/2/2012	743	NA	240	9.2	9.01E-03	NA	2.91E-03	1.12E-04	3.29	NA	1.06	0.04	24%	9%	28%
BG-1	2.13	183	0	183	100%	2.13	9/27/2012 - 10/1/2012	10/2/2012	306	NA	110	12	7.83E-03	NA	2.82E-03	3.07E-04	2.86	NA	1.03	0.11	21%	25%	25%
TOTAL=	**6.56**											**TOTAL=**	**3.75E-02**		**1.11E-02**	**1.22E-03**	**13.70**		**4.06**	**0.44**	**100%**	**100%**	**100%**

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Well	Avg Flow prior to sample (GPM)	Days in Period	(hide) Days System Down	Days of System Operation	Percent Operation (%)	Adjusted Flow Rate (GPM)	Average Flow Period	Sample Date	Total Detected VOC Concentration (Revised analyte list) (ug/l)	Total Detected VOC Concentration (Historical analyte list) (ug/l)	1,4-Dioxane Concentration (ug/l)	BCEE Concentration (ug/l)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/day)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/day)	Adjusted 1,4-Dioxane Mass Removal (lb/day)	Adjusted BCEE Mass Removal (lb/day)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/year)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/year)	Adjusted 1,4-Dioxane Mass Removal (lb/year)	Adjusted BCEE Mass Removal (lb/year)	TVOC Mass Removal (% of Total)	BCEE Mass Removal (% of Total)	1,4-Dioxane Mass Removal (% of Total)
11/1/2012	**through**	**4/30/2013**																					
B4DR	0.27	180	109	71	39%	0.11	3/4/2013 - 3/18/2013	3/19/2013	1554.30	NA	300	22	1.99E-03	NA	3.84E-04	2.81E-05	0.73	NA	0.14	0.01	3%	2%	2%
C2D	1.36	180	0	180	100%	1.36	3/4/2013 - 3/18/2013	3/19/2013	136.14	NA	56	2.7	2.22E-03	NA	9.14E-04	4.41E-05	0.81	NA	0.33	0.02	3%	3%	4%
C4D	1.15	180	0	180	100%	1.15	3/4/2013 - 3/18/2013	3/19/2013	1020.46	NA	100	15	1.41E-02	NA	1.38E-03	2.07E-04	5.14	NA	0.50	0.08	22%	16%	7%
C18D	1.00	180	0	180	100%	1.00	3/4/2013 - 3/18/2013	3/19/2013	1422.60	NA	110	20	1.71E-02	NA	1.32E-03	2.40E-04	6.23	NA	0.48	0.09	27%	19%	6%
C19D	1.35	180	0	180	100%	1.35	3/4/2013 - 3/18/2013	3/19/2013	181.53	NA	160	8.0	2.94E-03	NA	2.59E-03	1.30E-04	1.07	NA	0.95	0.05	5%	10%	13%
C20D	2.55	180	13	167	93%	2.37	3/4/2013 - 3/18/2013	3/20/2013	169.88	NA	160	5.1	4.83E-03	NA	4.54E-03	1.45E-04	1.76	NA	1.66	0.05	8%	11%	22%
C30	1.75	180	0	180	100%	1.75	3/4/2013 - 3/18/2013	3/19/2013	729.42	NA	310	8.6	1.53E-02	NA	6.51E-03	1.81E-04	5.59	NA	2.38	0.07	24%	14%	32%
BG-1	0.76	180	22	158	88%	0.67	3/4/2013 - 3/18/2013	3/19/2013	694.29	NA	380	38	5.56E-03	NA	3.04E-03	3.04E-04	2.03	NA	1.11	0.11	9%	34%	15%
TOTAL=	**10.19**											**TOTAL=**	**6.40E-02**		**2.07E-02**	**1.28E-03**	**23.36**		**7.55**	**0.48**	**100%**	**100%**	**100%**
5/1/2013	**through**	**10/31/2013**																					
B4DR	0.32	183	44	139	76%	0.25	9/16/2013 - 10/3/2013	10/4/2013	1873.09	NA	580	51	5.52E-03	NA	1.71E-03	1.50E-04	2.01	NA	0.62	0.05	10%	12%	8%
C2D	1.08	183	0	183	100%	1.08	9/16/2013 - 10/3/2013	10/4/2013	119.39	NA	53	3.2	1.55E-03	NA	6.87E-04	4.15E-05	0.57	NA	0.25	0.02	3%	3%	3%
C4D	0.95	183	4	179	98%	0.93	9/16/2013 - 10/3/2013	10/4/2013	1062.31	NA	88	20	1.19E-02	NA	9.84E-04	2.24E-04	4.33	NA	0.36	0.08	21%	18%	5%
C18D	1.07	183	42	141	77%	0.83	9/16/2013 - 10/3/2013	10/4/2013	1830.45	NA	210	28	1.82E-02	NA	2.09E-03	2.78E-04	6.64	NA	0.76	0.10	37%	22%	10%
C19D	1.24	183	10	173	95%	1.17	9/16/2013 - 10/3/2013	10/4/2013	539.76	NA	520	9.8	7.58E-03	NA	7.31E-03	1.38E-04	2.77	NA	2.67	0.05	13%	11%	32%
C20D	2.49	183	27	156	85%	2.12	9/19/2013 - 10/7/2013	10/7/2013	262.47	NA	250	7.5	6.69E-03	NA	6.37E-03	1.91E-04	2.44	NA	2.32	0.07	12%	15%	30%
C30	0.09	183	6	177	97%	0.09	9/3/2013 - 10/3/2013	10/4/2013	1136.02	NA	220	15	1.17E-03	NA	2.26E-04	1.54E-05	0.43	NA	0.08	0.01	2%	1%	1%
BG-1	1.05	183	12	171	93%	0.98	9/19/2013 - 10/7/2013	10/7/2013	344.97	NA	140	17	4.06E-03	NA	1.65E-03	2.00E-04	1.48	NA	0.60	0.07	7%	16%	8%
TOTAL=	**8.29**											**TOTAL=**	**5.66E-02**		**2.10E-02**	**1.24E-03**	**20.67**		**7.66**	**0.45**	**100%**	**100%**	**100%**
11/1/2013	**through**	**4/30/2014**																					
B4DR	0.00	180	155	25	14%	NA	10/3/2013 - 3/27/2014	NS	NA	NA	NA	NA		NA		NA	NA	NA	0.00	NA	NA	NA	0%
C2D	0.62	180	9	171	95%	0.59	3/6/2014 - 3/24/2014	3/25/2014	88.46	NA	24	2.3	6.29E-04	NA	1.71E-04	1.64E-05	0.23	NA	0.06	0.01	1%	3%	1%
C4D	0.99	180	9	171	95%	0.94	3/10/2014 - 3/27/2014	3/28/2014	1074.65	NA	67	0.19	1.22E-02	NA	7.59E-04	2.15E-06	4.44	NA	0.28	0.00	18%	0%	4%
C18D	1.04	180	9	171	95%	0.99	3/10/2014 - 3/27/2014	3/28/2014	2536.12	NA	70	22	3.01E-02	NA	8.30E-04	2.61E-04	10.98	NA	0.30	0.10	44%	41%	5%
C19D	1.01	180	13	167	93%	0.93	3/10/2014 - 3/27/2014	3/28/2014	193.20	NA	180	9.3	2.17E-03	NA	2.02E-03	1.04E-04	0.79	NA	0.74	0.04	3%	16%	11%
C20D	3.02	180	28	152	84%	2.55	3/10/2014 - 3/27/2014	3/28/2014	330.50	NA	320	4.3	1.01E-02	NA	9.78E-03	1.31E-04	3.69	NA	3.57	0.05	15%	21%	54%
C30	0.97	180	23	157	87%	0.84	3/10/2014 - 3/27/2014	3/28/2014	1208.54	NA	390	7.3	1.23E-02	NA	3.95E-03	7.40E-05	4.47	NA	1.44	0.03	18%	12%	22%
BG-1	0.68	180	64	116	64%	0.44	3/10/2014 - 3/27/2014	3/28/2014	266.09	NA	91	9.3	1.39E-03	NA	4.75E-04	4.86E-05	0.51	NA	0.17	0.02	2%	8%	3%
TOTAL=	**8.32**											**TOTAL=**	**6.88E-02**		**1.80E-02**	**6.38E-04**	**25.11**		**6.56**	**0.25**	**100%**	**100%**	**100%**
5/1/2014	**through**	**10/31/2014**																					
B4DR	0.15	183	92	91	50%	0.08	9/15/2014-10/13/2014	10/13/2014	2916.21	NA	1100	85	2.66E-03	NA	1.00E-03	7.77E-05	0.97	NA	0.37	0.03	4%	6%	3%
C2D	1.57	183	0	183	100%	1.57	9/29/2014-10/13/2014	10/13/2014	116.43	NA	89	1.8	2.20E-03	NA	1.68E-03	3.40E-05	0.80	NA	0.61	0.01	3%	3%	6%
C4D	0.39	183	38	145	79%	0.31	8/4/2014-10/13/2014	10/14/2014	438.10	NA	170	42	1.62E-03	NA	6.29E-04	1.55E-04	0.59	NA	0.23	0.06	3%	13%	2%
C18D	0.75	183	10	173	95%	0.70	9/29/2014-10/13/2014	10/13/2014	975.24	NA	95	29	8.25E-03	NA	8.03E-04	2.45E-04	3.01	NA	0.29	0.09	13%	21%	3%
C19D	1.43	183	0	183	100%	1.43	9/29/2014-10/13/2014	10/13/2014	233.60	NA	220	6.4	4.02E-03	NA	3.79E-03	1.10E-04	1.47	NA	1.38	0.04	6%	9%	13%
C20D	3.31	183	2	181	99%	3.27	9/29/2014-10/13/2014	10/14/2014	662.24	NA	420	7.2	2.60E-02	NA	1.65E-02	2.83E-04	9.50	NA	6.02	0.10	41%	24%	55%
C30	1.44	183	0	183	100%	1.44	9/29/2014-10/13/2014	10/13/2014	869.36	NA	220	11	1.51E-02	NA	3.81E-03	1.91E-04	5.50	NA	1.39	0.07	24%	16%	13%
BG-1	0.98	183	18	165	90%	0.88	9/29/2014-10/13/2014	10/14/2014	329.29	NA	190	9.4	3.49E-03	NA	2.02E-03	9.97E-05	1.27	NA	0.74	0.04	6%	8%	7%
TOTAL=	**10.03**											**TOTAL=**	**6.33E-02**		**3.02E-02**	**1.20E-03**	**23.11**		**11.03**	**0.44**	**100%**	**100%**	**100%**
11/1/2014	**through**	**4/30/2015**																					
B4DR	0.23	180	31	146	81%	0.19	1/22/15-3/26/15	3/30/2015	1341.00	NA	110	210	3.00E-03	NA	2.46E-04	4.69E-04	1.09	NA	0.09	0.17	3%	28%	1%
C2D	1.16	180	0	180	100%	1.16	3/12/15-3/26/15	3/30/2015	67.77	NA	19	2	9.42E-04	NA	2.64E-04	2.78E-05	0.34	NA	0.10	0.01	1%	2%	1%
C4D	0.90	180	0	180	100%	0.90	3/12/15-3/26/15	3/30/2015	1293.67	NA	54	31	1.39E-02	NA	5.82E-04	3.34E-04	5.09	NA	0.21	0.12	15%	20%	2%
C18D	1.19	180	0	180	100%	1.19	3/12/15-3/26/15	3/30/2015	3052.27	NA	77	21	4.34E-02	NA	1.10E-03	2.99E-04	15.85	NA	0.40	0.11	46%	18%	4%
C19D	1.04	180	0	180	100%	1.04	3/12/15-3/26/15	3/30/2015	169.14	NA	160	7.8	2.12E-03	NA	2.01E-03	9.78E-05	0.77	NA	0.73	0.04	2%	6%	8%
C20D	3.38	180	0	180	100%	3.38	3/12/15-3/26/15	3/30/2015	423.20	NA	400	5.2	1.72E-02	NA	1.62E-02	2.11E-04	6.26	NA	5.92	0.08	18%	13%	53%
C30	1.13	180	0	180	100%	1.13	3/12/15-3/26/15	3/30/2015	892.53	NA	330	8.6	1.21E-02	NA	4.48E-03	1.17E-04	4.42	NA	1.63	0.04	13%	7%	17%
BG-1	0.61	180	10	170	94%	0.57	3/12/15-3/26/15	3/30/2015	329.82	NA	140	16	2.27E-03	NA	9.62E-04	1.10E-04	0.83	NA	0.35	0.04	2%	7%	4%
TOTAL=	**9.63**											**TOTAL=**	**9.49E-02**		**2.58E-02**	**1.66E-03**	**34.65**		**9.43**	**0.61**	**100%**	**100%**	**100%**
5/1/2015	**through**	**10/31/2015**																					
B4DR	0.14	183	0	183	100%	0.14	7/20/15-9/21/15	9/30/2015	2099.39	NA	82	95	3.52E-03	NA	1.37E-04	1.59E-04	1.28	NA	0.05	0.06	5%	18%	1%
C2D	0.86	183	0	183	100%	0.86	9/08/15-9/21/15	9/30/2015	28.28	NA	12	1.4	2.92E-04	NA	1.24E-04	1.44E-05	0.11	NA	0.05	0.01	0%	2%	1%
C4D	1.25	183	7	176	96%	1.20	9/08/15-9/21/15	9/30/2015	167.13	NA	130	6.4	2.40E-03	NA	1.87E-03	9.20E-05	0.88	NA	0.68	0.03	3%	10%	7%
C18D	0.72	183	0	183	100%	0.72	9/08/15-9/21/15	9/30/2015	3498.40	NA	71	18	3.02E-02	NA	6.14E-04	1.56E-04	11.04	NA	0.22	0.06	43%	17%	2%
C19D	0.93	183	0	183	100%	0.93	9/08/15-9/21/15	9/30/2015	131.23	NA	120	5.2	1.47E-03	NA	1.35E-03	5.83E-05	0.54	NA	0.49	0.02	2%	6%	5%
C20D	3.33	183	3	180	98%	3.28	9/08/15-9/21/15	9/30/2015	376.76	NA	360	5.9	1.48E-02	NA	1.42E-02	2.32E-04	5.41	NA	5.17	0.08	21%	26%	56%
C30	1.29	183	26	157	86%	1.11	9/08/15-9/21/15	9/30/2015	731.10	NA	320	10	9.72E-03	NA	4.26E-03	1.33E-04	3.55	NA	1.55	0.05	14%	15%	16%
BG-1	0.54	183	3	180	98%	0.53	9/08/15-9/21/15	9/30/2015	1132.90	NA	510	10	7.22E-03	NA	3.25E-03	6.38E-05	2.64	NA	1.19	0.02	10%	7%	13%
TOTAL=	**9.06**											**TOTAL=**	**6.97E-02**		**2.58E-02**	**9.08E-04**	**25.45**		**9.40**	**0.33**	**100%**	**100%**	**100%**
11/1/2015	**through**	**4/30/2016**																					
B4DR	0.05	181	0	106	59%	0.03	3/24/16-4/7/16	4/7/2016	429.48	NA	41	180	1.51E-04	NA	1.44E-05	6.33E-05	0.06	NA	0.01	0.02	0%	2%	0%
C2D	1.22	181	0	181	100%	1.22	3/24/16-4/7/16	4/7/2016	25.61	NA	13	2.3	3.75E-04	NA	1.90E-04	3.37E-05	0.14	NA	0.07	0.01	1%	1%	1%
C4D	1.04	181	7	169	93%	0.97	3/24/16-4/7/16	4/7/2016	1238.14	NA	60	150	1.44E-02	NA	6.99E-04	1.75E-03	5.27	NA	0.26	0.64	26%	67%	4%
C18D	0.63	181	0	181	100%	0.63	3/24/16-4/7/16	4/7/2016	2262.80	NA	69	19	1.71E-02	NA	5.22E-04	1.44E-04	6.25	NA	0.19	0.05	31%	6%	3%
C19D	1.08	181	0	176	97%	1.05	3/24/16-4/7/16	4/7/2016	242.39	NA	230	7.7	3.06E-03	NA	2.90E-03	9.71E-05	1.12	NA	1.06	0.04	6%	4%	17%
C20D	3.31	181	3	180	99%	3.29	3/24/16-4/7/16	4/7/2016	240.53	NA	220	4.4	9.51E-03	NA	8.69E-03	1.74E-04	3.47	NA	3.17	0.06	17%	7%	50%
C30	0.94	181	26	180	99%	0.93	3/24/16-4/7/16	4/7/2016	583.38	NA	200	6.7	6.55E-03	NA	2.24E-03	7.52E-05	2.39	NA	0.82	0.03	12%	3%	13%
BG-1	0.73	181	3	177	98%	0.72	3/28/16-4/11/16	4/12/2016	384.58	NA	260	31	3.31E-03	NA	2.24E-03	2.67E-04	1.21	NA	0.82	0.10	6%	10%	13%
TOTAL=	**9.00**											**TOTAL=**	**5.45E-02**		**1.75E-02**	**2.60E-03**	**19.91**		**6.40**	**0.95**	**100%**	**100%**	**100%**

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Well	Avg Flow prior to sample (GPM)	Days in Period	(hide) Days System Down	Days of System Operation	Percent Operation (%)	Adjusted Flow Rate (GPM)	Average Flow Period	Sample Date	Total Detected VOC Concentration (Revised analyte list) (ug/l)	Total Detected VOC Concentration (Historical analyte list) (ug/l)	1,4-Dioxane Concentration (ug/l)	BCEE Concentration (ug/l)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/day)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/day)	Adjusted 1,4-Dioxane Mass Removal (lb/day)	Adjusted BCEE Mass Removal (lb/day)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/year)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/year)	Adjusted 1,4-Dioxane Mass Removal (lb/year)	Adjusted BCEE Mass Removal (lb/year)	TVOC Mass Removal (% of Total)	BCEE Mass Removal (% of Total)	1,4-Dioxane Mass Removal (% of Total)
5/1/2016	**through**	**10/31/2016**																					
B4DR	0.19	183	101	82	45%	0.09	9/15/16-9/29/16	9/30/2016	940.27	NA	290	15	9.81E-04	NA	3.03E-04	1.56E-05	0.36	NA	0.11	0.01	3%	1%	3%
C2D	1.04	183	11	172	94%	0.98	9/15/16-9/29/16	9/30/2016	89.18	NA	43	3.1	1.05E-03	NA	5.05E-04	3.64E-05	0.38	NA	0.18	0.01	3%	3%	5%
C4D	0.88	183	0	183	100%	0.88	9/15/16-9/29/16	9/30/2016	1220.77	NA	58	76	1.28E-02	NA	6.10E-04	7.99E-04	4.69	NA	0.22	0.29	37%	72%	6%
C18D	0.52	183	0	183	100%	0.52	9/15/16-9/29/16	9/30/2016	986.03	NA	290	13	6.15E-03	NA	1.81E-03	8.11E-05	2.25	NA	0.66	0.03	18%	7%	18%
C19D	0.38	183	0	183	100%	0.38	9/29/16-10/13/16	10/13/2016	171.72	NA	160	7.9	7.85E-04	NA	7.32E-04	3.61E-05	0.29	NA	0.27	0.01	2%	3%	8%
C20D	0.90	183	14	169	92%	0.83	9/19/16-10/3/16	10/4/2016	324.39	NA	310	4.0	3.25E-03	NA	3.10E-03	4.00E-05	1.18	NA	1.13	0.01	9%	4%	32%
C30	0.79	183	0	183	100%	0.79	9/15/16-9/29/16	9/30/2016	920.70	NA	250	9.3	8.71E-03	NA	2.36E-03	8.79E-05	3.18	NA	0.86	0.03	25%	8%	24%
BG-1	0.53	183		183	100%	0.53	9/15/16-9/29/16	9/30/2016	90.93	NA	59	2.3	5.82E-04	NA	3.78E-04	1.47E-05	0.21	NA	0.14	0.01	2%	1%	4%
TOTAL=	**5.23**											**TOTAL=**	**3.43E-02**		**9.80E-03**	**1.11E-03**	**12.54**		**3.57**	**0.40**	**100%**	**100%**	**100%**
11/1/2016	**through**	**4/30/2017**																					
B4DR	0.11	180	4	176	98%	0.11	3/13/17-3/27/17	3/27/2017	4369.60	NA	140	13	5.55E-03	NA	1.78E-04	1.65E-05	2.02	NA	0.06	0.01	8%	2%	1%
C2D	0.04	180	26	154	86%	0.03	3/13/17-3/27/17	3/27/2017	76.42	NA	27	1.7	2.84E-05	NA	1.00E-05	6.32E-07	0.01	NA	0.00	0.00	0%	0%	0%
C4D	0.21	180	11	169	94%	0.20	3/13/17-3/27/17	3/27/2017	677.60	NA	82	95	1.59E-03	NA	1.93E-04	2.23E-04	0.58	NA	0.07	0.08	2%	27%	1%
C18D	0.02	180	68	112	62%	0.01	3/13/17-3/27/17	3/27/2017	3730.78	NA	150	10	5.81E-04	NA	2.33E-05	1.56E-06	0.21	NA	0.01	0.00	1%	0%	0%
C19D	0.08	180	7	173	96%	0.08	3/13/17-3/27/17	3/27/2017	199.09	NA	140	24	1.87E-04	NA	1.31E-04	2.25E-05	0.07	NA	0.05	0.01	0%	3%	1%
C20D	3.85	180	0	180	100%	3.85	3/13/17-3/27/17	3/29/2017	285.46	NA	230	6.6	1.32E-02	NA	1.06E-02	3.05E-04	4.81	NA	3.88	0.11	20%	38%	72%
C30	0.20	180	19	161	89%	0.18	3/13/17-3/27/17	3/27/2017	3193.07	NA	140	9.2	6.84E-03	NA	3.00E-04	1.97E-05	2.50	NA	0.11	0.01	10%	2%	2%
BG-1	4.54	180	0	180	100%	4.54	3/13/17-3/27/17	3/27/2017	716.32	NA	60	4.6	3.90E-02	NA	3.27E-03	2.51E-04	14.25	NA	1.19	0.09	58%	30%	22%
TOTAL=	**9.04**											**TOTAL=**	**6.70E-02**		**1.47E-02**	**8.39E-04**	**24.45**		**5.37**	**0.31**	**100%**	**100%**	**100%**
5/1/2017	**through**	**10/31/2017**																					
B4DR	0.06	183	22	161	88%	0.05	9/28/17-10/12/17	10/12/2017	2683.20	NA	30	16	1.73E-03	NA	1.93E-05	1.03E-05	0.63	NA	0.01	0.00	2%	1%	0%
C2D	0.15	183	18	165	90%	0.13	9/28/17-10/12/17	10/12/2017	247.66	NA	150	16.0	3.94E-04	NA	2.38E-04	2.54E-05	0.14	NA	0.09	0.01	0%	1%	1%
C4D	0.00	183	144	39	21%	0.00	9/28/17-10/12/17	10/12/2017	332.53	NA	79	94	0.00E+00	NA	0.00E+00	0.00E+00	0.00	NA	0.00	0.00	0%	0%	0%
C18D	0.41	183	5	178	97%	0.40	9/21/17-10/5/17	10/9/2017	4952.20	NA	120	16	2.36E-02	NA	5.72E-04	7.63E-05	8.62	NA	0.21	0.03	28%	4%	2%
C19D	0.76	183	0	183	100%	0.76	9/25/17-10/9/2017	10/9/2017	250.11	NA	210	17	2.29E-03	NA	1.92E-03	1.56E-04	0.84	NA	0.70	0.06	3%	8%	8%
C20D	3.67	183	0	183	100%	3.67	9/25/17-10/9/17	10/9/2017	432.56	NA	410	32.0	1.90E-02	NA	1.81E-02	1.41E-03	6.95	NA	6.59	0.51	22%	68%	65%
C30	0.54	183	8	175	96%	0.52	9/25/17-10/9/17	10/9/2017	4050.70	NA	200	12.0	2.53E-02	NA	1.25E-03	7.48E-05	9.22	NA	0.46	0.03	26%	4%	5%
BG-1	3.52	183	0	183	100%	3.52	9/21/17-10/5/17	10/9/2017	293.44	NA	45	7.1	1.24E-02	NA	1.90E-03	3.00E-04	4.53	NA	0.69	0.11	15%	15%	8%
TOTAL=	**9.11**											**TOTAL=**	**8.47E-02**		**2.40E-02**	**2.05E-03**	**30.93**		**8.75**	**0.75**	**100%**	**100%**	**100%**

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Prepared by:	BPC
Checked by:	TGB
Reviewed by:	TAM

Notes:
1) GPM = gallons per minute
2) VOC = volatile organic compound
3) ug/l = micrograms per liter (ppb)
4) BCEE = bis(2-chloroethyl) ether
5) TVOC = total volatile organic compounds
6) lb/day = pounds per day
7) lb/year = pounds per year
8) 'Average flow prior to sample' is calculated over an approximate two-week period with variability due to when totalizer readings are available, with the exception of the following:
- '5/4/2009 through 10/31/2009' period which is calculated over the entire duration due to limited available totalizer data
- '5/1/2011 through 10/31/2011' period for BG-1 is based on flow rate early in the semi-annual monitoring period prior to pump failure in late September 2011.
- '5/1/2012 through 10/31/2012' period for B4DR and C4D are based on a flow rate calculated over a period of approximately one-month due to pump shutdowns in the two-week period skewing the flow rate
- '5/1/2013 through 10/31/2013' period for C30 is based on a flow rate calculated over a period of approximately one-month due to pump shutdowns in the two-week period skewing the flow rate.
- '10/3/2013 through 3/27/2014' period for B4DR is based upon a flow rate calculated over a period of approximately five months due to pump shutdown.
- '4/28/2014 through 9/29/2014' period for C4D is based upon a flow rate calculated over a period of approximately four months due to pump shutdowns in the two-week period skewing the flow rate.
9) Adjusted flow rate is calculated using flow rate prior to sample collection and percent of system operation.
10) TVOC and BCEE mass removal rates are calculated using adjusted flow rates.
11) B4D was replaced by B4DR on January 19, 2012.
12) Total VOC prior to the April 2012 data is based on a historical VOC analyte list. Since that time, the analyte list was revised to include additional compounds, including 1,4-dioxane.
13) In April 2017, the VOC analyte list was revised to include 1,2,3-Trimethylbenzene, Dichlorofluoromethane and Indane.

Table 6
Well PW-1(U) Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

		System Startup																			
	Sample Month		**Nov-04**	**Jan-05**	**May-05**	**Jul-05**	**Oct-05**	**Apr-06**	**Jul-06**	**Oct-06**	**Jan-07**	**May-07**	**Oct-07**	**Jan-08**	**Apr-08**	**Jul-08**	**Oct-08**	**Jan-09**	**Apr-09**	**Jul-09**
	Sample Date		**11/3/2004**	**1/31/2005**	**5/2/2005**	**7/20/2005**	**10/27/2005**	**4/27/2006**	**7/11/2006**	**10/13/2006**	**1/10/2007**	**5/7/2007**	**10/1/2007**	**1/1/2008**	**4/1/2008**	**7/1/2008**	**10/1/2008**	**1/1/2009**	**4/1/2009**	**7/13/2009**
	Sampler		**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Golder**
Date of PW-1(U) totalizer reading		**10/28/2004**	11/5/2004	2/2/2005	5/2/2005	7/21/2005	11/3/2005	4/27/2006	7/10/2006	10/12/2006	1/10/2007	4/26/2007	10/1/2007	1/8/2008	4/2/2008	7/15/2008	9/25/2008	1/5/2009	3/25/2009	7/12/2009
PW-1(U) Totalizer Reading (NCC)	gal	**0**	189257	1824351	3775923	7129794	11076040	16932640	20085882	23875940	26443467	30852010	38824424	43129074	47051554	50533666	53833997	57254018	60456235	64458411
PW-1(U) Totalizer Reading (DS&G)	gal		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gallons pumped since last sample	gal	**0**	189257	1635094	1951572	3353871	3946246	5856600	3153242	3790058	2567527	4408543	7972414	4304650	3922480	3482112	3300331	3420021	3202217	4002176
Days since last sample	days	**0**	8	89	89	80	105	175	74	94	90	106	158	99	85	104	72	102	79	109
Average Flow Rate Since Last Sample	gpm	**0**		12.8	15.2	29.1	26.1	23.2	29.6	28.0	19.8	28.9	35.0	30.2	32.1	23.3	31.8	23.3	28.2	25.5
Targeted Volatile Organic Compounds																				
Benzene	ug/l	NA	150	350	230	150	180	250	260	260	240	250	220	140	160	140	81	120	130	110
Toluene	ug/l	NA	18	25	170	170	270	510	560	570	460	490	420	400	490	220	210	260	300	290
Ethylbenzene	ug/l	NA	95	150	160	85	100	120	140	140	110	96	63	59	75	39	41	47	66	64
Xylenes, Total	ug/l	NA	230	530	460	320	360	360	340	360	310	280	230	180	230	140	130	140	190	170
1,4-Dioxane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Targeted VOCs (BTEX)	ug/l	NA	493	1055	1020	725	910	1240	1300	1330	1120	1116	933	779	955	539	462	567	686	634
Total Analyzed VOCs (Total VOCs)	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (BTEX)	*lb/day*	NA	*0.00*	*0.16*	*0.19*	*0.25*	*0.29*	*0.35*	*0.46*	*0.45*	*0.27*	*0.39*	*0.39*	*0.28*	*0.37*	*0.15*	*0.18*	*0.16*	*0.23*	*0.19*
Estimated Mass Removal (BTEX)	*lb/quarter*	NA	*0*	*15*	*17*	*23*	*26*	*31*	*42*	*40*	*24*	*35*	*35*	*25*	*33*	*14*	*16*	*14*	*21*	*17*
Estimated Mass Removal (BTEX)	***lb/year***	NA	***0***	***58***	***67***	***91***	***103***	***125***	***166***	***161***	***96***	***139***	***141***	***102***	***132***	***54***	***64***	***57***	***83***	***70***
Estimated Mass Removal (1,4-Dioxane)	*lb/day*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (1,4-Dioxane)	*lb/quarter*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (1,4-Dioxane)	***lb/year***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (Total VOC)	***lb/day***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (Total VOC)	***lb/quarter***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (Total VOC)	***lb/year***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Targeted Semi-Volatile Organic Compounds																				
Bis(2-chloroethyl) Ether	ug/l	NA	74	96	24	28	43	44	48	45	37	44	40	31	37	43	31	34	27	31
Estimated Mass Removal	*lb/day*	NA	*0.000*	*0.015*	*0.004*	*0.010*	*0.013*	*0.012*	*0.017*	*0.015*	*0.009*	*0.015*	*0.017*	*0.011*	*0.014*	*0.012*	*0.012*	*0.010*	*0.009*	*0.009*
Estimated Mass Removal	*lb/quarter*	NA	*0.0*	*1.3*	*0.39*	*0.88*	*1.2*	*1.1*	*1.5*	*1.4*	*0.8*	*1.4*	*1.5*	*1.0*	*1.3*	*1.1*	*1.1*	*0.9*	*0.82*	*0.9*
Estimated Mass Removal	***lb/year***	NA	***0.0***	***5.3***	***1.6***	***3.5***	***4.8***	***4.4***	***6.1***	***5.4***	***3.2***	***5.5***	***6.1***	***4.0***	***5.1***	***4.3***	***4.3***	***3.4***	***3.3***	***3.4***

Table 6
Well PW-1(U) Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

	Sample Month	Oct-09	Apr-10	Jul-10	Oct-10	Apr-11	Oct-11	Feb-12	Apr-12	Oct-12	Mar-13	Oct-13	Apr-14	Oct-14	Mar-15	Oct-15	Apr-16	Sep-16	Apr-17	Oct-17
	Sample Date	**10/13/2009**	**4/14/2010**	**7/8/2010**	**10/13/2010**	**4/11/2011**	**10/6/2011**	**2/23/2012**	**4/4/2012**	**10/2/2012**	**3/19/2013**	**9/30/2013**	**4/2/2014**	**9/30/2014**	**3/30/2015**	**9/28/2015**	**4/7/2016**	**9/30/2016**	**4/11/2017**	**10/9/2017**
	Sampler	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**
Date of PW-1(U) totalizer reading		10/12/2009	4/12/2010	7/15/2010	10/13/2010	4/26/2011	10/6/2011	2/17/2012	4/16/2012	10/4/2012	4/17/2013	9/25/2013	4/2/2014	9/30/2014	3/30/2015	9/30/2015	4/7/2016	9/29/2016	4/11/2017	10/9/2017
PW-1(U) Totalizer Reading (NCC)	gal	67732261	74703485	78349021	81392565	87701433	93961997	98241721	100496869	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-1(U) Totalizer Reading (DS&G)	gal	NA	NA	NA	NA	NA	NA	46351520	48266516	753247	7393803	13670142	9439024	19286181	28467313	38013099	47798444	56115498	65482679	74114433
Gallons pumped since last sample	gal	3273850	6971224	3645536	3043544	6308868	6260564	4279724	2255148	4837281	6640556	6276339	9439024	9847157	9181132	9545786	9785345	8317054	9367181	8631754
Days since last sample	days	92	182	94	90	195	163	134	59	183	195	161	167	181	181	184	190	175	194	181
Average Flow Rate Since Last Sample	gpm	24.7	26.6	26.9	23.5	22.5	26.7	22.2	26.5	18.4	23.7	27.1	39.3	37.8	35.2	36.0	35.8	33.0	33.5	33.1
Targeted Volatile Organic Compounds																				
Benzene	ug/l	120	96	88	93	58	90	61	74	50	38	38	35	37	30	28	21	22	14	14
Toluene	ug/l	250	170	180	150	27	67.5	75	98	65	24	15	2.4	1.5	ND	0.29	0.33	0.68	ND	ND
Ethylbenzene	ug/l	59	60	62	70	19	35.6	39	56	49	23	33	24	19	19	11	20	8.4	4.3	2.3
Xylenes, Total	ug/l	170	150	160	170	50	102	86	120	110	48	63	47	34	42	31	47	25	15	11
1,4-Dioxane	ug/l	NA	NA	NA	NA	NA	NA	NA	95	68	56	68	45	79	67	79	60	61	65	100
Total Targeted VOCs (BTEX)	ug/l	599	476	490	483	154	295	261	348	274	133	149	108	92	91	70	88	56	33	27
Total Analyzed VOCs (Total VOCs)	ug/l	NA	NA	NA	NA	NA	NA	NA	521	411	227	265	192	204	201	181	203	155	130[13]	157
Estimated Mass Removal (BTEX)	*lb/day*	*0.18*	*0.15*	*0.16*	*0.14*	*0.04*	*0.09*	*0.07*	*0.11*	*0.06*	*0.04*	*0.05*	*0.05*	*0.04*	*0.04*	*0.03*	*0.04*	*0.02*	*0.01*	*0.01*
Estimated Mass Removal (BTEX)	*lb/quarter*	*16*	*14*	*14*	*12*	*4*	*8*	*6*	*10*	*5*	*3*	*4*	*5*	*4*	*3*	*3*	*3*	*2*	*1*	*1*
Estimated Mass Removal (BTEX)	***lb/year***	***64***	***55***	***57***	***49***	***15***	***34***	***25***	***40***	***22***	***14***	***18***	***19***	***15***	***14***	***11***	***14***	***8.1***	***4.8***	***3.9***
Estimated Mass Removal (1,4-Dioxane)	*lb/day*	NA	NA	NA	NA	NA	NA	NA	*0.03*	*0.01*	*0.02*	*0.02*	*0.02*	*0.04*	*0.03*	*0.03*	*0.03*	*0.02*	*0.03*	*0.04*
Estimated Mass Removal (1,4-Dioxane)	*lb/quarter*	NA	NA	NA	NA	NA	NA	NA	*3*	*1*	*1*	*2*	*2*	*3*	*3*	*3*	*2*	*2*	*2*	*4*
Estimated Mass Removal (1,4-Dioxane)	***lb/year***	NA	NA	NA	NA	NA	NA	NA	***11***	***5.5***	***5.8***	***8.1***	***7.7***	***13***	***10***	***12***	***9.4***	***8.8***	***9.5***	***14.5***
Estimated Mass Removal (Total VOC)	***lb/day***	NA	NA	NA	NA	NA	NA	NA	*0.17*	*0.09*	*0.06*	*0.09*	*0.09*	*0.09*	*0.09*	*0.08*	*0.09*	*0.06*	*0.05*	*0.06*
Estimated Mass Removal (Total VOC)	***lb/quarter***	NA	NA	NA	NA	NA	NA	NA	*15*	*8*	*6*	*8*	*8*	*8*	*8*	*7*	*8*	*6*	*5*	*6*
Estimated Mass Removal (Total VOC)	***lb/year***	NA	NA	NA	NA	NA	NA	NA	***61***	***33***	***24***	***31***	***33***	***34***	***31***	***29***	***32***	***22***	***19***	***23***
Targeted Semi-Volatile Organic Compounds																				
Bis(2-chloroethyl) Ether	ug/l	25	31	24	23	15	26	26	24	23	14	14	13	15	13	16	15	11	11	10
Estimated Mass Removal	*lb/day*	*0.007*	*0.010*	*0.008*	*0.006*	*0.004*	*0.008*	*0.007*	*0.008*	*0.005*	*0.004*	*0.005*	*0.006*	*0.007*	*0.005*	*0.007*	*0.006*	*0.004*	*0.004*	*0.004*
Estimated Mass Removal	*lb/quarter*	*0.67*	*0.9*	*0.70*	*0.58*	*0.36*	*0.75*	*0.62*	*0.69*	*0.46*	*0.36*	*0.41*	*0.55*	*0.61*	*0.49*	*0.62*	*0.58*	*0.39*	*0.40*	*0.36*
Estimated Mass Removal	***lb/year***	***2.7***	***3.6***	***2.8***	***2.3***	***1.5***	***3.0***	***2.5***	***2.8***	***1.8***	***1.5***	***1.7***	***2.2***	***2.5***	***2.0***	***2.5***	***2.4***	***1.6***	***1.6***	***1.5***

Table 6
Individual LFExS Well Mass Removal Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Notes
1) lbs = pounds
2) gal = gallons
3) gpm = gallons per minute
4) VOC = volatile organic compounds
5) ug/l = micrograms per liter
6) NA= not applicable
7) NCC = New Castle County; operated extraction well PW-1(U) until October 15, 2012
8) DS&G = Delaware Sand and Gravel; operators of extraction well PW-1(U) since October 15, 2012
9) Targeted compounds excludes compounds that are not consistently detected
10) Historic PW-1(U) totalizer readings were provided to Golder on June 11, 2012 by Ruth; therefore, approximate flow rates were removed and historic mass removals were re-calculated. Prior calculations were based on a flow rate of 30 gpm
11) On September 9, 2012, a new totalizer was installed on PW-1(U). The last available totalizer reading prior to the change out was 52,350,550 gallons
12) On September 26, 2013, the power to the well PW-1(U) pump and totalizer were interrupted. The totalizer was reset and the equipment was restarted on October 17, 2013.
13) In April 2017, the VOC analyte list was revised to include 1,2,3-Trimethylbenzene, Dichlorofluoromethane and Indane.

Prepared by:	BPC
Checked by:	TGB
Reviewed by:	TAM

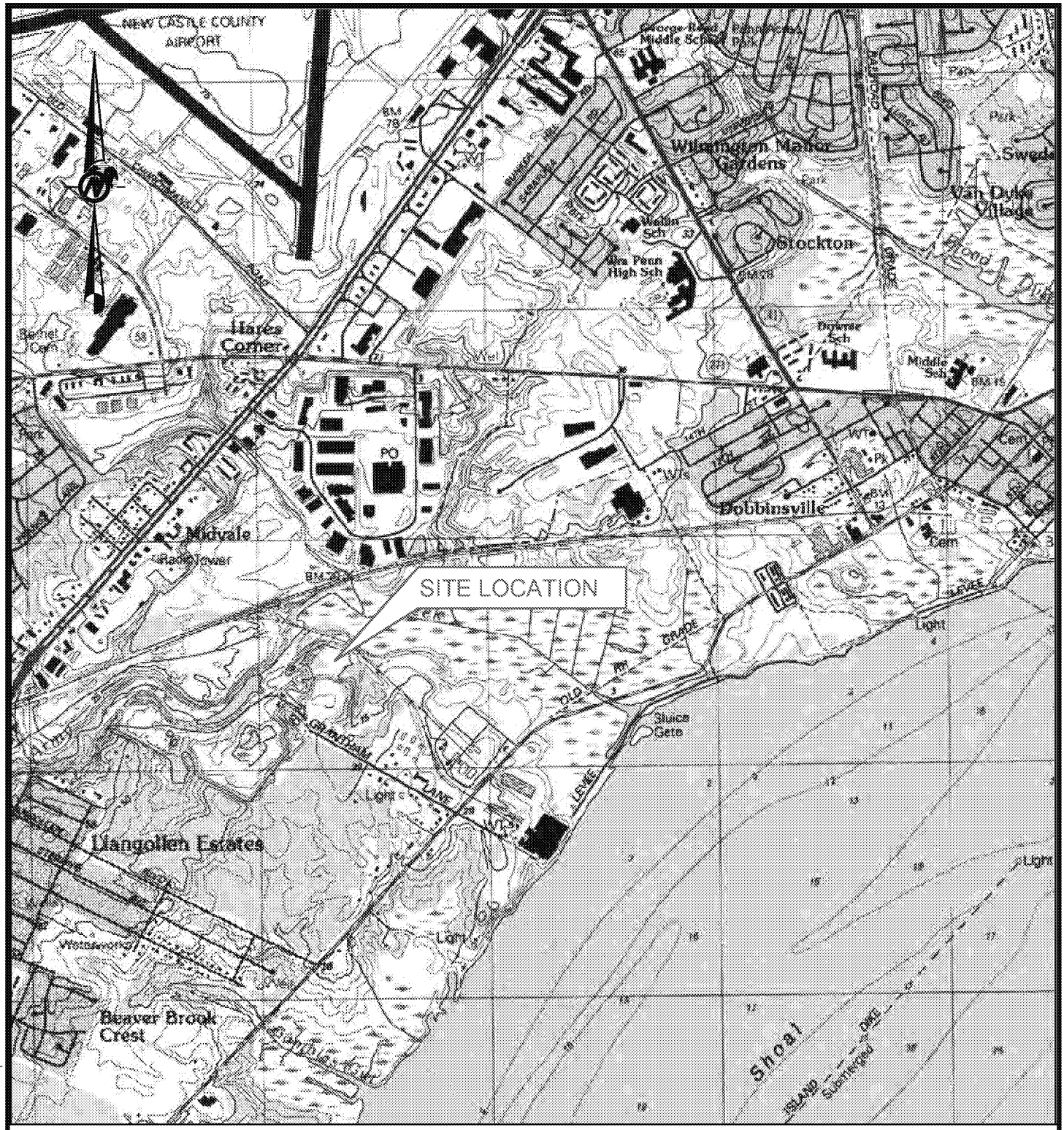
Table 7
Summary of Mass Removal Estimates
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

	PW-1(U) Mass Removal	DDA Combined LFExS Mass Removal	Individual LFExS Well Mass Removal
Period of Calculation	May 2017 - September 2017	May 2017 - October 2017	May 2017 - October 2017
TVOC Mass Removal Estimate	23 lb/year	9.47 lb/year*	30.93 lb/year
BCEE Mass Removal Estimate	1.5 lb/year	0.85 lb/year	0.75 lb/year
1,4-Dioxane Mass Removal Estimate	14.5 lb/year	N/A	8.75 lb/year
Average System Flow Rate	33.1 gpm	10.48 gpm	9.11 gpm
Notes	Mass removal calculated based on the sum of targeted VOCs and BCEE and an average flow rate.	Mass removal calculated based on the sum of targeted VOCs and BCEE from system effluent samples and the system extraction volume which is based on the difference between totalizer readings. System effluent samples are collected after the balancing tank; therefore, some VOC volatilization may occur. Calculated average flow rates are based on totalizer readings over a 6-month period including system down-time.	Mass removal calculated based on the sum of targeted VOCs and BCEE from individual well samples and average instantaneous flow rate for each well over a nearly one month period during almost continuous system operation. This calculation is intended as a comparison of mass removal by individual wells to the estimated total mass removed by the system based on the effluent sample results.

Notes:
1) LFExS = low-flow extraction system
2) lbs = pounds
3) gpm = gallons per minute
4) TVOC = total volatile organic compounds (based on target analyte list that includes 1,4-dioxane)
5) BCEE = bis(2-chloroethyl) ether
6) *does not include 1,4-dioxane in mass removal estimate

Prepared by: BPC
Checked by: TGB
Reviewed by: TAM

FIGURES



REFERENCE

1.) BASE MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLE OF WILMINGTON SOUTH, DELAWARE, DATED 1993.

2000 0 2000
SCALE FEET

Golder Associates
Manchester, New Hampshire

FILE No.	0136052Z006.dwg
PROJECT No.	013-6052
REV.	0

SCALE	AS SHOWN
DATE	08/10/12
DESIGN	RWB
CADD	MPB
CHECK	RWB
REVIEW	TAM

TITLE

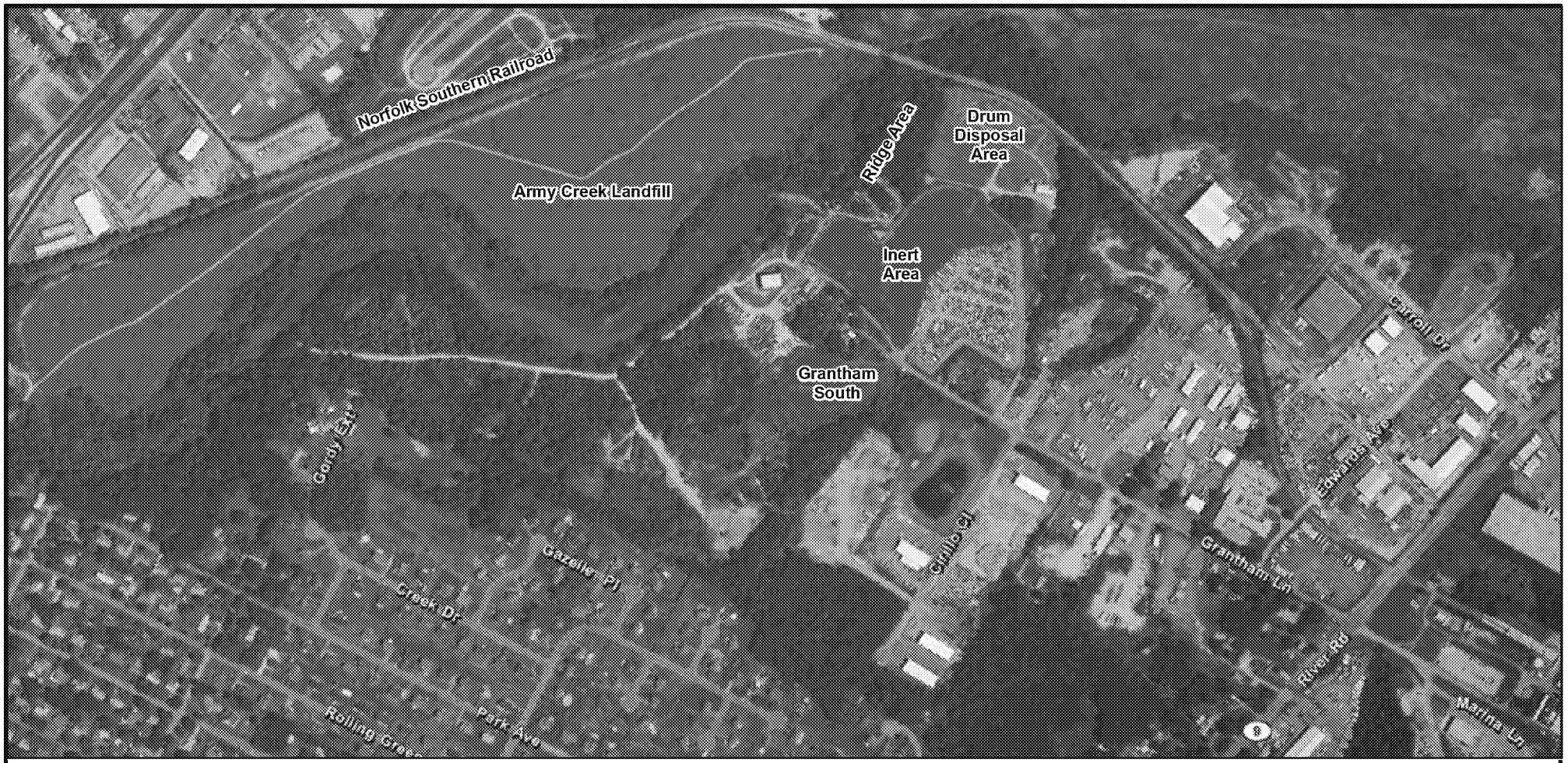
SITE LOCUS MAP

DELAWARE SAND AND GRAVEL SUPERFUND SITE

FIGURE 1

Drawing file: 0136052Z006.dwg Feb 25, 2016 — 3:48pm

Path: V:\001 GIS Projects\GIS DS&G\Reports\2012\August 2012\FIGURE 2.mxd



REFERENCES

Base Imagery taken from United States Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP), 2008.

Spatial Reference:
NAD 1983 HARN StatePlane Delaware FIPS 0700

N

0 355 710 1,420 Feet

1 inch = 700 feet

FIGURE 2

REVIEW	TAM	8/30/2012
CHECK	RWB	8/30/2012
GIS	CDS	8/13/2012
DESIGN	CDS	8/13/2012
REV. 0	SCALE	AS SHOWN
FILE No.	Base_Site_Image	
PROJECT No.	013-6052	

TITLE

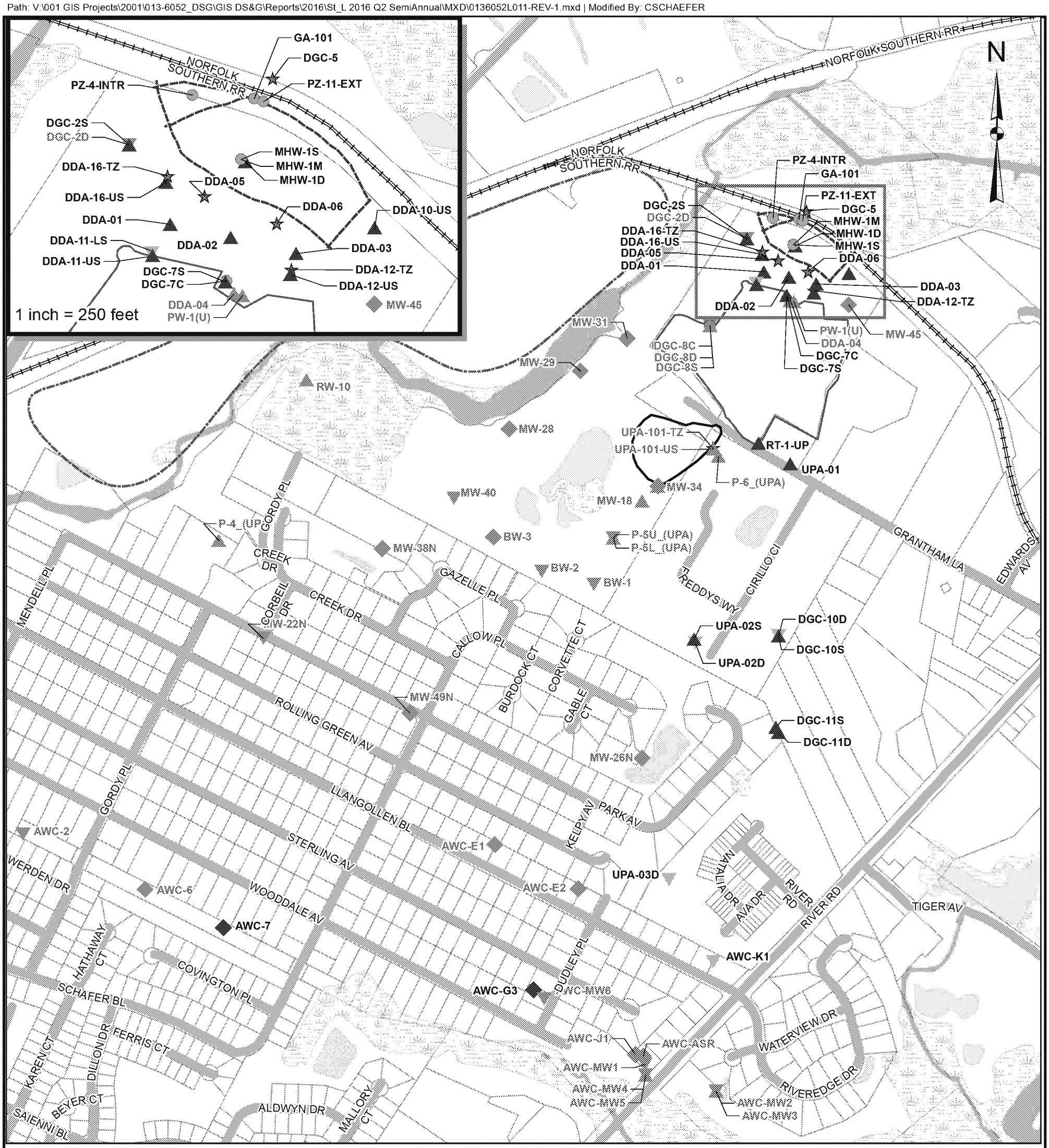
GENERAL SITE LAYOUT

PROJECT

Delaware Sand and Gravel Superfund Site New Castle, Delaware

Golder Associates
Manchester, New Hampshire

Path: V:\001 GIS Projects\2001\013-6052_DSG\GIS DS&G\Reports\2016\St_L 2016 Q2 SemiAnnual\MXD\0136052L011-REV-1.mxd | Modified By: CSCHAEFER



LEGEND

- Well screened in UPCU Transition Zone included in DS&G's approved 2011 monitoring program
- Well screened in UPA Upper Sand included in DS&G's approved 2011 monitoring program
- Well screened in UPA Upper Sand not included in DS&G's approved 2011 monitoring program
- Well screened in UPA Lower Sand included in DS&G's approved 2011 monitoring program
- Well screened in UPA Lower Sand not included in DS&G's approved 2011 monitoring program
- Well screened across UPA Upper Sand and Lower Sand included in DS&G's approved 2011 monitoring program
- Well screened across UPA Upper Sand and Lower Sand not included in DS&G's approved 2011 monitoring program
- Well screened in Columbia Aquifer included in DS&G's approved 2011 monitoring program
- Well screened in Columbia Aquifer not included in DS&G's approved 2011 monitoring program

REFERENCE

Base data from New Castle County Delaware, Department of Land Use, "eParcel View Map" web site GIS data download. Data acquired 01/18/2012.

0 300 600 1,200 Feet

1 inch = 600 feet

FIGURE 3

REVIEW	TAM	8/28/2016
CHECK	RWB	8/28/2016
GIS	AM	8/31/2016
DESIGN	TAM	07/16/2015
REV. 1	SCALE: AS SHOWN	
FILE No.	0136052L011-REV-1	
PROJECT No.	013-6052.007	

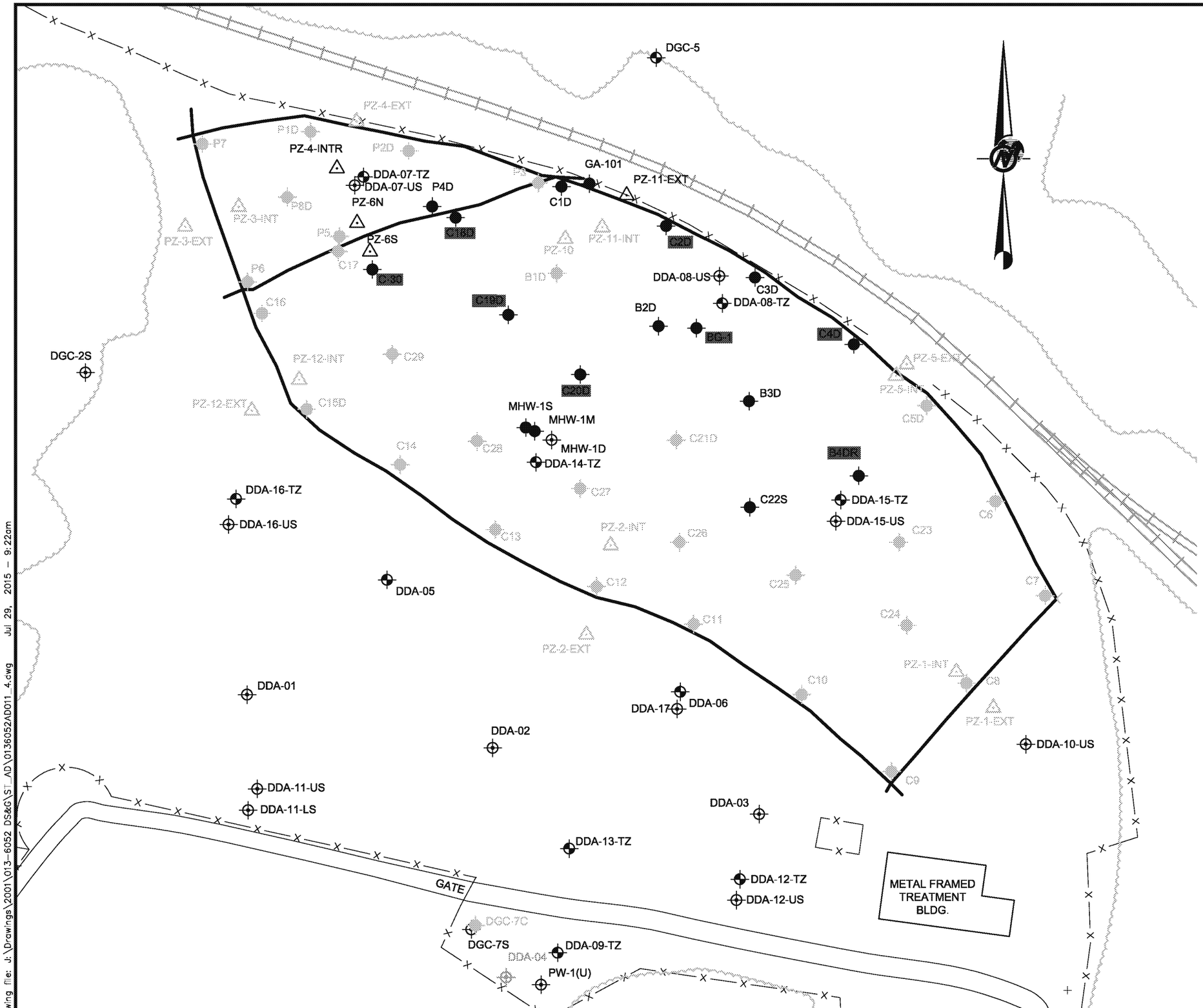
TITLE

DOWNGRADIENT UPA MONITORING WELL LOCATIONS

PROJECT

Delaware Sand and Gravel Superfund Site New Castle, Delaware

Golder Associates
Manchester, New Hampshire



LEGEND

–X——X——X——X	FENCELINE
———	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS

NOTES

1.) LOCATIONS OF WELLS AND BORINGS ARE APPROXIMATE.

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

60 0 60
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

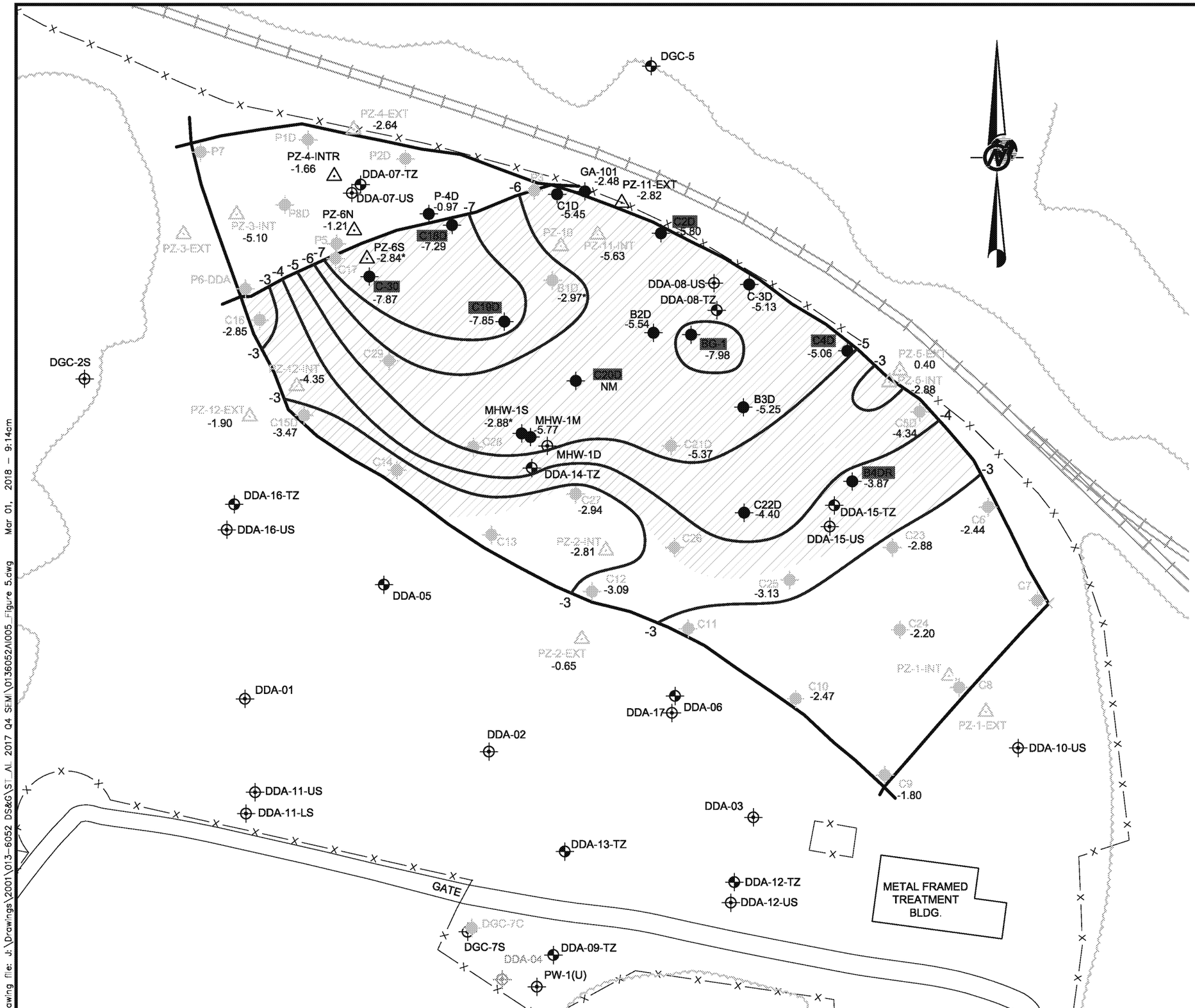
PROJECT
DELAWARE SAND AND GRAVEL SUPERFUND SITE
NEW CASTLE, DELAWARE

TITLE
LFExS WELLS AND DDA VICINITY MONITORING LOCATIONS

Golder Associates
Manchester, New Hampshire

PROJECT No.		013–6052	FILE No.	0136052AD011_4
DESIGN	RWB	06/10/2015	SCALE AS SHOWN	REV. 0
CADD	CDS	06/11/2015		
CHECK	RWB	07/27/2015	**FIGURE 4**	
REVIEW	TAM	07/27/2015		

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AD\0136052AD011_4.dwg Jul 29, 2015 – 9:22am



LEGEND

–X——X——X——X	FENCELINE
	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS
	INFERRED LFExS GROUNDWATER ELEVATION CONTOUR (ft-msl)
	APPROXIMATE EXTENT OF LFExS-INDUCED UPWARD VERTICAL GRADIENTS (SEE NOTE 2)
-1.95	LFExS GROUNDWATER ELEVATION (ft-msl) * INDICATES ELEVATIONS NOT INCLUDED IN CONTOURS NR = NOT RUNNING NM = NOT MEASURED

NOTES

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2012)
2.) BASED ON SEPTEMBER 2017 GROUNDWATER LEVEL MEASUREMENTS
3.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

60 0 60
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
DELAWARE SAND AND GRAVEL
SUPERFUND SITE
NEW CASTLE, DELAWARE

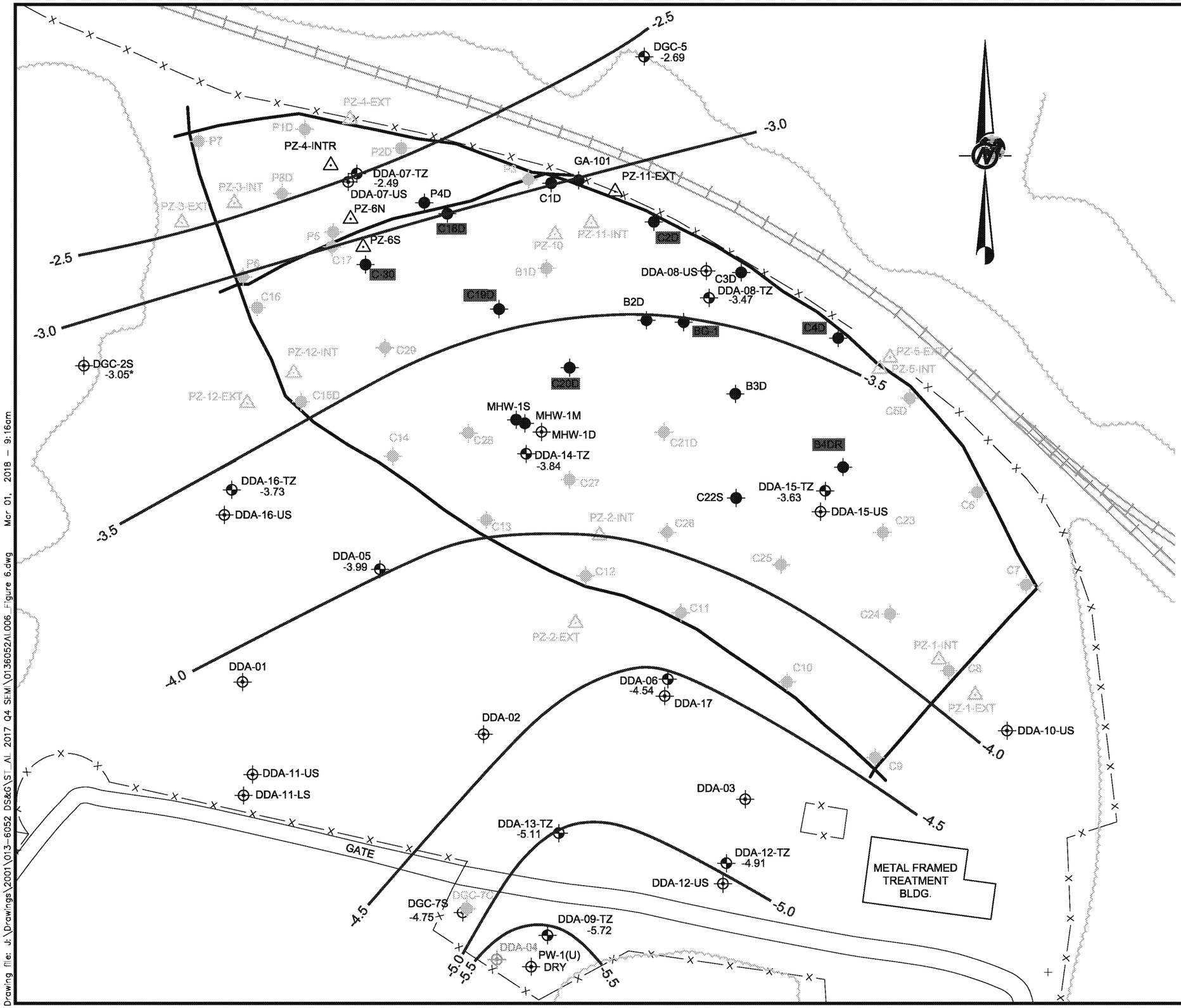
TITLE
LFExS GROUNDWATER CONTOUR MAP
DDA
COLUMBIA
SEPTEMBER 2017

Golder Associates
Manchester, New Hampshire

PROJECT No.		013-6052	FILE No.	0136052AI001
DESIGN	TGB	12/01/2017	SCALE AS SHOWN	REV. 0
CADD	RWC	12/01/2017		
CHECK	BPC	12/01/2017		
REVIEW	TAM	02/28/2018		

FIGURE 5

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AI 2017 Q4 SEMI\0136052AI005_Figure 5.dwg Mar 01, 2018 – 9:14am



LEGEND

–X——X——X——X	FENCELINE
	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS
-2.53	GROUNDWATER ELEVATION (ft-msl)
	GROUNDWATER ELEVATION CONTOURS (ft-msl) (DASHED WHERE INFERRED)
	NM = NOT MEASURED

NOTES

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2012)
2.) GROUNDWATER ELEVATION BASED ON SEPTEMBER 2017 MEASUREMENTS
3.) * INDICATES DATA NOT INCLUDED IN COUNTOUR
4.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

60 0 60
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
DELAWARE SAND AND GRAVEL
SUPERFUND SITE
NEW CASTLE, DELAWARE

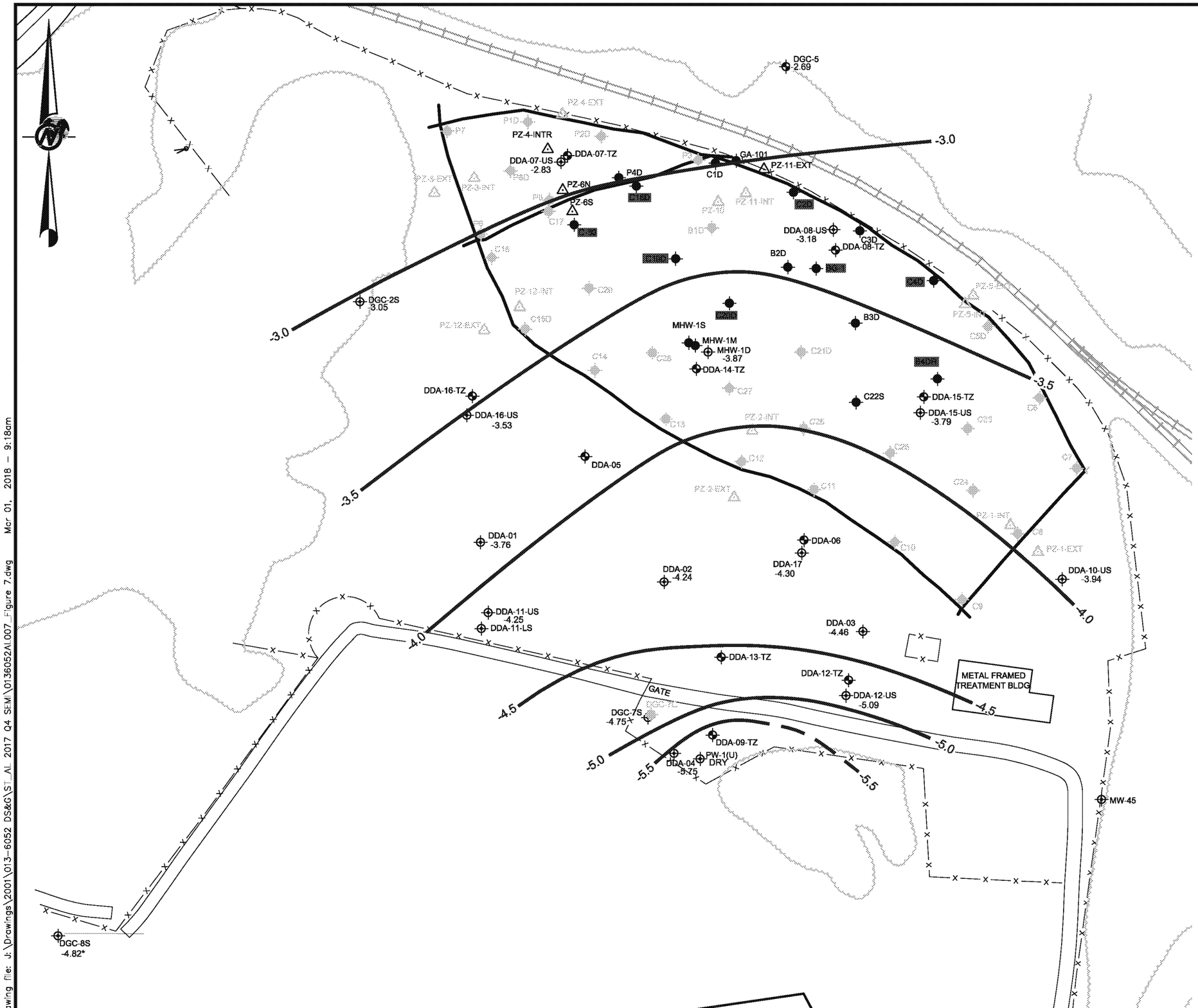
TITLE
DDA TO WELL PW-1(U)
UPCU TRANSITION ZONE
GROUNDWATER ELEVATION CONTOURS
SEPTEMBER 2017

Golder Associates
Manchester, New Hampshire

PROJECT No.		013-6052	FILE No.	0136052A002
DESIGN	TGB	12/01/2017	SCALE AS SHOWN	REV. 0
CADD	RWC	12/01/2017		
CHECK	BPC	12/01/2017		
REVIEW	TAM	02/28/2018		

FIGURE 6

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AL 2017 Q4 SEMI\0136052AI006_Figure 6.dwg Mar 01, 2018 – 9:16am



LEGEND

–X——X——X——X	FENCELINE
	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS
-2.53	GROUNDWATER ELEVATION (ft-msl)
	GROUNDWATER ELEVATION CONTOURS (ft-msl) (DASHED WHERE INFERRED)
	NM = NOT MEASURED

NOTES

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2012)
2.) BASED ON SEPTEMBER 2017 GROUNDWATER LEVEL MEASUREMENTS
3.) * INDICATES DATA NOT INCLUDED IN COUNTOUR
4.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

80 0 80
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
DELAWARE SAND AND GRAVEL
SUPERFUND SITE
NEW CASTLE, DELAWARE

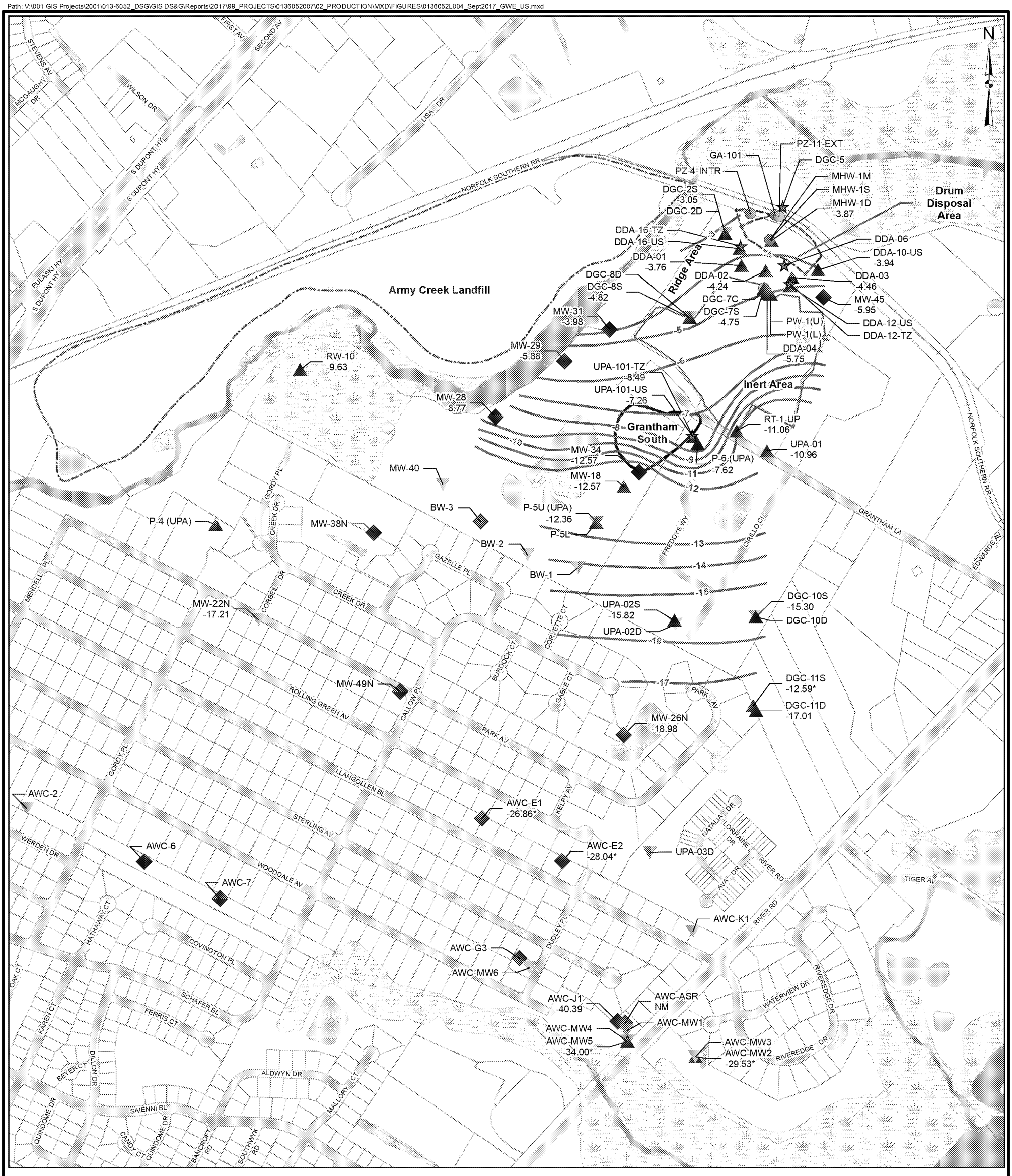
TITLE
DDA TO WELL PW-1(U)
UPA GROUNDWATER ELEVATION CONTOURS
SEPTEMBER 2017

Golder Associates
Manchester, New Hampshire

PROJECT No.		013-6052	FILE No.	0136052A\003_rev 1
DESIGN	TGB	12/01/2017	SCALE AS SHOWN	REV. 0
CADD	RWC	12/01/2017		
CHECK	BPC	12/01/2017	**FIGURE 7**	
REVIEW	TAM	02/28/2018		

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AL 2017 Q4 SEMI\0136052AL003_Figure 7.dwg Mar 01, 2018 – 9:18am

Path: V:\001 GIS Projects\2001\013-6052_DSG\GIS DS&G\Reports\2017\99_PROJECTS\0136052007\02_PRODUCTION\MXD\FIGURES\0136052L004_Sept2017_GWE_US.mxd



LEGEND

- Well screened in UPCU Transition Zone
- Well screened in UPA Upper Sand
- Well screened in UPA Lower Sand
- Well screened across UPA Upper Sand and Lower Sand
- Well screened in Columbia Aquifer
- UPA Upper Sand Groundwater Contours - September 2017

REFERENCE

Base data taken from New Castle County Delaware, Department of Land Use, "eParcel View Map" web site GIS data download. Data acquired 07/29/2013.

-8.50 Elevation in Feet - Mean Sea Level
NM = Not Measured
NA = Measured, but is not applicable to the geologic unit depicted
* Indicates datapoint not used in contouring

0 300 600 1,200 Feet

1 inch = 600 feet

FIGURE 8

REVIEW	TAM	3/1/2018
CHECK	TGB	3/1/2018
GIS	SHL	3/1/2018
DESIGN	RWB	3/1/2018
REV. 0	SCALE: AS SHOWN	
FILE No. 0136052L004_Sept2017_GWE_US		
PROJECT No. 013-6052.007		

TITLE

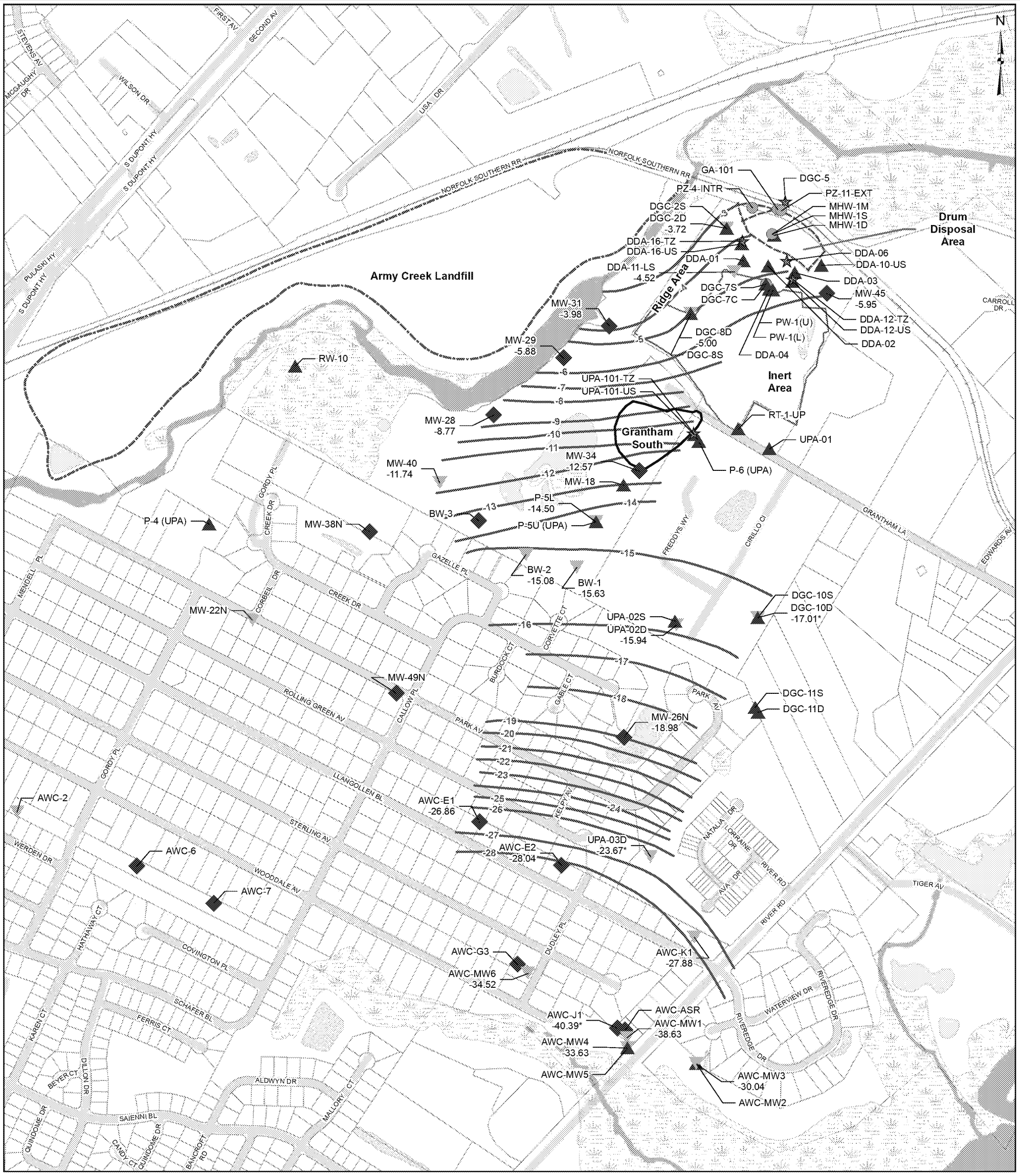
UPA UPPER SAND GROUNDWATER ELEVATION CONTOURS - SEPTEMBER 2017

PROJECT

Delaware Sand and Gravel Superfund Site New Castle, Delaware

Golder Associates
Manchester, New Hampshire

Path: V:\001 GIS Projects\2001\013-6052_DSG\GIS DS&G\Reports\2017\99_PROJECTS\0136052007\02_PRODUCTION\MXD\FIGURES\0136052L004_Sept2017_GWE_LS.mxd



LEGEND

- Well screened in UPCU Transition Zone
- Well screened in UPA Upper Sand
- Well screened in UPA Lower Sand
- Well screened across UPA Upper Sand and Lower Sand
- Well screened in Columbia Aquifer
- UPA Lower Sand Groundwater Contours - September 2017

REFERENCE

Base data taken from New Castle County Delaware, Department of Land Use, "eParcel View Map" web site GIS data download. Data acquired 07/29/2013.

-11.68 Elevation in Feet - Mean Sea Level

NA = Measured, but is not applicable to the geologic unit depicted

* - Indicates datapoint not used in contouring

300 600 1,200 Feet

1 inch = 600 feet

FIGURE 9

REVIEW	TAM	2/28/2018
CHECK	TGB	2/28/2018
GIS	SHL	2/28/2018
DESIGN	RWB	2/28/2018
REV. 0	SCALE: AS SHOWN	
FILE No. 0136052L004_Sept2017_GWE_LS		
PROJECT No.	013-6052.007	

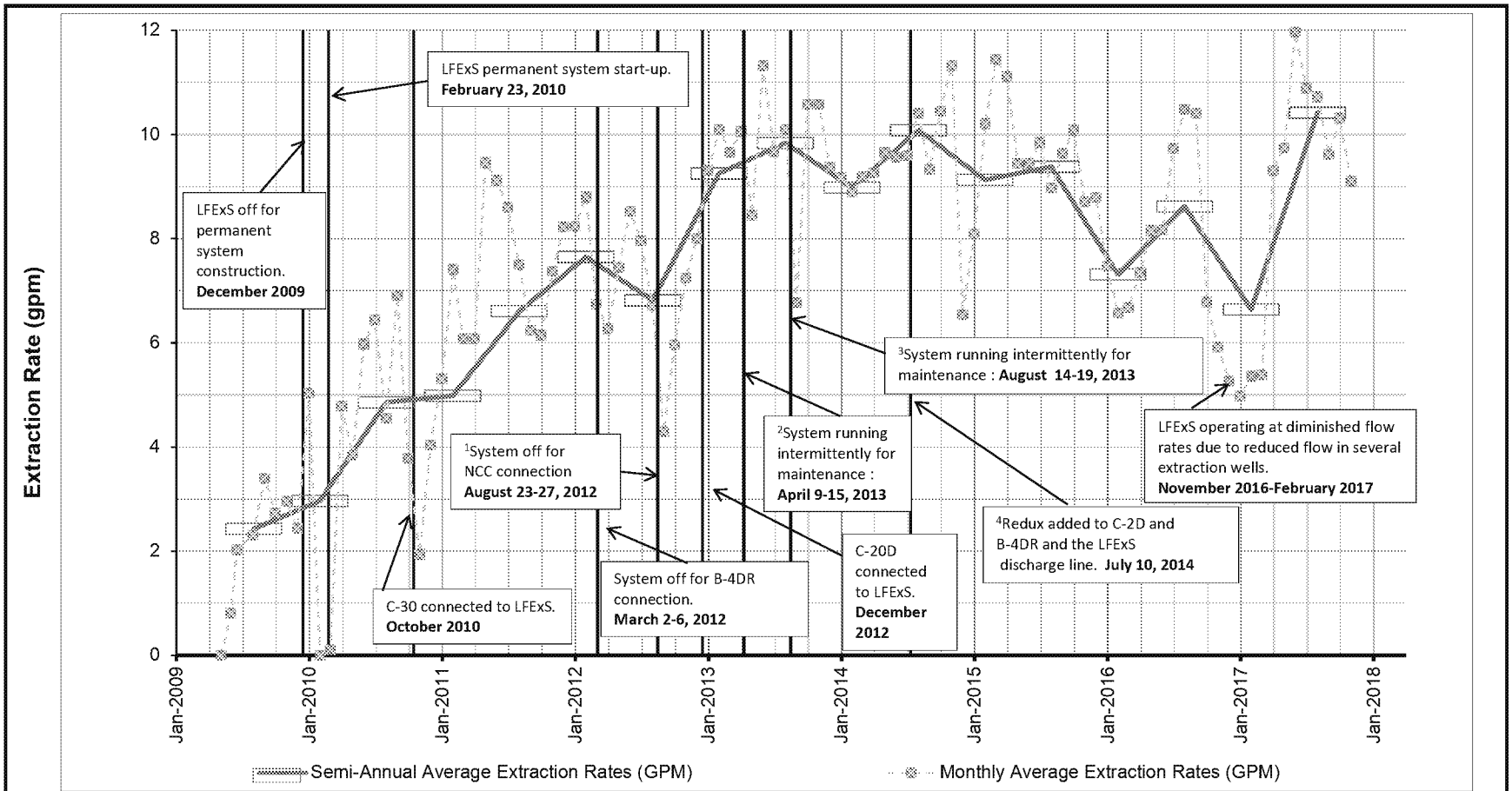
TITLE

UPA LOWER SAND GROUNDWATER ELEVATION CONTOURS - SEPTEMBER 2017

PROJECT

Delaware Sand and Gravel Superfund Site New Castle, Delaware

Golder Associates
Manchester, New Hampshire



Notes:

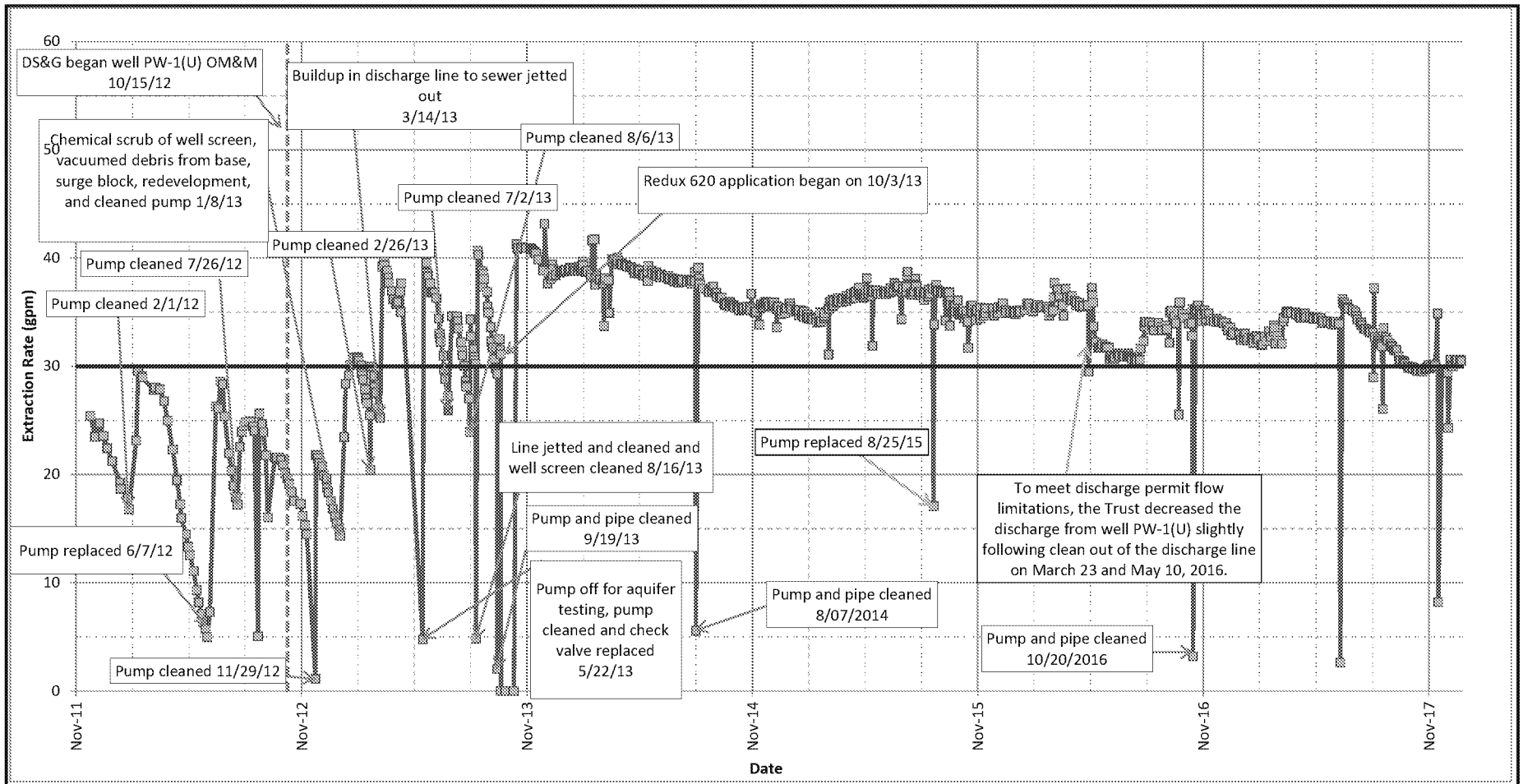
1) System off for NCC sewer force main connection (August 23-27, 2012).
2) System off for quarterly maintenance (April 9-11, 2013) and running at reduced flow rate until prior to discharge pump repair on April 15, 2013.
3) System off for maintenance (August 14-15, 2013) and tank cleaning (August 19, 2013).
4) Addition of Redux to pumping wells C-2D and B-4DR and the LFExS discharge line via the balancing tank (July 10, 2014).

LFExS Monthly and Semi-Annual Extraction Rates

Golder Associates

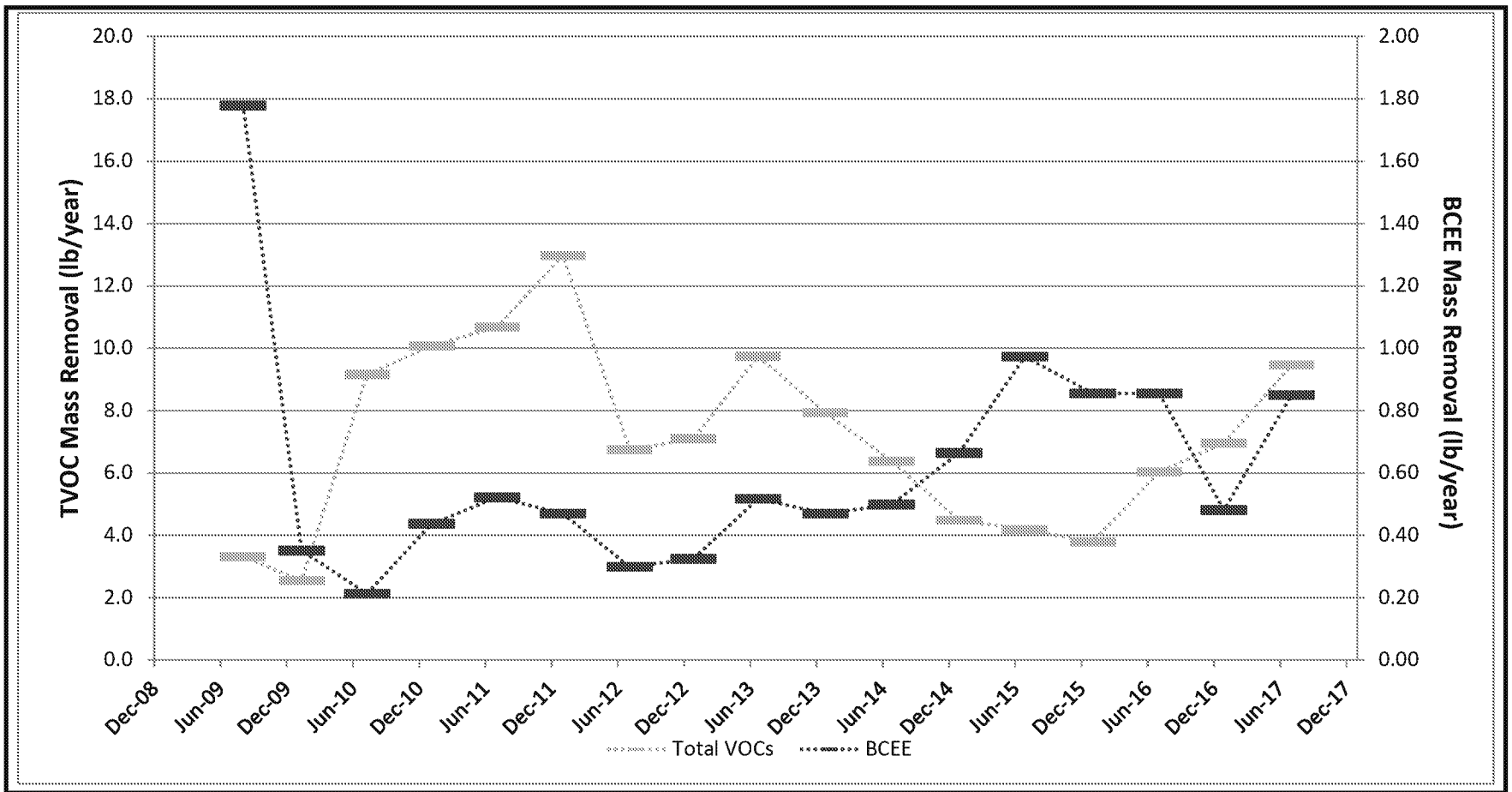
Project Number:	013-6052	
Prepared by:	BPC	2/9/2018
Checked by:	LWL	2/9/2018
Reviewed by:	TAM	2/27/2018

FIGURE 10



Well PW-1(U) Operation and Maintenance Summary

Golder Associates	Project Number:	013-6052	FIGURE 11
	Prepared by:	BPC 2/9/2018	
	Checked by:	LWL 2/9/2018	Notes:
	Reviewed by:	TAM 2/27/2018	

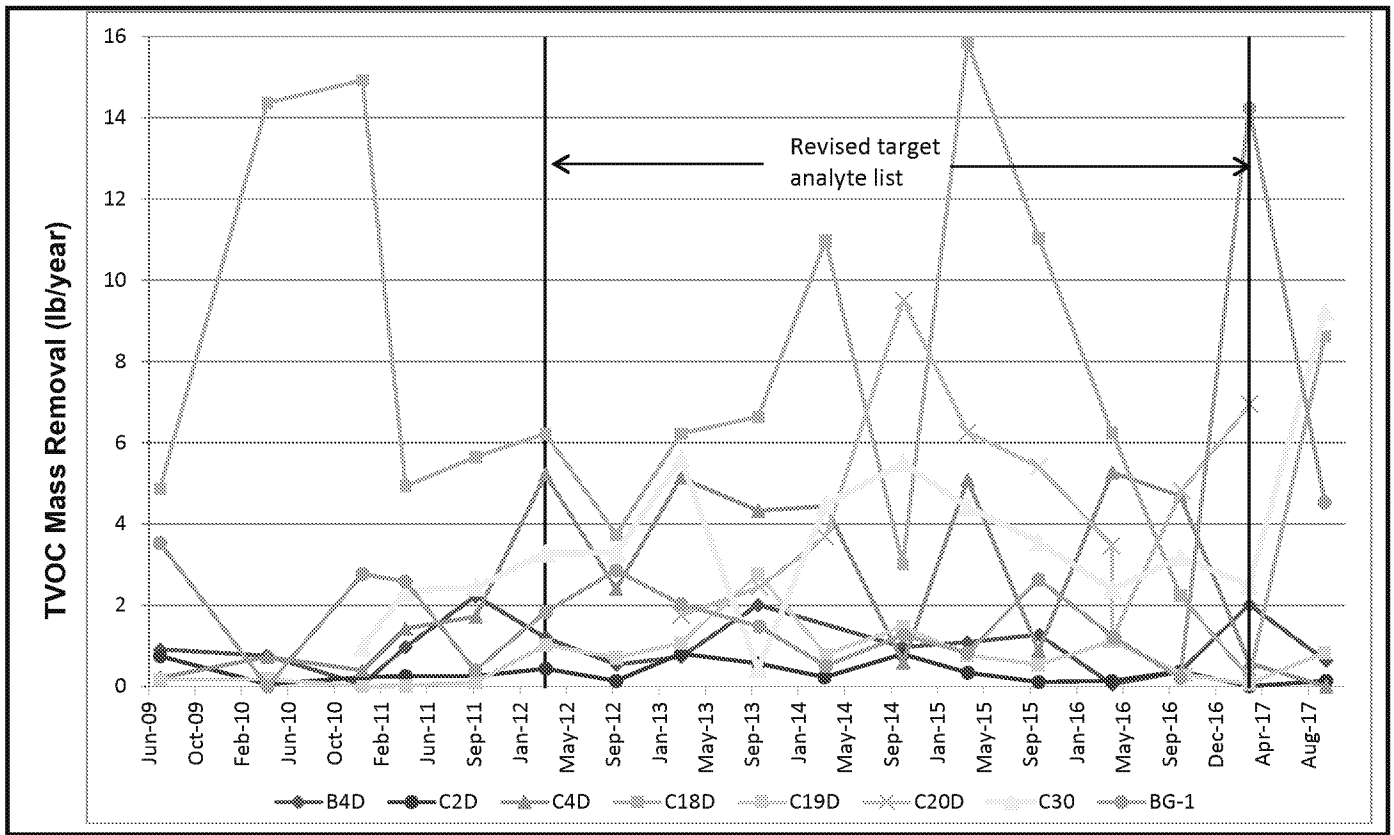


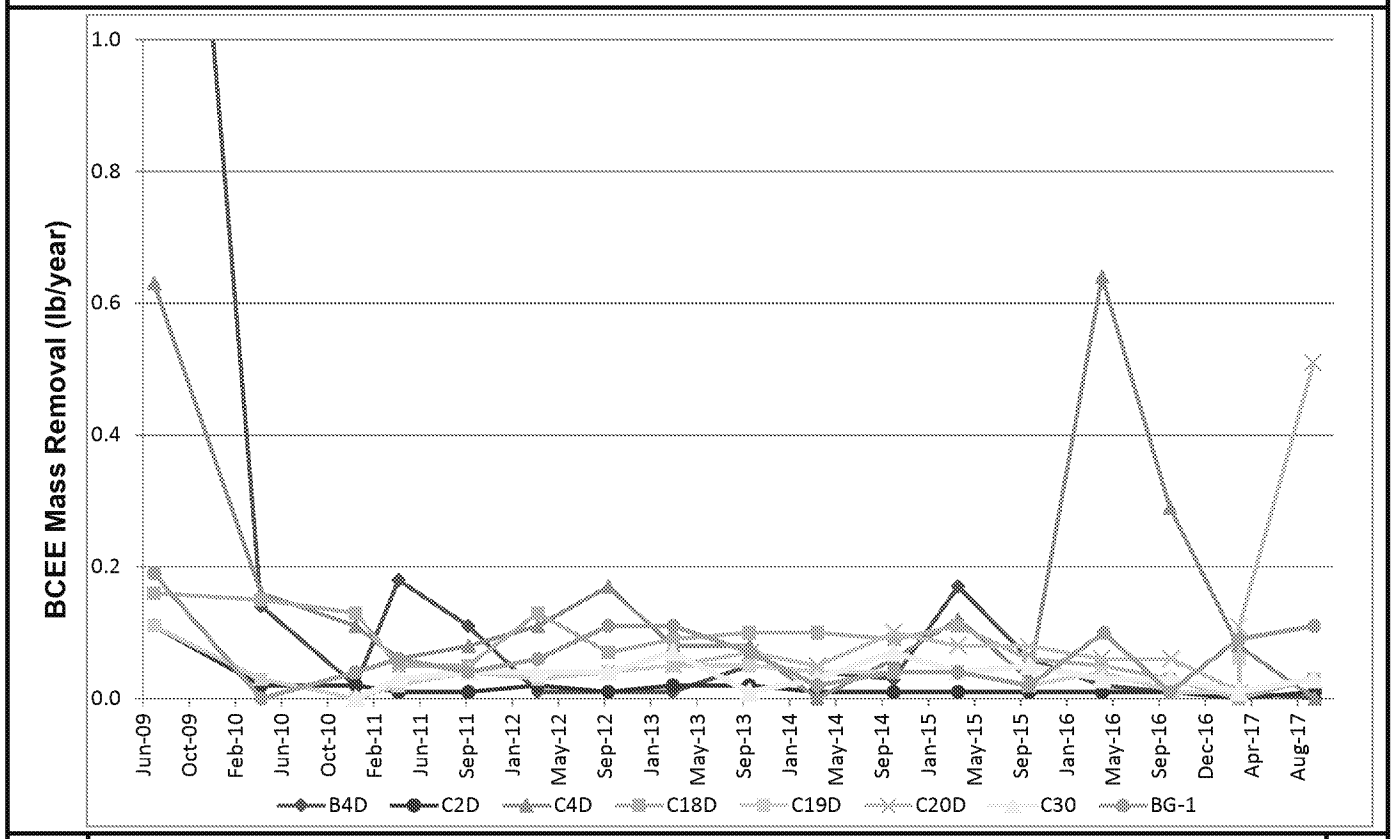
DDA Combined LFExS Mass Removal Rates

Golder Associates	Project Number:	013-6052		FIGURE 12
	Prepared by:	BPC	2/7/2018	
	Checked by:	TGB	2/9/2018	Notes: Mass removal rate represents discharge to sewer and is calculated from an average of two consecutive sampling events.
	Reviewed by:	TAM	2/27/2018	

Note: TVOC mass removal does not include 1,4, dioxane in calculation since it is not analyzed for in the TTO sample.

P:\Projects\2001\013-6052 DS&G\Reports\Semi-Annual Reports\2017\2017 Q3Q4\Draft\Tables\
Table 4 and Figure 12 DDA LFEx Mass Removal WITH DIOXANE_15.xlsx



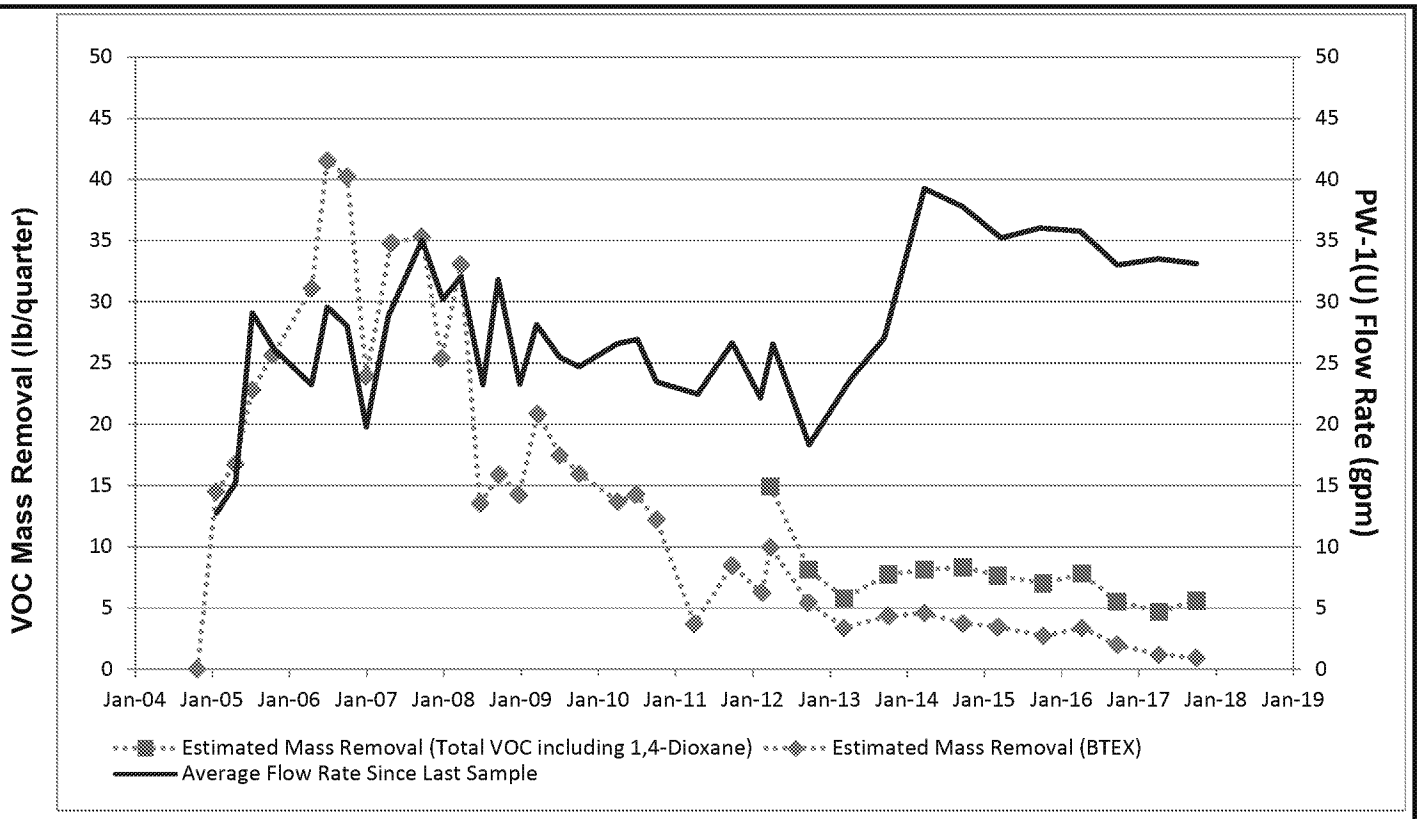


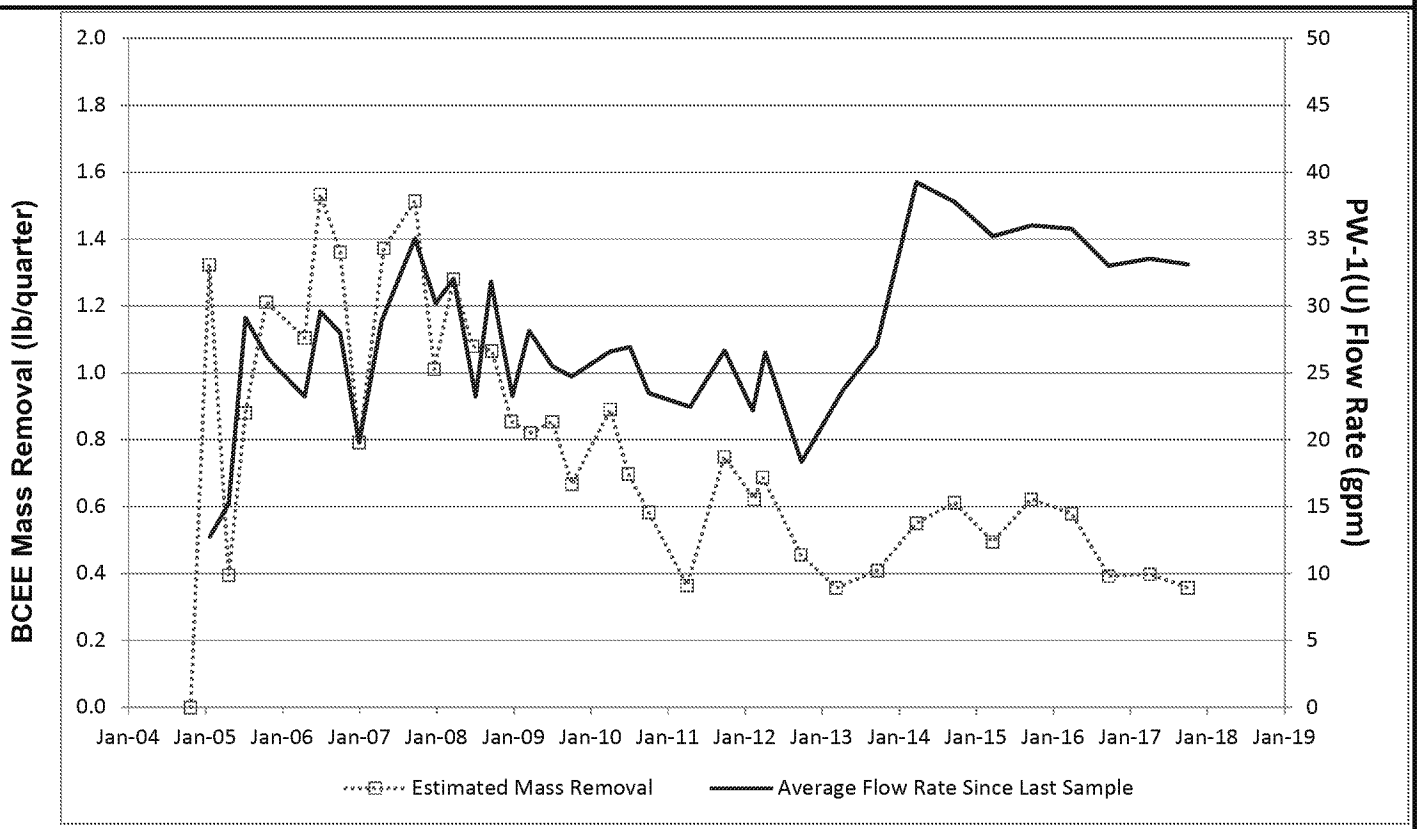
Individual LFExS Well Mass Removal Rates

Golder Associates

Project Number:	013-6052		FIGURE 13
Prepared by:	BPC	2/8/2018	
Checked by:	TGB	2/13/2018	Notes:
Reviewed by:	TAM	2/27/2018	

P:\Projects\2001\013-6052 DS&G\Reports\Semi-Annual Reports\2017\2017 Q3Q4\Draft\Tables\
Table 5 and Figure 13 Indy Well Mass Removal with DIOXANE B-4DR rate.xlsx
2/28/2018





Well PW-1(U) Mass Removal Rates

Golder Associates

Project Number:	013-6052		FIGURE 14
Prepared by:	BPC	2/8/2018	
Checked by:	TGB	2/13/2018	Notes:
Reviewed by:	TAM	2/27/2018	

P:\Projects\2001\013-6052 DS&G\Reports\Semi-Annual Reports\2017\2017 Q3Q4\Draft\Tables\
Table 6 PW-1-U and Figure 14_Mass Removal with DIOXANE.xlsx
2/28/2018

APPENDIX A

DATA QUALITY ASSESSMENTS
SEPTEMBER-OCTOBER 2017
(Includes Form 1s)

Data Quality Assessment
September 2017 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, DE

This report presents the findings of the data quality assessment performed on the analyses of environmental samples collected for the *Semi-Annual Monitoring Report, October 2017.* The groundwater monitoring was conducted at the Delaware Sand and Gravel (DS&G) Superfund Site (Site), located in New Castle, Delaware. Samples for this Monitoring Event were collected between September 27, 2017 and October 12, 2017. The chemical data for samples collected at the Site were evaluated to identify data quality issues which could affect the use of the data for decision making purposes. A total of 57 primary samples and the following Quality Assurance/Quality Control (QA/QC) samples were collected:

- Twelve (12) trip blanks;
- Four (4) equipment rinsate blanks;
- Two (2) matrix spike / matrix spike duplicate (MS/MSD) samples; and
- Three (3) field duplicate parameter sets.

Samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs), TCL Semivolatile Organic Compounds (SVOCs), dissolved iron, and dissolved manganese. Not all samples were analyzed for all listed parameters. Refer to Table 1 for the specific analyses for each sample. Test America of Edison, New Jersey performed all chemical analyses utilizing the following methodology:

- TCL VOCs by United States Environmental Protection Agency (USEPA) SW846[1] Method 8260B/8260B Selected Ion Monitoring (SIM) Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (December 1996);
- TCL SVOCs by USEPA SW846 Method 8270C/8270C SIM Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (January 1998); and,
- Dissolved Iron and Manganese by USEPA SW846 Method 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry (November 2000).

Information regarding the sample point identifications, analytical methods, QC samples, sampling dates, and contract laboratory sample delivery group (SDG) designations are summarized in Table 1.

[1] USEPA, 1996, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846): 3rd edition, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL http://www3.epa.gov/epawaste/hazard/testmethods/sw846/online/.

All groundwater results were validated following guidelines provided by USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017) and NFG for Inorganic Superfund Data Review (January 2017), as applicable to the above listed analytical methods. In general, chemical results for the samples collected at the Site were qualified on the basis of outlying precision or accuracy parameters, or on the basis of professional judgment. The following definitions provide a brief explanation of the qualifiers which may have been assigned to data during the data evaluation process.

J	The analyte is present; however, the reported value may not be accurate or precise.
J-	The analyte is present; however, the reported value may not be accurate or precise. The result is biased low.
J+	The analyte is present; however, the reported value may not be accurate or precise. The result is biased high.
U	The analyte was analyzed for, but was not detected above the sample reporting limit.
UJ	The analyte was not detected above the sample reporting limit. However, the reporting limit is approximate.

The data generated during this Groundwater Monitoring Event met the QC criteria established in the respective USEPA methods and CLP guidelines, except as noted below. Qualifications may not have been required for all samples. Table 2 summarizes detailed qualifications applied to the data. A summary of the analytical detections is presented in Appendix B of the *Semi-Annual Monitoring Report, October 2017.*

- Due to field sampler error, the sampling date for samples collected on 9/29/2017 was incorrectly identified in the field as 9/27/2017, and a trip blank collected on 9/29/2017 was incorrectly identified in the field as "TBGW_092717". Collection dates for all affected samples were revised to the correct date (9/29/2017) and lab sample ID 460-142024-1 was revised to the correct field sample ID (TBGW_092917).
- Certain acetone and SVOC results were qualified as non-detect (U) at the sample reporting limit due to rinsate blank contamination.
- Certain acetone results were qualified as non-detect (U) at the sample reporting limit due to trip blank contamination.
- All detect VOC results for sample PZ-6S were qualified as estimated high (J+) when the associated surrogate recovery was above QC criteria.
- Certain SVOC results were qualified as biased high (J+) when the associated surrogate recoveries were above QC criteria.
- All VOC results for samples DGC-10D, B-4DR, and FDGW_092717 were qualified as estimated low (J- for detect results) or estimate (UJ for non-detect results) when the associated surrogate recovery was below QC criteria.

- The diphenyl ether result for sample P-6(UPA) was qualified as estimated high (J+) when the associated MS/MSD and surrogate recoveries were above QC criteria.
- The bisphenol-A results for samples DDA-10-US and MHW-1M were qualified as non-detect and estimated (UJ) due to rinsate blank contamination and when the associated surrogate recovery was below QC criteria.
- Certain VOC and SVOC results were qualified as estimated (J for detect results, UJ for non-detect results) when the associated MS/MSD recoveries were below QC criteria.
- Certain VOC and SVOC results were qualified as estimated high (J+) when the associated LCS/LCSD recoveries were above QC criteria.
- Certain SVOC results were qualified as estimated low (J- for detect results) or estimated (UJ for non-detect results) when the associated LCS/LCSD recoveries were below QC criteria.
- The N-methylaniline result for P-6(UPA) was qualified as estimated (J) when the associated LCS recovery was below QC criteria, and the associated surrogate recovery was above QC criteria.

Based on the data evaluations and data quality assessment, the analytical data for samples collected at the Site were determined to be acceptable (including estimated data) for their intended use. Generally acceptable levels of accuracy and precision, based on LCS, MS/MSD, field duplicate and surrogate recoveries, were achieved for the data. In addition, the data completeness (i.e. the ratio of the amount of valid data obtained to the amount expected, including estimated data (J/J+/J-/UJ)) was 100%.

Table 1
Sample Point Identifications
September 2017 Semi-Annual Groundwater Monitoring Event
Deleware Sand Gravel Superfund Site
New Castle, Delaware

					Analysis/Parameters		
SDG	***Field Identification***	***Matrix***	***QC Samples***	***Collection Date***	***VOCs via 8260B & 8260B SIM***	***SVOCs via 8270C & 8270C SIM***	***Metals, Dissolved (Fe, Mn) via 6010C***
460-141967-1	TBGW_092717	WQ	TB	9/27/2017	X	-	-
460-141967-1	FDGW_092717	GW	FD (DGC-11S)	9/27/2017	X	X	X
460-141967-1	DGC-11D	GW	MS/MSD	9/27/2017	X	X	X
460-141967-1	DGC-11S	GW	-	9/27/2017	X	X	X
460-141967-1	RBGW_092717	WQ	RB	9/27/2017	X	X	X
460-141967-1	DGC-10S	GW	-	9/27/2017	X	X	X
460-141967-1	DGC-10D	GW	-	9/27/2017	X	X	X
460-141967-1	TBGW_092817	WQ	TB	9/28/2017	X	-	-
460-141967-1	AWC-E2(140)	GW	-	9/28/2017	X	X	X
460-141967-1	AWC-E1(132)	GW	-	9/28/2017	X	X	X
460-141967-1	AWC-E2(165)	GW	-	9/28/2017	X	X	X
460-141967-1	AWC-E1(156)	GW	-	9/28/2017	X	X	X
460-141967-1	AWC-K1	GW	-	9/28/2017	X	X	X
460-141967-1	TBGW_092917	WQ	TB	9/29/2017	X	-	-
460-141967-1	MW-34	GW	-	9/29/2017	X	X	X
460-141967-1	MW-18	GW	-	9/29/2017	X	X	X
460-141967-1	P4(UPA)	GW	-	9/29/2017	X	X	X
460-141967-1	UPA-3D	GW	-	9/29/2017	X	X	X
460-142184-1	TBGW_100217	WQ	TB	10/2/2017	X	-	-
460-142184-1	MW-28	GW	-	10/2/2017	X	X	X
460-142184-1	MW-29	GW	-	10/2/2017	X	X	X
460-142184-1	P-5L(UPA)	GW	-	10/2/2017	X	X	X
460-142184-1	RW-10	GW	-	10/2/2017	X	X	X
460-142184-1	RT-1-UP	GW	-	10/2/2017	X	X	X
460-142184-1	MW-31	WQ	RB	10/2/2017	X	X	X
460-142184-1	TBGW_100317	WQ	TB	10/3/2017	X	-	-
460-142184-1	BW-1	GW	-	10/3/2017	X	X	X
460-142184-1	BW-2	GW	-	10/3/2017	X	X	X
460-142184-1	TBGW_100417	WQ	TB	10/04/17	X	-	-
460-142184-1	DGC-5	GW	-	10/04/17	X	X	X
460-142184-1	P-6(UPA)	GW	MS/MSD	10/04/17	X	X	X
460-142184-1	RBGW_100417	WQ	RB	10/04/17	X	X	X
460-142184-1	UPA-02D	GW	-	10/04/17	X	X	X
460-142184-1	UPA-02S	GW	-	10/04/17	X	X	X
460-142184-1	UPA-01	GW	-	10/04/17	X	X	X
460-142184-1	FDGW_100417	GW	FD (UPA-02D)	10/04/17	X	X	X
460-142534-1	TBGW_100517	WQ	TB	10/5/2017	X	-	-
460-142534-1	MW-26N	GW	-	10/5/2017	X	X	X
460-142534-1	PZ-4-INTR	GW	-	10/5/2017	X	X	X
460-142534-1	P-4D	GW	-	10/5/2017	X	X	X
460-142534-1	DGC-2S	GW	-	10/5/2017	X	X	X
460-142534-1	DDA-12-US	GW	-	10/5/2017	X	X	X
460-142534-1	DDA-03	GW	-	10/5/2017	X	X	X
460-142534-1	TBGW_100617	WQ	TB	10/6/2017	X	-	-
460-142534-1	GA-101	GW	-	10/6/2017	X	X	X
460-142534-1	C-1D	GW	-	10/6/2017	X	X	X
460-142534-1	B-2D	GW	-	10/6/2017	X	X	X
460-142534-1	PZ-11-EXT	GW	-	10/6/2017	X	X	X
460-142534-1	B-3D	GW	-	10/6/2017	X	X	X
460-142534-1	TBGW_100917	WQ	TB	10/09/17	X	-	-
460-142534-1	C-18D	GW	-	10/09/17	X	X	X
460-142534-1	C-30	GW	-	10/09/17	X	X	X
460-142534-1	DDA-02	GW	-	10/09/17	X	X	X
460-142534-1	C-19D	GW	-	10/09/17	X	X	X
460-142534-1	BG-1	GW	-	10/09/17	X	X	X
460-142534-1	C-20D	GW	-	10/09/17	X	X	X
460-142534-1	DDA-06	GW	-	10/09/17	X	X	X
460-142534-1	PW-1(U) Discharge	GW	-	10/09/17	X	X	X
460-142922-1	TBGW_101017	WQ	TB	10/10/2017	X	-	-
460-142922-1	PZ-6N	GW	-	10/10/2017	X	X	X
460-142922-1	PZ-6S	GW	-	10/10/2017	X	X	X
460-142922-1	C-3D	GW	-	10/10/2017	X	X	X
460-142922-1	DGC-7S	GW	-	10/10/2017	X	X	X
460-142922-1	C-22S	GW	-	10/10/2017	X	X	X
460-142922-1	FDGW_101017	GW	FD (C-22S)	10/10/2017	X	X	X
460-142922-1	MHW-1D	GW	-	10/10/2017	X	X	X
460-142922-1	TBGW_101117	WQ	TB	10/11/2017	X	-	-
460-142922-1	RBGW_101117	WQ	RB	10/11/2017	X	X	X
460-142922-1	DGC-7C	GW	-	10/11/2017	X	X	X
460-142922-1	DDA-05	GW	-	10/11/2017	X	X	X
460-142922-1	MHW-1S	GW	-	10/11/2017	X	X	X
460-142922-1	DDA-01	GW	-	10/11/2017	X	X	X
460-142922-1	DDA-10-US	GW	-	10/11/2017	X	X	X
460-142922-1	MHW-1M	GW	-	10/11/2017	X	X	X
460-142922-1	TBGW_101217	WQ	TB	10/12/2017	X	-	-
460-142922-1	C-2D	GW	-	10/12/2017	X	X	X
460-142922-1	B-4DR	GW	-	10/12/2017	X	X	X
460-142922-1	C-4D	GW	-	10/12/2017	X	X	X

Abbreviations:

FD - Field Duplicate
Fe - Iron
GW - Groundwater
Mn - Manganese
MS/MSD - Matrix Spike/Matrix Spike Duplicate
QC - Quality Control
RB - Rinsate Blank
SDG - Sample Delivery Group
SIM - Selective Ion Monitoring
SVOCs - Semivolatile Organic Compounds
TB - Trip Blank
VOCs - Volatile Organic Compounds
WQ - Water, Quality Control

Table 2
Data Qualifications
September 2017 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	Sample Name	Constituent	New Result	New RL	Qualifier	Reason
460-141967-1	AWC-E1(132)	Bis(2-chloroethyl)ether	-	-	J+	LCS/LCSD recovery above QC limits
460-141967-1	AWC-E1(156)	Acetone	5	-	U	Trip blank contamination
460-141967-1	AWC-E1(156)	Bis(2-chloroethyl)ether	-	-	J+	LCS/LCSD recovery above QC limits
460-141967-1	AWC-E2(140)	Acetone	5	-	U	Trip blank contamination
460-141967-1	AWC-E2(140)	Bis(2-chloroethyl)ether	-	-	J+	LCS/LCSD recovery above QC limits
460-141967-1	AWC-E2(165)	Acetone	5	-	U	Trip blank contamination
460-141967-1	AWC-E2(165)	Bis(2-chloroethyl)ether	-	-	J+	LCS/LCSD recovery above QC limits
460-141967-1	AWC-K1	Acetone	5	-	U	Trip blank contamination
460-141967-1	DGC-10D	All VOC analytes	-	-	J-/UJ	Surrogate recovery below QC limits
460-141967-1	DGC-10D	Bis(2-chloroethyl)ether	-	-	J+	LCS/LCSD recovery above QC limits
460-141967-1	DGC-10S	Bis(2-chloroethyl)ether	-	-	J+	LCS/LCSD recovery above QC limits
460-141967-1	DGC-11D	Carbon disulfide	-	-	UJ	MS/MSD recovery below QC limits
460-141967-1	FDGW_092717	All VOC analytes	-	-	J-/UJ	Surrogate recovery below QC limits
460-141967-1	MW-18	3-Nitroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	MW-18	4-Chloroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	MW-18	Acetone	5	-	U	Trip blank contamination
460-141967-1	MW-18	Benzo[b]fluoranthene	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	MW-18	Bisphenol-A	-	-	J+	Surrogate recovery above QC limits
460-141967-1	MW-18	N-Methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	MW-34	3-Nitroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	MW-34	4-Chloroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	MW-34	Acetone	5	-	U	Trip blank contamination
460-141967-1	MW-34	Benzo[b]fluoranthene	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	MW-34	N-Methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	P4(UPA)	3-Nitroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	P4(UPA)	4-Chloroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	P4(UPA)	Benzo[b]fluoranthene	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	P4(UPA)	N-Methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	UPA-3D	3-Nitroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	UPA-3D	4-Chloroaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	UPA-3D	Acetone	5	-	U	Trip blank contamination
460-141967-1	UPA-3D	Benzo[b]fluoranthene	-	-	UJ	LCS/LCSD recovery below QC limits
460-141967-1	UPA-3D	N-Methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142184-1	BW-1	Acetone	5	-	U	Rinsate blank contamination
460-142184-1	DGC-5	Bis(2-chloroethyl)ether	-	-	J+	Surrogate recovery above QC limits
460-142184-1	DGC-5	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142184-1	FDGW_100417	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142184-1	MW-29	Acetone	5	-	U	Rinsate blank contamination
460-142184-1	P-6(UPA)	1,2,4-Trimethylbenzene	-	-	J	MS/MSD recovery below QC limits
460-142184-1	P-6(UPA)	3,3'-Dichlorobenzidine	-	-	UJ	MS/MSD recovery below QC limits
460-142184-1	P-6(UPA)	Bis(2-chloroethyl)ether	-	-	J+	Surrogate recovery above QC limits
460-142184-1	P-6(UPA)	Diphenyl ether	-	-	J+	MS/MSD above acceptance limits; Surrogate recovery above QC criteria
460-142184-1	P-6(UPA)	N-Methylaniline	-	-	J	LCS recovery below QC limits; Surrogate recovery above QC criteria
460-142184-1	P-6(UPA)	N-Propylbenzene	-	-	J	MS/MSD recovery below QC limits
460-142184-1	P-6(UPA)	Tetrahydrofuran	-	-	J	MS/MSD recovery below QC limits
460-142184-1	P-6(UPA)	Xylenes, Total	-	-	J	MS/MSD recovery below QC limits
460-142184-1	UPA-01	N-Methylaniline	-	-	J-	LCS recovery below QC limits
460-142184-1	UPA-02D	Bisphenol-A	-	-	J+	Surrogate recovery above QC limits
460-142184-1	UPA-02D	Diphenyl ether	-	-	J+	Surrogate recovery above QC limits
460-142184-1	UPA-02D	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142184-1	UPA-02S	1,4-Dioxane	0.4	-	U	Rinsate blank contamination
460-142184-1	UPA-02S	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142534-1	GA-101	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	B-2D	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	B-2D	SVOC and SVOC SIM det	-	-	J+	Surrogate recovery above QC limits
460-142534-1	B-3D	N-methylaniline	-	-	J-	LCS/LCSD recovery below QC limits
460-142534-1	B-3D	Bisphenol-A	-	-	J+	Surrogate recovery above QC limits
460-142534-1	BG-1	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	C-18D	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	C-19D	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	C-19D	SVOC and SVOC SIM det	-	-	J+	Surrogate recovery above QC limits
460-142534-1	C-1D	Acetone	5	-	U	Trip blank contamination
460-142534-1	C-1D	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	C-20D	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	C-30	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	DDA-02	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	DDA-03	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	DDA-06	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	DDA-12-US	N-methylaniline	-	-	J-	LCS/LCSD recovery below QC limits

Table 2
Data Qualifications
September 2017 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	Sample Name	Constituent	New Result	New RL	Qualifier	Reason
460-142534-1	DGC-2S	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	MW-26N	Tetrahydrofuran	-	-	J+	LCS/LCSD recovery above QC limits
460-142534-1	MW-26N	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	MW-26N	Bis(2-chloroethyl)ether	-	-	J+	Surrogate recovery above QC limits
460-142534-1	MW-26N	Diphenyl ether	-	-	J+	Surrogate recovery above QC limits
460-142534-1	P-4D	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	P-4D	SVOC and SVOC SIM det	-	-	J+	Surrogate recovery above QC limits
460-142534-1	PW-1(U) Discharge	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	PW-1(U) Discharge	Bisphenol-A	-	-	J+	Surrogate recovery above QC limits
460-142534-1	PZ-11-EXT	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142534-1	PZ-4-INTR	N-methylaniline	-	-	UJ	LCS/LCSD recovery below QC limits
460-142922-1	B-4DR	All VOC analytes	-	-	J-/UJ	Surrogate recovery below QC limits
460-142922-1	C-22S	Acetone	5	-	U	Trip blank contamination
460-142922-1	C-22S	N-Methylaniline	-	-	J-	LCS recovery below QC limits
460-142922-1	C-2D	Bisphenol-A	-	-	J+	Surrogate recovery above QC limits
460-142922-1	C-2D	Tetrahydrofuran	-	-	J+	LCS recovery above QC limits
460-142922-1	C-3D	Acetone	5	-	U	Trip blank contamination
460-142922-1	C-3D	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142922-1	DDA-05	Acetone	5	-	U	Trip and rinse blank contamination
460-142922-1	DDA-05	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142922-1	DDA-10-US	Bisphenol-A	10	-	UJ	Surrogate recovery above QC limits; Rinse blank contamination
460-142922-1	DDA-10-US	Acetone	5	-	U	Trip and rinse blank contamination
460-142922-1	DGC-7C	Bisphenol-A	10	-	U	Rinsate blank contamination
460-142922-1	DGC-7C	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142922-1	DGC-7S	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142922-1	FDGW_101017	Acetone	5	-	U	Trip blank contamination
460-142922-1	FDGW_101017	N-Methylaniline	-	-	J-	LCS recovery below QC limits
460-142922-1	MHW-1D	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142922-1	MHW-1M	Bisphenol-A	10	-	UJ	Surrogate recovery above QC limits; Rinse blank contamination
460-142922-1	MHW-1M	Phenol	-	-	J+	Surrogate recovery above QC limits
460-142922-1	PZ-6N	N-Methylaniline	-	-	UJ	LCS recovery below QC limits
460-142922-1	PZ-6S	All VOC detects	-	-	J+	Surrogate recovery above QC limits
460-142922-1	PZ-6S	N-Methylaniline	-	-	UJ	LCS recovery below QC limits

Abbreviations:
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS- Matrix Spike
MSD - Matrix Spike Duplicate
QC - Quality Control
RL - Reporting Limit
VOC - Volatile Organic Compound

Qualifier Definitions:
J: Estimated Result
J-: Estimated Result, Biased Low
J+: Estimated Result, Biased High
U: Non-Detect Result
UJ: Non-Detect Result; RL is Estimated

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G

TestAmerica Job ID: 460-140574-1

Client Sample ID: FDGW_090617 — Lab Sample ID: 460-140574-1

Date Collected: 09/06/17 00:00
Date Received: 09/06/17 20:00
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2720		150	92.1	ug/L		09/09/17 21:30	09/11/17 17:55	1
Manganese, Dissolved	1900		15.0	3.1	ug/L		09/09/17 21:30	09/11/17 17:55	1

Client Sample ID: AWC-E2 (140) — Lab Sample ID: 460-140574-2

Date Collected: 09/06/17 10:10
Date Received: 09/06/17 20:00
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2860		150	92.1	ug/L		09/09/17 21:30	09/11/17 17:00	1
Manganese, Dissolved	1100		15.0	3.1	ug/L		09/09/17 21:30	09/11/17 17:00	1

Client Sample ID: AWC-E1 (132) — Lab Sample ID: 460-140574-3

Date Collected: 09/06/17 10:15
Date Received: 09/06/17 20:00
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2660		150	92.1	ug/L		09/09/17 21:30	09/11/17 17:58	1
Manganese, Dissolved	1910		15.0	3.1	ug/L		09/09/17 21:30	09/11/17 17:58	1

Client Sample ID: AWC-E2 (165) — Lab Sample ID: 460-140574-4

Date Collected: 09/06/17 11:40
Date Received: 09/06/17 20:00
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	1970		150	92.1	ug/L		09/09/17 21:30	09/11/17 18:02	1
Manganese, Dissolved	826		15.0	3.1	ug/L		09/09/17 21:30	09/11/17 18:02	1

Client Sample ID: AWC-E1 (156) — Lab Sample ID: 460-140574-5

Date Collected: 09/06/17 12:00
Date Received: 09/06/17 20:00
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	4400		150	92.1	ug/L		09/09/17 21:30	09/11/17 18:06	1
Manganese, Dissolved	1840		15.0	3.1	ug/L		09/09/17 21:30	09/11/17 18:06	1

Client Sample ID: RBGW_090617 — Lab Sample ID: 460-140574-6

Date Collected: 09/06/17 13:30
Date Received: 09/06/17 20:00
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	92.1	U	150	92.1	ug/L		09/09/17 21:30	09/11/17 18:10	1
Manganese, Dissolved	3.1	U	15.0	3.1	ug/L		09/09/17 21:30	09/11/17 18:10	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G

TestAmerica Job ID: 460-140574-1

Client Sample ID: MW-26N

Lab Sample ID: 460-140574-7
Matrix: Water

Date Collected: 09/06/17 15:00
Date Received: 09/06/17 20:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	109	J	150	92.1	ug/L		09/09/17 21:30	09/11/17 18:26	1
Manganese, Dissolved	2250		15.0	3.1	ug/L		09/09/17 21:30	09/11/17 18:26	1

Client Sample ID: UPA-3D

Lab Sample ID: 460-140574-8
Matrix: Water

Date Collected: 09/06/17 15:25
Date Received: 09/06/17 20:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	482		150	92.1	ug/L		09/09/17 21:30	09/11/17 18:30	1
Manganese, Dissolved	12.2	J	15.0	3.1	ug/L		09/09/17 21:30	09/11/17 18:30	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: TBGW_092717

Lab Sample ID: 460-141967-1

Date Collected: 09/27/17 00:00
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/01/17 12:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*72 - 133*		*10/01/17 12:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 144*		*10/01/17 12:43*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 16:36	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/06/17 16:36	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/06/17 16:36	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/06/17 16:36	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/06/17 16:36	1
Acetone	13		5.0	1.1	ug/L			10/06/17 16:36	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/06/17 16:36	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/06/17 16:36	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/06/17 16:36	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/06/17 16:36	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/17 16:36	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/06/17 16:36	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/06/17 16:36	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/06/17 16:36	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/06/17 16:36	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/06/17 16:36	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/06/17 16:36	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/06/17 16:36	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/06/17 16:36	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/06/17 16:36	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 16:36	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/06/17 16:36	1
Benzene	0.090	U	1.0	0.090	ug/L			10/06/17 16:36	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/06/17 16:36	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/06/17 16:36	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/06/17 16:36	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/06/17 16:36	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/06/17 16:36	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/06/17 16:36	1
Toluene	0.25	U	1.0	0.25	ug/L			10/06/17 16:36	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/06/17 16:36	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/17 16:36	1
Styrene	0.17	U	1.0	0.17	ug/L			10/06/17 16:36	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/06/17 16:36	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/06/17 16:36	1
MTBE	0.13	U	1.0	0.13	ug/L			10/06/17 16:36	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/06/17 16:36	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/06/17 16:36	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/06/17 16:36	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/06/17 16:36	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/06/17 16:36	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/06/17 16:36	1

Client Sample ID: TBGW_092717 Lab Sample ID: 460-141967-1

Date Collected: 09/27/17 00:00 Matrix: Water
Date Received: 09/27/17 20:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/06/17 16:36	1
Indane	0.12	U	1.0	0.12	ug/L			10/06/17 16:36	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/06/17 16:36	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/06/17 16:36	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/17 16:36*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*74 - 132*		*10/06/17 16:36*	*1*
Bromofluorobenzene	*85*		*77 - 124*		*10/06/17 16:36*	*1*
Toluene-d8 (Surr)	*82*		*80 - 120*		*10/06/17 16:36*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*10/06/17 16:36*	*1*

Client Sample ID: FDGW_092717 Lab Sample ID: 460-141967-2

Date Collected: 09/27/17 00:00 Matrix: Water
Date Received: 09/27/17 20:00

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/02/17 12:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*10/02/17 12:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*126*		*71 - 144*		*10/02/17 12:26*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U UJ	1.0	0.22	ug/L			10/06/17 15:05	1
Bromomethane	0.18	U UJ	1.0	0.18	ug/L			10/06/17 15:05	1
Vinyl chloride	0.060	U UJ	1.0	0.060	ug/L			10/06/17 15:05	1
Chloroethane	0.37	U UJ	1.0	0.37	ug/L			10/06/17 15:05	1
Methylene Chloride	0.21	U UJ	1.0	0.21	ug/L			10/06/17 15:05	1
Acetone	1.1	U UJ	5.0	1.1	ug/L			10/06/17 15:05	1
Carbon disulfide	0.22	U UJ	1.0	0.22	ug/L			10/06/17 15:05	1
1,1-Dichloroethene	0.34	U UJ	1.0	0.34	ug/L			10/06/17 15:05	1
1,1-Dichloroethane	0.24	U UJ	1.0	0.24	ug/L			10/06/17 15:05	1
trans-1,2-Dichloroethene	0.18	U UJ	1.0	0.18	ug/L			10/06/17 15:05	1
cis-1,2-Dichloroethene	0.26	U UJ	1.0	0.26	ug/L			10/06/17 15:05	1
Chloroform	0.22	U UJ	1.0	0.22	ug/L			10/06/17 15:05	1
1,2-Dichloroethane	0.25	U UJ	1.0	0.25	ug/L			10/06/17 15:05	1
2-Butanone	2.2	U ± UJ	5.0	2.2	ug/L			10/06/17 15:05	1
1,1,1-Trichloroethane	0.28	U UJ	1.0	0.28	ug/L			10/06/17 15:05	1
Carbon tetrachloride	0.33	U UJ	1.0	0.33	ug/L			10/06/17 15:05	1
Bromodichloromethane	0.15	U UJ	1.0	0.15	ug/L			10/06/17 15:05	1
1,2-Dichloropropane	0.18	U UJ	1.0	0.18	ug/L			10/06/17 15:05	1
cis-1,3-Dichloropropene	0.16	U UJ	1.0	0.16	ug/L			10/06/17 15:05	1
Trichloroethene	0.22	U UJ	1.0	0.22	ug/L			10/06/17 15:05	1
Dibromochloromethane	0.22	U UJ	1.0	0.22	ug/L			10/06/17 15:05	1
1,1,2-Trichloroethane	0.080	U UJ	1.0	0.080	ug/L			10/06/17 15:05	1
Benzene	0.090	U UJ	1.0	0.090	ug/L			10/06/17 15:05	1

Client Sample ID: FDGW_092717

Lab Sample ID: 460-141967-2

Date Collected: 09/27/17 00:00
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	0.19	~~U~~ UJ	1.0	0.19	ug/L			10/06/17 15:05	1
Bromoform	0.18	~~U~~ UJ	1.0	0.18	ug/L			10/06/17 15:05	1
4-Methyl-2-pentanone	0.63	~~U~~ UJ	5.0	0.63	ug/L			10/06/17 15:05	1
2-Hexanone	0.72	~~U~~ UJ	5.0	0.72	ug/L			10/06/17 15:05	1
Tetrachloroethene	0.12	~~U~~ UJ	1.0	0.12	ug/L			10/06/17 15:05	1
1,1,2,2-Tetrachloroethane	0.19	~~U~~ UJ	1.0	0.19	ug/L			10/06/17 15:05	1
Toluene	0.25	~~U~~ UJ	1.0	0.25	ug/L			10/06/17 15:05	1
Chlorobenzene	0.24	~~U~~ UJ	1.0	0.24	ug/L			10/06/17 15:05	1
Ethylbenzene	0.30	~~U~~ UJ	1.0	0.30	ug/L			10/06/17 15:05	1
Styrene	0.17	~~U~~ UJ	1.0	0.17	ug/L			10/06/17 15:05	1
Xylenes, Total	0.28	~~U~~ UJ	2.0	0.28	ug/L			10/06/17 15:05	1
Ethyl ether	0.11	~~U~~ UJ	1.0	0.11	ug/L			10/06/17 15:05	1
MTBE	0.13	~~U~~ UJ	1.0	0.13	ug/L			10/06/17 15:05	1
Tetrahydrofuran	0.36	~~U~~ * UJ	2.0	0.36	ug/L			10/06/17 15:05	1
Cyclohexane	0.26	~~U~~ UJ	1.0	0.26	ug/L			10/06/17 15:05	1
1,2,4-Trimethylbenzene	0.23	~~U~~ UJ	1.0	0.23	ug/L			10/06/17 15:05	1
1,3,5-Trimethylbenzene	0.25	~~U~~ UJ	1.0	0.25	ug/L			10/06/17 15:05	1
Isopropylbenzene	0.32	~~U~~ UJ	1.0	0.32	ug/L			10/06/17 15:05	1
N-Propylbenzene	0.29	~~U~~ UJ	1.0	0.29	ug/L			10/06/17 15:05	1
Methylcyclohexane	0.22	~~U~~ UJ	1.0	0.22	ug/L			10/06/17 15:05	1
Indane	0.12	~~U~~ UJ	1.0	0.12	ug/L			10/06/17 15:05	1
Dichlorofluoromethane	0.21	~~U~~ UJ	1.0	0.21	ug/L			10/06/17 15:05	1
1,2,3-Trimethylbenzene	0.11	~~U~~ UJ	1.0	0.11	ug/L			10/06/17 15:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/17 15:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*74 - 132*		*10/06/17 15:05*	*1*
Bromofluorobenzene	*81*		*77 - 124*		*10/06/17 15:05*	*1*
Toluene-d8 (Surr)	*75*	*X*	*80 - 120*		*10/06/17 15:05*	*1*
Dibromofluoromethane (Surr)	*94*		*72 - 131*		*10/06/17 15:05*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 14:42	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 14:42	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 14:42	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 14:42	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 14:42	1
Bis(2-chloroethyl)ether	0.0090	U	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 14:42	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/03/17 20:33	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 20:33	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/03/17 20:33	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/03/17 20:33	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/03/17 20:33	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:29	10/03/17 20:33	1

Client Sample ID: FDGW_092717

Lab Sample ID: 460-141967-2

Date Collected: 09/27/17 00:00
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/03/17 20:33	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/03/17 20:33	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/03/17 20:33	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/03/17 20:33	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/03/17 20:33	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/03/17 20:33	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/03/17 20:33	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 20:33	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/03/17 20:33	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 20:33	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/03/17 20:33	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 20:33	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/03/17 20:33	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/03/17 20:33	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 20:33	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/03/17 20:33	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:29	10/03/17 20:33	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/03/17 20:33	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 20:33	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 20:33	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/03/17 20:33	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:29	10/03/17 20:33	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 20:33	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/03/17 20:33	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 20:33	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/03/17 20:33	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 20:33	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 20:33	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 20:33	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/03/17 20:33	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:33	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/03/17 20:33	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/03/17 20:33	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/03/17 20:33	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 20:33	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:33	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 20:33	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/03/17 20:33	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 20:33	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 20:33	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/03/17 20:33	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 20:33	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/03/17 20:33	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:33	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/03/17 20:33	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:29	10/03/17 20:33	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 20:33	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/03/17 20:33	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/03/17 20:33	1

Client Sample ID: FDGW_092717

Lab Sample ID: 460-141967-2

Date Collected: 09/27/17 00:00
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 20:33	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/03/17 20:33	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:29	10/03/17 20:33	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 20:33	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 20:33	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/03/17 20:33	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:33	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/03/17 20:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/17 07:29*	*10/03/17 20:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*93*		*51 - 108*	*10/03/17 07:29*	*10/03/17 20:33*	*1*
Phenol-d5	*28*		*14 - 39*	*10/03/17 07:29*	*10/03/17 20:33*	*1*
Terphenyl-d14	*100*		*40 - 148*	*10/03/17 07:29*	*10/03/17 20:33*	*1*
2,4,6-Tribromophenol	*81*		*26 - 139*	*10/03/17 07:29*	*10/03/17 20:33*	*1*
2-Fluorophenol	*45*		*25 - 58*	*10/03/17 07:29*	*10/03/17 20:33*	*1*
2-Fluorobiphenyl	*97*		*45 - 107*	*10/03/17 07:29*	*10/03/17 20:33*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	4700		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:16	1
Manganese, Dissolved	113		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:16	1

Client Sample ID: DGC-11D

Lab Sample ID: 460-141967-3

Date Collected: 09/27/17 10:45
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/01/17 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*10/01/17 18:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*123*		*71 - 144*		*10/01/17 18:32*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 14:42	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/06/17 14:42	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/06/17 14:42	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/06/17 14:42	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/06/17 14:42	1
Acetone	1.1	U	5.0	1.1	ug/L			10/06/17 14:42	1
Carbon disulfide	0.22	U UJ	1.0	0.22	ug/L			10/06/17 14:42	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/06/17 14:42	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/06/17 14:42	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/06/17 14:42	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/17 14:42	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/06/17 14:42	1

Client Sample ID: DGC-11D

Lab Sample ID: 460-141967-3

Date Collected: 09/27/17 10:45
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/06/17 14:42	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/06/17 14:42	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/06/17 14:42	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/06/17 14:42	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/06/17 14:42	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/06/17 14:42	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/06/17 14:42	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/06/17 14:42	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 14:42	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/06/17 14:42	1
Benzene	0.090	U	1.0	0.090	ug/L			10/06/17 14:42	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/06/17 14:42	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/06/17 14:42	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/06/17 14:42	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/06/17 14:42	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/06/17 14:42	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/06/17 14:42	1
Toluene	0.25	U	1.0	0.25	ug/L			10/06/17 14:42	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/06/17 14:42	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/17 14:42	1
Styrene	0.17	U	1.0	0.17	ug/L			10/06/17 14:42	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/06/17 14:42	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/06/17 14:42	1
MTBE	0.13	U	1.0	0.13	ug/L			10/06/17 14:42	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/06/17 14:42	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/06/17 14:42	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/06/17 14:42	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/06/17 14:42	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/06/17 14:42	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/06/17 14:42	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/06/17 14:42	1
Indane	0.12	U	1.0	0.12	ug/L			10/06/17 14:42	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/06/17 14:42	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/06/17 14:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/17 14:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*74 - 132*		*10/06/17 14:42*	*1*
Bromofluorobenzene	*85*		*77 - 124*		*10/06/17 14:42*	*1*
Toluene-d8 (Surr)	*82*		*80 - 120*		*10/06/17 14:42*	*1*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*10/06/17 14:42*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 15:05	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 15:05	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 15:05	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 15:05	1

Client Sample ID: DGC-11D

Lab Sample ID: 460-141967-3

Date Collected: 09/27/17 10:45
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 15:05	1
Bis(2-chloroethyl)ether	0.0090	U	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 15:05	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/03/17 19:25	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 19:25	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/03/17 19:25	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/03/17 19:25	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/03/17 19:25	1
2,4-Dimethylphenol	0.91	U ~~*~~	10	0.91	ug/L		10/03/17 07:29	10/03/17 19:25	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/03/17 19:25	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/03/17 19:25	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/03/17 19:25	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/03/17 19:25	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/03/17 19:25	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/03/17 19:25	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/03/17 19:25	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 19:25	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/03/17 19:25	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 19:25	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/03/17 19:25	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 19:25	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/03/17 19:25	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/03/17 19:25	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 19:25	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/03/17 19:25	1
Naphthalene	0.80	U ~~*~~	10	0.80	ug/L		10/03/17 07:29	10/03/17 19:25	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/03/17 19:25	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 19:25	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 19:25	1
Hexachlorocyclopentadiene	0.61	U ~~F1~~	10	0.61	ug/L		10/03/17 07:29	10/03/17 19:25	1
2-Chloronaphthalene	0.61	U ~~*~~ ~~F1~~	10	0.61	ug/L		10/03/17 07:29	10/03/17 19:25	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 19:25	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/03/17 19:25	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 19:25	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/03/17 19:25	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 19:25	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 19:25	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 19:25	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/03/17 19:25	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 19:25	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/03/17 19:25	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/03/17 19:25	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/03/17 19:25	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 19:25	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 19:25	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 19:25	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/03/17 19:25	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 19:25	1

Client Sample ID: DGC-11D

Lab Sample ID: 460-141967-3

Date Collected: 09/27/17 10:45
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 19:25	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/03/17 19:25	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 19:25	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/03/17 19:25	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 19:25	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/03/17 19:25	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:29	10/03/17 19:25	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 19:25	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/03/17 19:25	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/03/17 19:25	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 19:25	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/03/17 19:25	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:29	10/03/17 19:25	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 19:25	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 19:25	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/03/17 19:25	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 19:25	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/03/17 19:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/17 07:29*	*10/03/17 19:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*105*		*51 - 108*	*10/03/17 07:29*	*10/03/17 19:25*	*1*
Phenol-d5	*28*		*14 - 39*	*10/03/17 07:29*	*10/03/17 19:25*	*1*
Terphenyl-d14	*116*		*40 - 148*	*10/03/17 07:29*	*10/03/17 19:25*	*1*
2,4,6-Tribromophenol	*90*		*26 - 139*	*10/03/17 07:29*	*10/03/17 19:25*	*1*
2-Fluorophenol	*49*		*25 - 58*	*10/03/17 07:29*	*10/03/17 19:25*	*1*
2-Fluorobiphenyl	*109*	*X*	*45 - 107*	*10/03/17 07:29*	*10/03/17 19:25*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	308		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:00	1
Manganese, Dissolved	6.7	J	15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:00	1

Client Sample ID: DGC-11S

Lab Sample ID: 460-141967-4

Date Collected: 09/27/17 11:20
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/01/17 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*10/01/17 18:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*126*		*71 - 144*		*10/01/17 18:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 15:28	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/06/17 15:28	1

Client Sample ID: DGC-11S

Lab Sample ID: 460-141967-4

Date Collected: 09/27/17 11:20
Matrix: Water
Date Received: 09/27/17 20:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/06/17 15:28	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/06/17 15:28	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/06/17 15:28	1
Acetone	1.1	U	5.0	1.1	ug/L			10/06/17 15:28	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/06/17 15:28	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/06/17 15:28	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/06/17 15:28	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/06/17 15:28	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/17 15:28	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/06/17 15:28	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/06/17 15:28	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/06/17 15:28	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/06/17 15:28	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/06/17 15:28	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/06/17 15:28	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/06/17 15:28	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/06/17 15:28	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/06/17 15:28	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 15:28	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/06/17 15:28	1
Benzene	0.090	U	1.0	0.090	ug/L			10/06/17 15:28	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/06/17 15:28	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/06/17 15:28	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/06/17 15:28	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/06/17 15:28	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/06/17 15:28	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/06/17 15:28	1
Toluene	0.25	U	1.0	0.25	ug/L			10/06/17 15:28	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/06/17 15:28	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/17 15:28	1
Styrene	0.17	U	1.0	0.17	ug/L			10/06/17 15:28	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/06/17 15:28	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/06/17 15:28	1
MTBE	0.13	U	1.0	0.13	ug/L			10/06/17 15:28	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/06/17 15:28	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/06/17 15:28	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/06/17 15:28	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/06/17 15:28	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/06/17 15:28	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/06/17 15:28	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/06/17 15:28	1
Indane	0.12	U	1.0	0.12	ug/L			10/06/17 15:28	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/06/17 15:28	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/06/17 15:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/17 15:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*74 - 132*		*10/06/17 15:28*	*1*

Client Sample ID: DGC-11S

Lab Sample ID: 460-141967-4

Date Collected: 09/27/17 11:20
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Bromofluorobenzene	*86*		*77 - 124*		*10/06/17 15:28*	*1*
Toluene-d8 (Surr)	*82*		*80 - 120*		*10/06/17 15:28*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/06/17 15:28*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 15:28	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 15:28	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 15:28	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 15:28	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 15:28	1
Bis(2-chloroethyl)ether	0.0090	U	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 15:28	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/03/17 20:55	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 20:55	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/03/17 20:55	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/03/17 20:55	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/03/17 20:55	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:29	10/03/17 20:55	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/03/17 20:55	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/03/17 20:55	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/03/17 20:55	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/03/17 20:55	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/03/17 20:55	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/03/17 20:55	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/03/17 20:55	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 20:55	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/03/17 20:55	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 20:55	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/03/17 20:55	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 20:55	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/03/17 20:55	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/03/17 20:55	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 20:55	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/03/17 20:55	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:29	10/03/17 20:55	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/03/17 20:55	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 20:55	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 20:55	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/03/17 20:55	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:29	10/03/17 20:55	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 20:55	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/03/17 20:55	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 20:55	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/03/17 20:55	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 20:55	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 20:55	1

Client Sample ID: DGC-11S

Lab Sample ID: 460-141967-4

Date Collected: 09/27/17 11:20
Matrix: Water
Date Received: 09/27/17 20:00

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 20:55	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/03/17 20:55	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:55	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/03/17 20:55	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/03/17 20:55	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/03/17 20:55	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 20:55	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:55	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 20:55	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/03/17 20:55	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 20:55	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 20:55	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/03/17 20:55	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 20:55	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/03/17 20:55	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:55	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/03/17 20:55	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:29	10/03/17 20:55	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 20:55	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/03/17 20:55	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/03/17 20:55	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 20:55	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/03/17 20:55	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:29	10/03/17 20:55	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 20:55	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 20:55	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/03/17 20:55	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 20:55	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/03/17 20:55	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/17 07:29*	*10/03/17 20:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*82*		*51 - 108*	*10/03/17 07:29*	*10/03/17 20:55*	*1*
Phenol-d5	*25*		*14 - 39*	*10/03/17 07:29*	*10/03/17 20:55*	*1*
Terphenyl-d14	*95*		*40 - 148*	*10/03/17 07:29*	*10/03/17 20:55*	*1*
2,4,6-Tribromophenol	*66*		*26 - 139*	*10/03/17 07:29*	*10/03/17 20:55*	*1*
2-Fluorophenol	*40*		*25 - 58*	*10/03/17 07:29*	*10/03/17 20:55*	*1*
2-Fluorobiphenyl	*83*		*45 - 107*	*10/03/17 07:29*	*10/03/17 20:55*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	4640		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:20	1
Manganese, Dissolved	113		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:20	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: RBGW_092717

Lab Sample ID: 460-141967-5

Date Collected: 09/27/17 13:40
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/01/17 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*72 - 133*		*10/01/17 13:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 144*		*10/01/17 13:53*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 14:19	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/06/17 14:19	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/06/17 14:19	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/06/17 14:19	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/06/17 14:19	1
Acetone	9.0		5.0	1.1	ug/L			10/06/17 14:19	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/06/17 14:19	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/06/17 14:19	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/06/17 14:19	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/06/17 14:19	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/17 14:19	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/06/17 14:19	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/06/17 14:19	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/06/17 14:19	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/06/17 14:19	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/06/17 14:19	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/06/17 14:19	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/06/17 14:19	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/06/17 14:19	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/06/17 14:19	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 14:19	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/06/17 14:19	1
Benzene	0.090	U	1.0	0.090	ug/L			10/06/17 14:19	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/06/17 14:19	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/06/17 14:19	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/06/17 14:19	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/06/17 14:19	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/06/17 14:19	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/06/17 14:19	1
Toluene	0.25	U	1.0	0.25	ug/L			10/06/17 14:19	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/06/17 14:19	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/17 14:19	1
Styrene	0.17	U	1.0	0.17	ug/L			10/06/17 14:19	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/06/17 14:19	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/06/17 14:19	1
MTBE	0.13	U	1.0	0.13	ug/L			10/06/17 14:19	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/06/17 14:19	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/06/17 14:19	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/06/17 14:19	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/06/17 14:19	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/06/17 14:19	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/06/17 14:19	1

Client Sample ID: RBGW_092717

Lab Sample ID: 460-141967-5

Date Collected: 09/27/17 13:40
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/06/17 14:19	1
Indane	0.12	U	1.0	0.12	ug/L			10/06/17 14:19	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/06/17 14:19	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/06/17 14:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*18*	*J*	*ug/L*		*3.09*			*10/06/17 14:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*74 - 132*		*10/06/17 14:19*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/06/17 14:19*	*1*
Toluene-d8 (Surr)	*87*		*80 - 120*		*10/06/17 14:19*	*1*
Dibromofluoromethane (Surr)	*101*		*72 - 131*		*10/06/17 14:19*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 15:50	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 15:50	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 15:50	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 15:50	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 15:50	1
Bis(2-chloroethyl)ether	0.0090	U	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 15:50	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/03/17 21:18	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 21:18	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/03/17 21:18	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/03/17 21:18	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/03/17 21:18	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:29	10/03/17 21:18	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/03/17 21:18	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/03/17 21:18	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/03/17 21:18	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/03/17 21:18	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/03/17 21:18	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/03/17 21:18	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/03/17 21:18	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 21:18	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/03/17 21:18	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 21:18	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/03/17 21:18	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 21:18	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/03/17 21:18	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/03/17 21:18	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 21:18	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/03/17 21:18	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:29	10/03/17 21:18	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/03/17 21:18	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 21:18	1

Client Sample ID: RBGW_092717

Lab Sample ID: 460-141967-5

Date Collected: 09/27/17 13:40
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 21:18	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/03/17 21:18	1
2-Chloronaphthalene	0.61	U-*	10	0.61	ug/L		10/03/17 07:29	10/03/17 21:18	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 21:18	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/03/17 21:18	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 21:18	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/03/17 21:18	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 21:18	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 21:18	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 21:18	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/03/17 21:18	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:18	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/03/17 21:18	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/03/17 21:18	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/03/17 21:18	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 21:18	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:18	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 21:18	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/03/17 21:18	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 21:18	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 21:18	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/03/17 21:18	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 21:18	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/03/17 21:18	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:18	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/03/17 21:18	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:29	10/03/17 21:18	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 21:18	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/03/17 21:18	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/03/17 21:18	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 21:18	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/03/17 21:18	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:29	10/03/17 21:18	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 21:18	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 21:18	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/03/17 21:18	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:18	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/03/17 21:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/17 07:29*	*10/03/17 21:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*102*		*51 - 108*	*10/03/17 07:29*	*10/03/17 21:18*	*1*
Phenol-d5	*33*		*14 - 39*	*10/03/17 07:29*	*10/03/17 21:18*	*1*
Terphenyl-d14	*122*		*40 - 148*	*10/03/17 07:29*	*10/03/17 21:18*	*1*
2,4,6-Tribromophenol	*86*		*26 - 139*	*10/03/17 07:29*	*10/03/17 21:18*	*1*
2-Fluorophenol	*53*		*25 - 58*	*10/03/17 07:29*	*10/03/17 21:18*	*1*
2-Fluorobiphenyl	*106*		*45 - 107*	*10/03/17 07:29*	*10/03/17 21:18*	*1*

Client Sample ID: RBGW_092717

Lab Sample ID: 460-141967-5

Date Collected: 09/27/17 13:40
Date Received: 09/27/17 20:00

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	92.1	U	150	92.1	ug/L		10/02/17 09:14	10/03/17 13:24	1
Manganese, Dissolved	3.1	U	15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:24	1

Client Sample ID: DGC-10S

Lab Sample ID: 460-141967-6

Date Collected: 09/27/17 15:45
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.1		0.40	0.20	ug/L			10/01/17 19:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*10/01/17 19:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*123*		*71 - 144*		*10/01/17 19:18*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 15:51	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/06/17 15:51	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/06/17 15:51	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/06/17 15:51	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/06/17 15:51	1
Acetone	1.1	U	5.0	1.1	ug/L			10/06/17 15:51	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/06/17 15:51	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/06/17 15:51	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/06/17 15:51	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/06/17 15:51	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/17 15:51	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/06/17 15:51	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/06/17 15:51	1
2-Butanone	2.2	U-*	5.0	2.2	ug/L			10/06/17 15:51	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/06/17 15:51	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/06/17 15:51	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/06/17 15:51	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/06/17 15:51	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/06/17 15:51	1
Trichloroethene	**0.39**	J	1.0	0.22	ug/L			10/06/17 15:51	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/06/17 15:51	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/06/17 15:51	1
Benzene	0.090	U	1.0	0.090	ug/L			10/06/17 15:51	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/06/17 15:51	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/06/17 15:51	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/06/17 15:51	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/06/17 15:51	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/06/17 15:51	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/06/17 15:51	1
Toluene	0.25	U	1.0	0.25	ug/L			10/06/17 15:51	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/06/17 15:51	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/17 15:51	1
Styrene	0.17	U	1.0	0.17	ug/L			10/06/17 15:51	1

Client Sample ID: DGC-10S

Lab Sample ID: 460-141967-6

Date Collected: 09/27/17 15:45
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/06/17 15:51	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/06/17 15:51	1
MTBE	0.13	U	1.0	0.13	ug/L			10/06/17 15:51	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/06/17 15:51	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/06/17 15:51	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/06/17 15:51	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/06/17 15:51	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/06/17 15:51	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/06/17 15:51	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/06/17 15:51	1
Indane	0.12	U	1.0	0.12	ug/L			10/06/17 15:51	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/06/17 15:51	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/06/17 15:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/17 15:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*74 - 132*		*10/06/17 15:51*	*1*
Bromofluorobenzene	*85*		*77 - 124*		*10/06/17 15:51*	*1*
Toluene-d8 (Surr)	*80*		*80 - 120*		*10/06/17 15:51*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/06/17 15:51*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 16:13	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 16:13	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 16:13	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 16:13	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 16:13	1
Bis(2-chloroethyl)ether	0.14	J+	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 16:13	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/03/17 21:40	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 21:40	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/03/17 21:40	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/03/17 21:40	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/03/17 21:40	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:29	10/03/17 21:40	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/03/17 21:40	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/03/17 21:40	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/03/17 21:40	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/03/17 21:40	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/03/17 21:40	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/03/17 21:40	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/03/17 21:40	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 21:40	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/03/17 21:40	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 21:40	1

Client Sample ID: DGC-10S

Lab Sample ID: 460-141967-6

Date Collected: 09/27/17 15:45
Matrix: Water
Date Received: 09/27/17 20:00

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/03/17 21:40	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 21:40	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/03/17 21:40	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/03/17 21:40	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 21:40	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/03/17 21:40	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:29	10/03/17 21:40	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/03/17 21:40	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 21:40	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 21:40	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/03/17 21:40	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:29	10/03/17 21:40	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 21:40	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/03/17 21:40	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 21:40	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/03/17 21:40	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 21:40	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 21:40	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 21:40	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/03/17 21:40	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:40	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/03/17 21:40	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/03/17 21:40	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/03/17 21:40	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 21:40	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:40	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 21:40	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/03/17 21:40	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 21:40	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 21:40	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/03/17 21:40	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 21:40	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/03/17 21:40	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:40	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/03/17 21:40	1
Bis(2-ethylhexyl) phthalate	**1.0**	**J**	2.0	0.72	ug/L		10/03/17 07:29	10/03/17 21:40	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 21:40	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/03/17 21:40	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/03/17 21:40	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 21:40	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/03/17 21:40	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:29	10/03/17 21:40	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 21:40	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 21:40	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/03/17 21:40	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 21:40	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/03/17 21:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*12*	*J*	*ug/L*		*5.07*		*10/03/17 07:29*	*10/03/17 21:40*	*1*

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	71		51 - 108	10/03/17 07:29	10/03/17 21:40	1
Phenol-d5	24		14 - 39	10/03/17 07:29	10/03/17 21:40	1
Terphenyl-d14	108		40 - 148	10/03/17 07:29	10/03/17 21:40	1
2,4,6-Tribromophenol	81		26 - 139	10/03/17 07:29	10/03/17 21:40	1
2-Fluorophenol	36		25 - 58	10/03/17 07:29	10/03/17 21:40	1
2-Fluorobiphenyl	77		45 - 107	10/03/17 07:29	10/03/17 21:40	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	8980		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:28	1
Manganese, Dissolved	318		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:28	1

Client Sample ID: DGC-10D — Lab Sample ID: 460-141967-7

Date Collected: 09/27/17 15:50 Matrix: Water
Date Received: 09/27/17 20:00

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.88		0.40	0.20	ug/L			10/01/17 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	88		72 - 133		10/01/17 19:42	1
1,2-Dichloroethane-d4 (Surr)	126		71 - 144		10/01/17 19:42	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U UJ	1.0	0.22	ug/L			10/06/17 16:14	1
Bromomethane	0.18	U UJ	1.0	0.18	ug/L			10/06/17 16:14	1
Vinyl chloride	0.060	U UJ	1.0	0.060	ug/L			10/06/17 16:14	1
Chloroethane	0.37	U UJ	1.0	0.37	ug/L			10/06/17 16:14	1
Methylene Chloride	0.21	U UJ	1.0	0.21	ug/L			10/06/17 16:14	1
Acetone	1.1	U UJ	5.0	1.1	ug/L			10/06/17 16:14	1
Carbon disulfide	0.22	U UJ	1.0	0.22	ug/L			10/06/17 16:14	1
1,1-Dichloroethene	0.34	U UJ	1.0	0.34	ug/L			10/06/17 16:14	1
1,1-Dichloroethane	0.24	U UJ	1.0	0.24	ug/L			10/06/17 16:14	1
trans-1,2-Dichloroethene	0.18	U UJ	1.0	0.18	ug/L			10/06/17 16:14	1
cis-1,2-Dichloroethene	0.26	U UJ	1.0	0.26	ug/L			10/06/17 16:14	1
Chloroform	0.22	U UJ	1.0	0.22	ug/L			10/06/17 16:14	1
1,2-Dichloroethane	0.25	U UJ	1.0	0.25	ug/L			10/06/17 16:14	1
2-Butanone	2.2	U * UJ	5.0	2.2	ug/L			10/06/17 16:14	1
1,1,1-Trichloroethane	0.28	U UJ	1.0	0.28	ug/L			10/06/17 16:14	1
Carbon tetrachloride	0.33	U UJ	1.0	0.33	ug/L			10/06/17 16:14	1
Bromodichloromethane	0.15	U UJ	1.0	0.15	ug/L			10/06/17 16:14	1
1,2-Dichloropropane	0.18	U UJ	1.0	0.18	ug/L			10/06/17 16:14	1
cis-1,3-Dichloropropene	0.16	U UJ	1.0	0.16	ug/L			10/06/17 16:14	1
Trichloroethene	0.24	J J-	1.0	0.22	ug/L			10/06/17 16:14	1
Dibromochloromethane	0.22	U UJ	1.0	0.22	ug/L			10/06/17 16:14	1
1,1,2-Trichloroethane	0.080	U UJ	1.0	0.080	ug/L			10/06/17 16:14	1
Benzene	0.090	U UJ	1.0	0.090	ug/L			10/06/17 16:14	1
trans-1,3-Dichloropropene	0.19	U UJ	1.0	0.19	ug/L			10/06/17 16:14	1
Bromoform	0.18	U UJ	1.0	0.18	ug/L			10/06/17 16:14	1
4-Methyl-2-pentanone	0.63	U UJ	5.0	0.63	ug/L			10/06/17 16:14	1
2-Hexanone	0.72	U UJ	5.0	0.72	ug/L			10/06/17 16:14	1
Tetrachloroethene	0.29	J J-	1.0	0.12	ug/L			10/06/17 16:14	1
1,1,2,2-Tetrachloroethane	0.19	U UJ	1.0	0.19	ug/L			10/06/17 16:14	1

Client Sample ID: DGC-10D

Lab Sample ID: 460-141967-7

Date Collected: 09/27/17 15:50
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.25	~~U~~ UJ	1.0	0.25	ug/L			10/06/17 16:14	1
Chlorobenzene	0.24	~~U~~ UJ	1.0	0.24	ug/L			10/06/17 16:14	1
Ethylbenzene	0.30	~~U~~ UJ	1.0	0.30	ug/L			10/06/17 16:14	1
Styrene	0.17	~~U~~ UJ	1.0	0.17	ug/L			10/06/17 16:14	1
Xylenes, Total	0.28	~~U~~ UJ	2.0	0.28	ug/L			10/06/17 16:14	1
Ethyl ether	0.11	~~U~~ UJ	1.0	0.11	ug/L			10/06/17 16:14	1
MTBE	**0.47**	~~J~~ J-	1.0	0.13	ug/L			10/06/17 16:14	1
Tetrahydrofuran	0.36	~~U~~ * UJ	2.0	0.36	ug/L			10/06/17 16:14	1
Cyclohexane	0.26	~~U~~ UJ	1.0	0.26	ug/L			10/06/17 16:14	1
1,2,4-Trimethylbenzene	0.23	~~U~~ UJ	1.0	0.23	ug/L			10/06/17 16:14	1
1,3,5-Trimethylbenzene	0.25	~~U~~ UJ	1.0	0.25	ug/L			10/06/17 16:14	1
Isopropylbenzene	0.32	~~U~~ UJ	1.0	0.32	ug/L			10/06/17 16:14	1
N-Propylbenzene	0.29	~~U~~ UJ	1.0	0.29	ug/L			10/06/17 16:14	1
Methylcyclohexane	0.22	~~U~~ UJ	1.0	0.22	ug/L			10/06/17 16:14	1
Indane	0.12	~~U~~ UJ	1.0	0.12	ug/L			10/06/17 16:14	1
Dichlorofluoromethane	0.21	~~U~~ UJ	1.0	0.21	ug/L			10/06/17 16:14	1
1,2,3-Trimethylbenzene	0.11	~~U~~ UJ	1.0	0.11	ug/L			10/06/17 16:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/17 16:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*74*		*74 - 132*		*10/06/17 16:14*	*1*
Bromofluorobenzene	*65*	*X*	*77 - 124*		*10/06/17 16:14*	*1*
Toluene-d8 (Surr)	*65*	*X*	*80 - 120*		*10/06/17 16:14*	*1*
Dibromofluoromethane (Surr)	*77*		*72 - 131*		*10/06/17 16:14*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 16:35	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 16:35	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 16:35	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 16:35	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 16:35	1
Bis(2-chloroethyl)ether	**0.055**	J+	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 16:35	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/03/17 22:03	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 22:03	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/03/17 22:03	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/03/17 22:03	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/03/17 22:03	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:29	10/03/17 22:03	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/03/17 22:03	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/03/17 22:03	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/03/17 22:03	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/03/17 22:03	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/03/17 22:03	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/03/17 22:03	1

Client Sample ID: DGC-10D

Lab Sample ID: 460-141967-7

Date Collected: 09/27/17 15:50
Matrix: Water
Date Received: 09/27/17 20:00

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/03/17 22:03	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 22:03	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/03/17 22:03	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 22:03	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/03/17 22:03	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 22:03	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/03/17 22:03	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/03/17 22:03	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 22:03	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/03/17 22:03	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:29	10/03/17 22:03	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/03/17 22:03	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 22:03	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 22:03	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/03/17 22:03	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:29	10/03/17 22:03	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 22:03	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/03/17 22:03	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 22:03	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/03/17 22:03	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 22:03	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/03/17 22:03	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 22:03	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/03/17 22:03	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 22:03	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/03/17 22:03	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/03/17 22:03	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/03/17 22:03	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/03/17 22:03	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 22:03	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/03/17 22:03	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/03/17 22:03	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/03/17 22:03	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/03/17 22:03	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/03/17 22:03	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/03/17 22:03	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/03/17 22:03	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 22:03	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/03/17 22:03	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:29	10/03/17 22:03	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/03/17 22:03	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/03/17 22:03	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/03/17 22:03	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/03/17 22:03	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/03/17 22:03	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:29	10/03/17 22:03	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/03/17 22:03	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/03/17 22:03	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/03/17 22:03	1

Client Sample ID: DGC-10D

Lab Sample ID: 460-141967-7

Date Collected: 09/27/17 15:50
Date Received: 09/27/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/03/17 22:03	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/03/17 22:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/17 07:29*	*10/03/17 22:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*79*		*51 - 108*	*10/03/17 07:29*	*10/03/17 22:03*	*1*
Phenol-d5	*23*		*14 - 39*	*10/03/17 07:29*	*10/03/17 22:03*	*1*
Terphenyl-d14	*93*		*40 - 148*	*10/03/17 07:29*	*10/03/17 22:03*	*1*
2,4,6-Tribromophenol	*66*		*26 - 139*	*10/03/17 07:29*	*10/03/17 22:03*	*1*
2-Fluorophenol	*37*		*25 - 58*	*10/03/17 07:29*	*10/03/17 22:03*	*1*
2-Fluorobiphenyl	*80*		*45 - 107*	*10/03/17 07:29*	*10/03/17 22:03*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	92.1	U	150	92.1	ug/L		10/02/17 09:14	10/03/17 13:43	1
Manganese, Dissolved	102		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:43	1

Client Sample ID: TBGW_092817

Lab Sample ID: 460-141988-1

Date Collected: 09/28/17 00:00
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/01/17 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/01/17 13:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*71 - 144*		*10/01/17 13:06*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 21:20	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/07/17 21:20	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/07/17 21:20	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/07/17 21:20	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/07/17 21:20	1
Acetone	8.8		5.0	1.1	ug/L			10/07/17 21:20	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/07/17 21:20	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/07/17 21:20	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/07/17 21:20	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/07/17 21:20	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/07/17 21:20	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/07/17 21:20	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/07/17 21:20	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/07/17 21:20	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/07/17 21:20	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/07/17 21:20	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/07/17 21:20	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/07/17 21:20	1

Client Sample ID: TBGW_092817

Lab Sample ID: 460-141988-1

Date Collected: 09/28/17 00:00
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/07/17 21:20	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/07/17 21:20	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 21:20	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/07/17 21:20	1
Benzene	0.090	U	1.0	0.090	ug/L			10/07/17 21:20	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/07/17 21:20	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/07/17 21:20	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/07/17 21:20	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/07/17 21:20	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/07/17 21:20	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/07/17 21:20	1
Toluene	0.25	U	1.0	0.25	ug/L			10/07/17 21:20	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/07/17 21:20	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/07/17 21:20	1
Styrene	0.17	U	1.0	0.17	ug/L			10/07/17 21:20	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/07/17 21:20	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/07/17 21:20	1
MTBE	0.13	U	1.0	0.13	ug/L			10/07/17 21:20	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/07/17 21:20	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/07/17 21:20	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/07/17 21:20	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/07/17 21:20	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/07/17 21:20	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/07/17 21:20	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/07/17 21:20	1
Indane	0.12	U	1.0	0.12	ug/L			10/07/17 21:20	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/07/17 21:20	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/07/17 21:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/07/17 21:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*74 - 132*		*10/07/17 21:20*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/07/17 21:20*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/07/17 21:20*	*1*
Dibromofluoromethane (Surr)	*105*		*72 - 131*		*10/07/17 21:20*	*1*

Client Sample ID: AWC-E2(140)

Lab Sample ID: 460-141988-2

Date Collected: 09/28/17 09:50
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 00:18	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/08/17 00:18	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/08/17 00:18	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/08/17 00:18	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/08/17 00:18	1
Acetone	5.0 ~~4.4~~	~~J~~ UJ	5.0	1.1	ug/L			10/08/17 00:18	1

Client Sample ID: AWC-E2(140)

Lab Sample ID: 460-141988-2

Date Collected: 09/28/17 09:50
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	**0.40**	J	1.0	0.22	ug/L			10/08/17 00:18	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/08/17 00:18	1
1,1-Dichloroethane	**0.58**	J	1.0	0.24	ug/L			10/08/17 00:18	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/08/17 00:18	1
cis-1,2-Dichloroethene	**0.47**	J	1.0	0.26	ug/L			10/08/17 00:18	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/08/17 00:18	1
1,2-Dichloroethane	**1.4**		1.0	0.25	ug/L			10/08/17 00:18	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/08/17 00:18	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/08/17 00:18	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/08/17 00:18	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/08/17 00:18	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/08/17 00:18	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/08/17 00:18	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/08/17 00:18	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 00:18	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/08/17 00:18	1
Benzene	**0.99**	J	1.0	0.090	ug/L			10/08/17 00:18	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/08/17 00:18	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/08/17 00:18	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/08/17 00:18	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/08/17 00:18	1
Tetrachloroethene	**0.12**	J	1.0	0.12	ug/L			10/08/17 00:18	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/08/17 00:18	1
Toluene	0.25	U	1.0	0.25	ug/L			10/08/17 00:18	1
Chlorobenzene	**7.1**		1.0	0.24	ug/L			10/08/17 00:18	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/08/17 00:18	1
Styrene	0.17	U	1.0	0.17	ug/L			10/08/17 00:18	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/08/17 00:18	1
Ethyl ether	**3.6**		1.0	0.11	ug/L			10/08/17 00:18	1
MTBE	**1.0**		1.0	0.13	ug/L			10/08/17 00:18	1
Tetrahydrofuran	**8.8**		2.0	0.36	ug/L			10/08/17 00:18	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/08/17 00:18	1
1,4-Dioxane	**110**		50	8.7	ug/L			10/08/17 00:18	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/08/17 00:18	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/08/17 00:18	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/08/17 00:18	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/08/17 00:18	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/08/17 00:18	1
Indane	0.12	U	1.0	0.12	ug/L			10/08/17 00:18	1
Dichlorofluoromethane	**4.5**		1.0	0.21	ug/L			10/08/17 00:18	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/08/17 00:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/08/17 00:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*74 - 132*		*10/08/17 00:18*	*1*
Bromofluorobenzene	*90*		*77 - 124*		*10/08/17 00:18*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/08/17 00:18*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/08/17 00:18*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.37	U	0.50	0.37	ug/L		10/03/17 07:29	10/06/17 11:47	10
Benzo[a]pyrene	0.26	U	0.50	0.26	ug/L		10/03/17 07:29	10/06/17 11:47	10
Benzo[b]fluoranthene	0.12	U	0.50	0.12	ug/L		10/03/17 07:29	10/06/17 11:47	10
Hexachlorobenzene	0.090	U *	0.20	0.090	ug/L		10/03/17 07:29	10/06/17 11:47	10
Pentachlorophenol	0.77	U	2.0	0.77	ug/L		10/03/17 07:29	10/06/17 11:47	10
Bis(2-chloroethyl)ether	21	J+	0.20	0.090	ug/L		10/03/17 07:29	10/06/17 11:47	10

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/04/17 01:26	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/04/17 01:26	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/04/17 01:26	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/04/17 01:26	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/04/17 01:26	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:29	10/04/17 01:26	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/04/17 01:26	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/04/17 01:26	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/04/17 01:26	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/04/17 01:26	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/04/17 01:26	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/04/17 01:26	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/04/17 01:26	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/04/17 01:26	1
1,4-Dichlorobenzene	0.72	J	10	0.66	ug/L		10/03/17 07:29	10/04/17 01:26	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/04/17 01:26	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/04/17 01:26	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/04/17 01:26	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/04/17 01:26	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/04/17 01:26	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/04/17 01:26	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/04/17 01:26	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:29	10/04/17 01:26	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/04/17 01:26	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/04/17 01:26	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/04/17 01:26	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/04/17 01:26	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:29	10/04/17 01:26	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 01:26	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/04/17 01:26	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 01:26	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/04/17 01:26	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/04/17 01:26	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/04/17 01:26	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/04/17 01:26	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/04/17 01:26	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:26	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/04/17 01:26	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/04/17 01:26	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/04/17 01:26	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/04/17 01:26	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:26	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 01:26	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/04/17 01:26	1

Client Sample ID: AWC-E2(140)

Lab Sample ID: 460-141988-2

Date Collected: 09/28/17 09:50
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/04/17 01:26	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/04/17 01:26	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/04/17 01:26	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/04/17 01:26	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/04/17 01:26	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:26	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/04/17 01:26	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:29	10/04/17 01:26	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/04/17 01:26	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/04/17 01:26	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/04/17 01:26	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/04/17 01:26	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/04/17 01:26	1
Diphenyl ether	**1.2**	**J**	10	0.50	ug/L		10/03/17 07:29	10/04/17 01:26	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/04/17 01:26	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/04/17 01:26	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/04/17 01:26	1
Bisphenol-A	**6.7**	**J**	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:26	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/04/17 01:26	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*8.0*	*J N*	*ug/L*		*2.04*	*123-91-1*	*10/03/17 07:29*	*10/04/17 01:26*	*1*
Unknown	*9.0*	*J*	*ug/L*		*5.07*		*10/03/17 07:29*	*10/04/17 01:26*	*1*
Unknown	*32*	*J*	*ug/L*		*7.07*		*10/03/17 07:29*	*10/04/17 01:26*	*1*
Benzylamine	*6.6*	*J N*	*ug/L*		*7.36*	*100-46-9*	*10/03/17 07:29*	*10/04/17 01:26*	*1*
Cyclic octaatomic sulfur	*6.5*	*J N*	*ug/L*		*9.90*	*10544-50-0*	*10/03/17 07:29*	*10/04/17 01:26*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*104*		*51 - 108*	*10/03/17 07:29*	*10/04/17 01:26*	*1*
Phenol-d5	*29*		*14 - 39*	*10/03/17 07:29*	*10/04/17 01:26*	*1*
Terphenyl-d14	*117*		*40 - 148*	*10/03/17 07:29*	*10/04/17 01:26*	*1*
2,4,6-Tribromophenol	*95*		*26 - 139*	*10/03/17 07:29*	*10/04/17 01:26*	*1*
2-Fluorophenol	*48*		*25 - 58*	*10/03/17 07:29*	*10/04/17 01:26*	*1*
2-Fluorobiphenyl	*106*		*45 - 107*	*10/03/17 07:29*	*10/04/17 01:26*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**5310**		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:47	1
Manganese, Dissolved	**1110**		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:47	1

Client Sample ID: AWC-E1(132)

Lab Sample ID: 460-141988-3

Date Collected: 09/28/17 10:30
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**19**		0.40	0.20	ug/L			10/01/17 20:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*72 - 133*		*10/01/17 20:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*127*		*71 - 144*		*10/01/17 20:28*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 22:04	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/07/17 22:04	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/07/17 22:04	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/07/17 22:04	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/07/17 22:04	1
Acetone	1.1	U	5.0	1.1	ug/L			10/07/17 22:04	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/07/17 22:04	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/07/17 22:04	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/07/17 22:04	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/07/17 22:04	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/07/17 22:04	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/07/17 22:04	1
1,2-Dichloroethane	**0.28**	J	1.0	0.25	ug/L			10/07/17 22:04	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/07/17 22:04	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/07/17 22:04	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/07/17 22:04	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/07/17 22:04	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/07/17 22:04	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/07/17 22:04	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/07/17 22:04	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 22:04	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/07/17 22:04	1
Benzene	**0.27**	J	1.0	0.090	ug/L			10/07/17 22:04	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/07/17 22:04	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/07/17 22:04	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/07/17 22:04	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/07/17 22:04	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/07/17 22:04	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/07/17 22:04	1
Toluene	0.25	U	1.0	0.25	ug/L			10/07/17 22:04	1
Chlorobenzene	**4.9**		1.0	0.24	ug/L			10/07/17 22:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/07/17 22:04	1
Styrene	0.17	U	1.0	0.17	ug/L			10/07/17 22:04	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/07/17 22:04	1
Ethyl ether	**9.7**		1.0	0.11	ug/L			10/07/17 22:04	1
MTBE	**0.89**	J	1.0	0.13	ug/L			10/07/17 22:04	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/07/17 22:04	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/07/17 22:04	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/07/17 22:04	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/07/17 22:04	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/07/17 22:04	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/07/17 22:04	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/07/17 22:04	1
Indane	0.12	U	1.0	0.12	ug/L			10/07/17 22:04	1
Dichlorofluoromethane	**0.36**	J	1.0	0.21	ug/L			10/07/17 22:04	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/07/17 22:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/07/17 22:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*74 - 132*		*10/07/17 22:04*	*1*
Bromofluorobenzene	*92*		*77 - 124*		*10/07/17 22:04*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/07/17 22:04*	*1*

Client Sample ID: AWC-E1(132)

Lab Sample ID: 460-141988-3

Date Collected: 09/28/17 10:30
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	109		72 - 131		10/07/17 22:04	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 20:50	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 20:50	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 20:50	1
Hexachlorobenzene	0.0090	U ±	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 20:50	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 20:50	1
Bis(2-chloroethyl)ether	2.7	J+	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 20:50	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/04/17 01:49	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/04/17 01:49	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/04/17 01:49	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/04/17 01:49	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/04/17 01:49	1
2,4-Dimethylphenol	0.91	U ±	10	0.91	ug/L		10/03/17 07:29	10/04/17 01:49	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/04/17 01:49	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/04/17 01:49	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/04/17 01:49	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/04/17 01:49	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/04/17 01:49	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/04/17 01:49	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/04/17 01:49	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/04/17 01:49	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/04/17 01:49	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/04/17 01:49	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/04/17 01:49	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/04/17 01:49	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/04/17 01:49	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/04/17 01:49	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/04/17 01:49	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/04/17 01:49	1
Naphthalene	0.80	U ±	10	0.80	ug/L		10/03/17 07:29	10/04/17 01:49	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/04/17 01:49	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/04/17 01:49	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/04/17 01:49	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/04/17 01:49	1
2-Chloronaphthalene	0.61	U ±	10	0.61	ug/L		10/03/17 07:29	10/04/17 01:49	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 01:49	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/04/17 01:49	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 01:49	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/04/17 01:49	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/04/17 01:49	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/04/17 01:49	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/04/17 01:49	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/04/17 01:49	1

Client Sample ID: AWC-E1(132)

Lab Sample ID: 460-141988-3

Date Collected: 09/28/17 10:30
Matrix: Water
Date Received: 09/28/17 20:35

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:49	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/04/17 01:49	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/04/17 01:49	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/04/17 01:49	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/04/17 01:49	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:49	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 01:49	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/04/17 01:49	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/04/17 01:49	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/04/17 01:49	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/04/17 01:49	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/04/17 01:49	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/04/17 01:49	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:49	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/04/17 01:49	1
Bis(2-ethylhexyl) phthalate	**1.1**	**J**	2.0	0.72	ug/L		10/03/17 07:29	10/04/17 01:49	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/04/17 01:49	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/04/17 01:49	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/04/17 01:49	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/04/17 01:49	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/04/17 01:49	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:29	10/04/17 01:49	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/04/17 01:49	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/04/17 01:49	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/04/17 01:49	1
Bisphenol-A	**5.9**	**J**	10	1.0	ug/L		10/03/17 07:29	10/04/17 01:49	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/04/17 01:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/17 07:29*	*10/04/17 01:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*100*		*51 - 108*	*10/03/17 07:29*	*10/04/17 01:49*	*1*
Phenol-d5	*28*		*14 - 39*	*10/03/17 07:29*	*10/04/17 01:49*	*1*
Terphenyl-d14	*116*		*40 - 148*	*10/03/17 07:29*	*10/04/17 01:49*	*1*
2,4,6-Tribromophenol	*89*		*26 - 139*	*10/03/17 07:29*	*10/04/17 01:49*	*1*
2-Fluorophenol	*47*		*25 - 58*	*10/03/17 07:29*	*10/04/17 01:49*	*1*
2-Fluorobiphenyl	*103*		*45 - 107*	*10/03/17 07:29*	*10/04/17 01:49*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**3700**		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:51	1
Manganese, Dissolved	**2010**		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:51	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: AWC-E2(165)

Lab Sample ID: 460-141988-4

Date Collected: 09/28/17 11:55
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 22:27	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/07/17 22:27	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/07/17 22:27	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/07/17 22:27	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/07/17 22:27	1
Acetone	5.0 ~~3.1~~	J U	5.0	1.1	ug/L			10/07/17 22:27	1
Carbon disulfide	**0.60**	J	1.0	0.22	ug/L			10/07/17 22:27	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/07/17 22:27	1
1,1-Dichloroethane	**0.61**	J	1.0	0.24	ug/L			10/07/17 22:27	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/07/17 22:27	1
cis-1,2-Dichloroethene	**0.51**	J	1.0	0.26	ug/L			10/07/17 22:27	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/07/17 22:27	1
1,2-Dichloroethane	**1.7**		1.0	0.25	ug/L			10/07/17 22:27	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/07/17 22:27	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/07/17 22:27	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/07/17 22:27	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/07/17 22:27	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/07/17 22:27	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/07/17 22:27	1
Trichloroethene	**0.22**	J	1.0	0.22	ug/L			10/07/17 22:27	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 22:27	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/07/17 22:27	1
Benzene	**0.89**	J	1.0	0.090	ug/L			10/07/17 22:27	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/07/17 22:27	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/07/17 22:27	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/07/17 22:27	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/07/17 22:27	1
Tetrachloroethene	**0.12**	J	1.0	0.12	ug/L			10/07/17 22:27	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/07/17 22:27	1
Toluene	0.25	U	1.0	0.25	ug/L			10/07/17 22:27	1
Chlorobenzene	**9.5**		1.0	0.24	ug/L			10/07/17 22:27	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/07/17 22:27	1
Styrene	0.17	U	1.0	0.17	ug/L			10/07/17 22:27	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/07/17 22:27	1
Ethyl ether	**4.0**		1.0	0.11	ug/L			10/07/17 22:27	1
MTBE	**1.5**		1.0	0.13	ug/L			10/07/17 22:27	1
Tetrahydrofuran	**9.0**		2.0	0.36	ug/L			10/07/17 22:27	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/07/17 22:27	1
1,4-Dioxane	**120**		50	8.7	ug/L			10/07/17 22:27	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/07/17 22:27	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/07/17 22:27	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/07/17 22:27	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/07/17 22:27	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/07/17 22:27	1
Indane	0.12	U	1.0	0.12	ug/L			10/07/17 22:27	1
Dichlorofluoromethane	**4.9**		1.0	0.21	ug/L			10/07/17 22:27	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/07/17 22:27	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/07/17 22:27*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		74 - 132		10/07/17 22:27	1
Bromofluorobenzene	92		77 - 124		10/07/17 22:27	1
Toluene-d8 (Surr)	105		80 - 120		10/07/17 22:27	1
Dibromofluoromethane (Surr)	110		72 - 131		10/07/17 22:27	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:29	10/04/17 21:13	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:29	10/04/17 21:13	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:29	10/04/17 21:13	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:29	10/04/17 21:13	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:29	10/04/17 21:13	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:29	10/04/17 02:11	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/04/17 02:11	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:29	10/04/17 02:11	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:29	10/04/17 02:11	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:29	10/04/17 02:11	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:29	10/04/17 02:11	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:29	10/04/17 02:11	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:29	10/04/17 02:11	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:29	10/04/17 02:11	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:29	10/04/17 02:11	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:29	10/04/17 02:11	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:29	10/04/17 02:11	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:29	10/04/17 02:11	1
Bis(2-chloroethyl)ether	20	* J+	1.0	0.12	ug/L		10/03/17 07:29	10/04/17 02:11	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/04/17 02:11	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:29	10/04/17 02:11	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/04/17 02:11	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:29	10/04/17 02:11	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/04/17 02:11	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:29	10/04/17 02:11	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:29	10/04/17 02:11	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/04/17 02:11	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:29	10/04/17 02:11	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:29	10/04/17 02:11	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:29	10/04/17 02:11	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/04/17 02:11	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/04/17 02:11	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:29	10/04/17 02:11	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:29	10/04/17 02:11	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 02:11	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:29	10/04/17 02:11	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 02:11	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:29	10/04/17 02:11	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/04/17 02:11	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:29	10/04/17 02:11	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/04/17 02:11	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:29	10/04/17 02:11	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 02:11	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:29	10/04/17 02:11	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:29	10/04/17 02:11	1

Client Sample ID: AWC-E2(165)

Lab Sample ID: 460-141988-4

Date Collected: 09/28/17 11:55
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:29	10/04/17 02:11	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:29	10/04/17 02:11	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 02:11	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:29	10/04/17 02:11	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:29	10/04/17 02:11	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:29	10/04/17 02:11	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:29	10/04/17 02:11	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:29	10/04/17 02:11	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:29	10/04/17 02:11	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:29	10/04/17 02:11	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:29	10/04/17 02:11	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:29	10/04/17 02:11	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:29	10/04/17 02:11	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:29	10/04/17 02:11	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:29	10/04/17 02:11	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:29	10/04/17 02:11	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:29	10/04/17 02:11	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:29	10/04/17 02:11	1
Diphenyl ether	**1.4**	**J**	10	0.50	ug/L		10/03/17 07:29	10/04/17 02:11	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:29	10/04/17 02:11	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:29	10/04/17 02:11	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:29	10/04/17 02:11	1
Bisphenol-A	**5.9**	**J**	10	1.0	ug/L		10/03/17 07:29	10/04/17 02:11	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:29	10/04/17 02:11	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*8.5*	*J N*	*ug/L*		*2.04*	*123-91-1*	*10/03/17 07:29*	*10/04/17 02:11*	*1*
Unknown	*7.5*	*J*	*ug/L*		*5.07*		*10/03/17 07:29*	*10/04/17 02:11*	*1*
Unknown	*31*	*J*	*ug/L*		*7.07*		*10/03/17 07:29*	*10/04/17 02:11*	*1*
Unknown	*6.6*	*J*	*ug/L*		*9.90*		*10/03/17 07:29*	*10/04/17 02:11*	*1*
Unknown	*7.1*	*J*	*ug/L*		*9.92*		*10/03/17 07:29*	*10/04/17 02:11*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*102*		*51 - 108*	*10/03/17 07:29*	*10/04/17 02:11*	*1*
Phenol-d5	*28*		*14 - 39*	*10/03/17 07:29*	*10/04/17 02:11*	*1*
Terphenyl-d14	*109*		*40 - 148*	*10/03/17 07:29*	*10/04/17 02:11*	*1*
2,4,6-Tribromophenol	*90*		*26 - 139*	*10/03/17 07:29*	*10/04/17 02:11*	*1*
2-Fluorophenol	*48*		*25 - 58*	*10/03/17 07:29*	*10/04/17 02:11*	*1*
2-Fluorobiphenyl	*105*		*45 - 107*	*10/03/17 07:29*	*10/04/17 02:11*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**3090**		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:55	1
Manganese, Dissolved	**697**		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:55	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: AWC-E1(156)

Lab Sample ID: 460-141988-5

Date Collected: 09/28/17 12:10
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	31		0.40	0.20	ug/L			10/09/17 06:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*110*		*72 - 133*		*10/09/17 06:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 144*		*10/09/17 06:37*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 22:49	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/07/17 22:49	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/07/17 22:49	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/07/17 22:49	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/07/17 22:49	1
Acetone	5.0 ~~2.9~~	J U	5.0	1.1	ug/L			10/07/17 22:49	1
Carbon disulfide	0.28	J	1.0	0.22	ug/L			10/07/17 22:49	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/07/17 22:49	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/07/17 22:49	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/07/17 22:49	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/07/17 22:49	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/07/17 22:49	1
1,2-Dichloroethane	0.26	J	1.0	0.25	ug/L			10/07/17 22:49	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/07/17 22:49	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/07/17 22:49	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/07/17 22:49	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/07/17 22:49	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/07/17 22:49	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/07/17 22:49	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/07/17 22:49	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 22:49	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/07/17 22:49	1
Benzene	0.22	J	1.0	0.090	ug/L			10/07/17 22:49	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/07/17 22:49	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/07/17 22:49	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/07/17 22:49	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/07/17 22:49	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/07/17 22:49	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/07/17 22:49	1
Toluene	0.25	U	1.0	0.25	ug/L			10/07/17 22:49	1
Chlorobenzene	4.6		1.0	0.24	ug/L			10/07/17 22:49	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/07/17 22:49	1
Styrene	0.17	U	1.0	0.17	ug/L			10/07/17 22:49	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/07/17 22:49	1
Ethyl ether	9.1		1.0	0.11	ug/L			10/07/17 22:49	1
MTBE	0.75	J	1.0	0.13	ug/L			10/07/17 22:49	1
Tetrahydrofuran	1.5	J	2.0	0.36	ug/L			10/07/17 22:49	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/07/17 22:49	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/07/17 22:49	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/07/17 22:49	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/07/17 22:49	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/07/17 22:49	1

Client Sample ID: AWC-E1(156)

Lab Sample ID: 460-141988-5

Date Collected: 09/28/17 12:10
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/07/17 22:49	1
Indane	0.12	U	1.0	0.12	ug/L			10/07/17 22:49	1
Dichlorofluoromethane	0.32	J	1.0	0.21	ug/L			10/07/17 22:49	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/07/17 22:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/07/17 22:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*74 - 132*		*10/07/17 22:49*	*1*
Bromofluorobenzene	*89*		*77 - 124*		*10/07/17 22:49*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/07/17 22:49*	*1*
Dibromofluoromethane (Surr)	*107*		*72 - 131*		*10/07/17 22:49*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:32	10/04/17 21:35	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:32	10/04/17 21:35	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:32	10/04/17 21:35	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:32	10/04/17 21:35	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:32	10/04/17 21:35	1
Bis(2-chloroethyl)ether	2.0	J+	0.020	0.0090	ug/L		10/03/17 07:32	10/04/17 21:35	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:32	10/04/17 02:33	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:32	10/04/17 02:33	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:32	10/04/17 02:33	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:32	10/04/17 02:33	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:32	10/04/17 02:33	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:32	10/04/17 02:33	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:32	10/04/17 02:33	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:32	10/04/17 02:33	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:32	10/04/17 02:33	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:32	10/04/17 02:33	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:32	10/04/17 02:33	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:32	10/04/17 02:33	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:32	10/04/17 02:33	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:32	10/04/17 02:33	1
1,4-Dichlorobenzene	0.72	J	10	0.66	ug/L		10/03/17 07:32	10/04/17 02:33	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:32	10/04/17 02:33	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:32	10/04/17 02:33	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:32	10/04/17 02:33	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:32	10/04/17 02:33	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:32	10/04/17 02:33	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:32	10/04/17 02:33	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:32	10/04/17 02:33	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:32	10/04/17 02:33	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:32	10/04/17 02:33	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:32	10/04/17 02:33	1

Client Sample ID: AWC-E1(156)

Lab Sample ID: 460-141988-5

Date Collected: 09/28/17 12:10
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:32	10/04/17 02:33	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:32	10/04/17 02:33	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:32	10/04/17 02:33	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:32	10/04/17 02:33	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:32	10/04/17 02:33	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:32	10/04/17 02:33	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:32	10/04/17 02:33	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:32	10/04/17 02:33	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:32	10/04/17 02:33	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:32	10/04/17 02:33	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:32	10/04/17 02:33	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:33	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:32	10/04/17 02:33	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:32	10/04/17 02:33	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:32	10/04/17 02:33	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:32	10/04/17 02:33	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:33	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:32	10/04/17 02:33	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:32	10/04/17 02:33	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:32	10/04/17 02:33	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:32	10/04/17 02:33	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:32	10/04/17 02:33	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:32	10/04/17 02:33	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:32	10/04/17 02:33	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:33	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:32	10/04/17 02:33	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:32	10/04/17 02:33	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:32	10/04/17 02:33	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:32	10/04/17 02:33	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:32	10/04/17 02:33	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:32	10/04/17 02:33	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:32	10/04/17 02:33	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:32	10/04/17 02:33	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:32	10/04/17 02:33	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:32	10/04/17 02:33	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:32	10/04/17 02:33	1
Bisphenol-A	5.6	J	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:33	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:32	10/04/17 02:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/17 07:32*	*10/04/17 02:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*86*		*51 - 108*	*10/03/17 07:32*	*10/04/17 02:33*	*1*
Phenol-d5	*25*		*14 - 39*	*10/03/17 07:32*	*10/04/17 02:33*	*1*
Terphenyl-d14	*97*		*40 - 148*	*10/03/17 07:32*	*10/04/17 02:33*	*1*
2,4,6-Tribromophenol	*77*		*26 - 139*	*10/03/17 07:32*	*10/04/17 02:33*	*1*
2-Fluorophenol	*41*		*25 - 58*	*10/03/17 07:32*	*10/04/17 02:33*	*1*
2-Fluorobiphenyl	*87*		*45 - 107*	*10/03/17 07:32*	*10/04/17 02:33*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: AWC-E1(156)

Lab Sample ID: 460-141988-5
Matrix: Water

Date Collected: 09/28/17 12:10
Date Received: 09/28/17 20:35

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	6160		150	92.1	ug/L		10/02/17 09:14	10/03/17 13:59	1
Manganese, Dissolved	1660		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 13:59	1

Client Sample ID: AWC-K1

Lab Sample ID: 460-141988-6
Matrix: Water

Date Collected: 09/28/17 14:30
Date Received: 09/28/17 20:35

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.97		0.40	0.20	ug/L			10/09/17 06:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*72 - 133*		*10/09/17 06:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 144*		*10/09/17 06:13*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 23:11	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/07/17 23:11	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/07/17 23:11	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/07/17 23:11	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/07/17 23:11	1
Acetone	5.0 ~~3.6~~	~~J~~ U	5.0	1.1	ug/L			10/07/17 23:11	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/07/17 23:11	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/07/17 23:11	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/07/17 23:11	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/07/17 23:11	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/07/17 23:11	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/07/17 23:11	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/07/17 23:11	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/07/17 23:11	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/07/17 23:11	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/07/17 23:11	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/07/17 23:11	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/07/17 23:11	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/07/17 23:11	1
Trichloroethene	2.1		1.0	0.22	ug/L			10/07/17 23:11	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/07/17 23:11	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/07/17 23:11	1
Benzene	0.090	U	1.0	0.090	ug/L			10/07/17 23:11	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/07/17 23:11	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/07/17 23:11	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/07/17 23:11	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/07/17 23:11	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/07/17 23:11	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/07/17 23:11	1
Toluene	0.25	U	1.0	0.25	ug/L			10/07/17 23:11	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/07/17 23:11	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/07/17 23:11	1
Styrene	0.17	U	1.0	0.17	ug/L			10/07/17 23:11	1

Client Sample ID: AWC-K1

Lab Sample ID: 460-141988-6

Date Collected: 09/28/17 14:30
Matrix: Water
Date Received: 09/28/17 20:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/07/17 23:11	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/07/17 23:11	1
MTBE	0.13	U	1.0	0.13	ug/L			10/07/17 23:11	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/07/17 23:11	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/07/17 23:11	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/07/17 23:11	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/07/17 23:11	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/07/17 23:11	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/07/17 23:11	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/07/17 23:11	1
Indane	0.12	U	1.0	0.12	ug/L			10/07/17 23:11	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/07/17 23:11	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/07/17 23:11	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/07/17 23:11*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*74 - 132*		*10/07/17 23:11*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/07/17 23:11*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/07/17 23:11*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/07/17 23:11*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/03/17 07:32	10/04/17 21:57	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/03/17 07:32	10/04/17 21:57	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L		10/03/17 07:32	10/04/17 21:57	1
Hexachlorobenzene	0.0090	U *	0.020	0.0090	ug/L		10/03/17 07:32	10/04/17 21:57	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/03/17 07:32	10/04/17 21:57	1
Bis(2-chloroethyl)ether	0.0090	U	0.020	0.0090	ug/L		10/03/17 07:32	10/04/17 21:57	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/03/17 07:32	10/04/17 02:56	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/03/17 07:32	10/04/17 02:56	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/03/17 07:32	10/04/17 02:56	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/03/17 07:32	10/04/17 02:56	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/03/17 07:32	10/04/17 02:56	1
2,4-Dimethylphenol	0.91	U *	10	0.91	ug/L		10/03/17 07:32	10/04/17 02:56	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/03/17 07:32	10/04/17 02:56	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/03/17 07:32	10/04/17 02:56	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/03/17 07:32	10/04/17 02:56	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/03/17 07:32	10/04/17 02:56	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/03/17 07:32	10/04/17 02:56	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/03/17 07:32	10/04/17 02:56	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/03/17 07:32	10/04/17 02:56	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/03/17 07:32	10/04/17 02:56	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/03/17 07:32	10/04/17 02:56	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/03/17 07:32	10/04/17 02:56	1

Client Sample ID: AWC-K1

Lab Sample ID: 460-141988-6

Date Collected: 09/28/17 14:30
Date Received: 09/28/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/03/17 07:32	10/04/17 02:56	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/03/17 07:32	10/04/17 02:56	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/03/17 07:32	10/04/17 02:56	1
Isophorone	0.67	U	10	0.67	ug/L		10/03/17 07:32	10/04/17 02:56	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/03/17 07:32	10/04/17 02:56	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/03/17 07:32	10/04/17 02:56	1
Naphthalene	0.80	U *	10	0.80	ug/L		10/03/17 07:32	10/04/17 02:56	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/03/17 07:32	10/04/17 02:56	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/03/17 07:32	10/04/17 02:56	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/03/17 07:32	10/04/17 02:56	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/03/17 07:32	10/04/17 02:56	1
2-Chloronaphthalene	0.61	U *	10	0.61	ug/L		10/03/17 07:32	10/04/17 02:56	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/03/17 07:32	10/04/17 02:56	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/03/17 07:32	10/04/17 02:56	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/03/17 07:32	10/04/17 02:56	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/03/17 07:32	10/04/17 02:56	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/03/17 07:32	10/04/17 02:56	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/03/17 07:32	10/04/17 02:56	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/03/17 07:32	10/04/17 02:56	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/17 07:32	10/04/17 02:56	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:56	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/03/17 07:32	10/04/17 02:56	1
Fluorene	0.80	U	10	0.80	ug/L		10/03/17 07:32	10/04/17 02:56	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/03/17 07:32	10/04/17 02:56	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/03/17 07:32	10/04/17 02:56	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:56	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/03/17 07:32	10/04/17 02:56	1
Anthracene	0.57	U	10	0.57	ug/L		10/03/17 07:32	10/04/17 02:56	1
Carbazole	0.85	U	10	0.85	ug/L		10/03/17 07:32	10/04/17 02:56	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/03/17 07:32	10/04/17 02:56	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/03/17 07:32	10/04/17 02:56	1
Pyrene	0.83	U	10	0.83	ug/L		10/03/17 07:32	10/04/17 02:56	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/03/17 07:32	10/04/17 02:56	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:56	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/03/17 07:32	10/04/17 02:56	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/03/17 07:32	10/04/17 02:56	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/03/17 07:32	10/04/17 02:56	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/03/17 07:32	10/04/17 02:56	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/03/17 07:32	10/04/17 02:56	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/03/17 07:32	10/04/17 02:56	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/03/17 07:32	10/04/17 02:56	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/03/17 07:32	10/04/17 02:56	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/03/17 07:32	10/04/17 02:56	1
Caprolactam	1.1	U	10	1.1	ug/L		10/03/17 07:32	10/04/17 02:56	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/03/17 07:32	10/04/17 02:56	1
Bisphenol-A	4.6	J	10	1.0	ug/L		10/03/17 07:32	10/04/17 02:56	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/03/17 07:32	10/04/17 02:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*22*	*J*	*ug/L*		*4.60*		*10/03/17 07:32*	*10/04/17 02:56*	*1*

Client Sample ID: AWC-K1

Lab Sample ID: 460-141988-6
Matrix: Water

Date Collected: 09/28/17 14:30
Date Received: 09/28/17 20:35

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	50	J	ug/L		5.07		10/03/17 07:32	10/04/17 02:56	1
Unknown	12	J	ug/L		6.08		10/03/17 07:32	10/04/17 02:56	1
Unknown	13	J	ug/L		7.25		10/03/17 07:32	10/04/17 02:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	105		51 - 108	10/03/17 07:32	10/04/17 02:56	1
Phenol-d5	29		14 - 39	10/03/17 07:32	10/04/17 02:56	1
Terphenyl-d14	122		40 - 148	10/03/17 07:32	10/04/17 02:56	1
2,4,6-Tribromophenol	88		26 - 139	10/03/17 07:32	10/04/17 02:56	1
2-Fluorophenol	48		25 - 58	10/03/17 07:32	10/04/17 02:56	1
2-Fluorobiphenyl	108	X	45 - 107	10/03/17 07:32	10/04/17 02:56	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2630		150	92.1	ug/L		10/02/17 09:14	10/03/17 14:03	1
Manganese, Dissolved	54.1		15.0	3.1	ug/L		10/02/17 09:14	10/03/17 14:03	1

Client Sample ID: TBGW_092917

Lab Sample ID: 460-142024-1
Matrix: Water

Date Collected: 09/29/17 00:00
Date Received: 09/29/17 20:20

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/07/17 12:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	111		72 - 133		10/07/17 12:38	1
1,2-Dichloroethane-d4 (Surr)	106		71 - 144		10/07/17 12:38	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 20:57	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/08/17 20:57	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/08/17 20:57	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/08/17 20:57	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/08/17 20:57	1
Acetone	8.5		5.0	1.1	ug/L			10/08/17 20:57	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/08/17 20:57	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/08/17 20:57	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/08/17 20:57	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/08/17 20:57	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/08/17 20:57	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/08/17 20:57	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/08/17 20:57	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/08/17 20:57	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/08/17 20:57	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/08/17 20:57	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/08/17 20:57	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/08/17 20:57	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/08/17 20:57	1

Client Sample ID: TBGW_092917

Lab Sample ID: 460-142024-1

Date Collected: 09/29/17 00:00
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/08/17 20:57	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 20:57	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/08/17 20:57	1
Benzene	0.090	U	1.0	0.090	ug/L			10/08/17 20:57	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/08/17 20:57	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/08/17 20:57	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/08/17 20:57	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/08/17 20:57	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/08/17 20:57	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/08/17 20:57	1
Toluene	0.25	U	1.0	0.25	ug/L			10/08/17 20:57	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/08/17 20:57	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/08/17 20:57	1
Styrene	0.17	U	1.0	0.17	ug/L			10/08/17 20:57	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/08/17 20:57	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/08/17 20:57	1
MTBE	0.13	U	1.0	0.13	ug/L			10/08/17 20:57	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/08/17 20:57	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/08/17 20:57	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/08/17 20:57	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/08/17 20:57	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/08/17 20:57	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/08/17 20:57	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/08/17 20:57	1
Indane	0.12	U	1.0	0.12	ug/L			10/08/17 20:57	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/08/17 20:57	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/08/17 20:57	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/08/17 20:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*74 - 132*		*10/08/17 20:57*	*1*
Bromofluorobenzene	*99*		*77 - 124*		*10/08/17 20:57*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/08/17 20:57*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/08/17 20:57*	*1*

Client Sample ID: MW-34

Lab Sample ID: 460-142024-2

Date Collected: 09/29/17 12:10
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	17		0.40	0.20	ug/L			10/08/17 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*72 - 133*		*10/08/17 13:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*71 - 144*		*10/08/17 13:57*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: MW-34

Lab Sample ID: 460-142024-2

Date Collected: 09/29/17 12:10
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 21:24	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/08/17 21:24	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/08/17 21:24	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/08/17 21:24	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/08/17 21:24	1
Acetone	5.0 ~~1.8~~	J U	5.0	1.1	ug/L			10/08/17 21:24	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/08/17 21:24	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/08/17 21:24	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/08/17 21:24	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/08/17 21:24	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/08/17 21:24	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/08/17 21:24	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/08/17 21:24	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/08/17 21:24	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/08/17 21:24	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/08/17 21:24	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/08/17 21:24	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/08/17 21:24	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/08/17 21:24	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/08/17 21:24	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 21:24	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/08/17 21:24	1
Benzene	0.090	U	1.0	0.090	ug/L			10/08/17 21:24	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/08/17 21:24	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/08/17 21:24	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/08/17 21:24	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/08/17 21:24	1
Tetrachloroethene	0.47	J	1.0	0.12	ug/L			10/08/17 21:24	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/08/17 21:24	1
Toluene	0.25	U	1.0	0.25	ug/L			10/08/17 21:24	1
Chlorobenzene	6.4		1.0	0.24	ug/L			10/08/17 21:24	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/08/17 21:24	1
Styrene	0.17	U	1.0	0.17	ug/L			10/08/17 21:24	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/08/17 21:24	1
Ethyl ether	7.6		1.0	0.11	ug/L			10/08/17 21:24	1
MTBE	0.56	J	1.0	0.13	ug/L			10/08/17 21:24	1
Tetrahydrofuran	0.95	J	2.0	0.36	ug/L			10/08/17 21:24	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/08/17 21:24	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/08/17 21:24	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/08/17 21:24	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/08/17 21:24	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/08/17 21:24	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/08/17 21:24	1
Indane	0.12	U	1.0	0.12	ug/L			10/08/17 21:24	1
Dichlorofluoromethane	0.30	J	1.0	0.21	ug/L			10/08/17 21:24	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/08/17 21:24	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/08/17 21:24*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: MW-34

Lab Sample ID: 460-142024-2

Date Collected: 09/29/17 12:10
Date Received: 09/29/17 20:20

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*74 - 132*		*10/08/17 21:24*	*1*
Bromofluorobenzene	*97*		*77 - 124*		*10/08/17 21:24*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/08/17 21:24*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/08/17 21:24*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.038	U	0.051	0.038	ug/L		10/04/17 19:08	10/05/17 09:06	1
Benzo[a]pyrene	0.027	U	0.051	0.027	ug/L		10/04/17 19:08	10/05/17 09:06	1
Benzo[b]fluoranthene	0.012	~~U~~ UJ	0.051	0.012	ug/L		10/04/17 19:08	10/05/17 09:06	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/04/17 19:08	10/05/17 09:06	1
Pentachlorophenol	0.079	U	0.20	0.079	ug/L		10/04/17 19:08	10/05/17 09:06	1
Bis(2-chloroethyl)ether	2.1		0.020	0.0092	ug/L		10/04/17 19:08	10/05/17 09:06	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/04/17 19:08	10/05/17 06:30	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/04/17 19:08	10/05/17 06:30	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/04/17 19:08	10/05/17 06:30	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/04/17 19:08	10/05/17 06:30	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/04/17 19:08	10/05/17 06:30	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/04/17 19:08	10/05/17 06:30	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/04/17 19:08	10/05/17 06:30	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/04/17 19:08	10/05/17 06:30	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/04/17 19:08	10/05/17 06:30	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/04/17 19:08	10/05/17 06:30	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/04/17 19:08	10/05/17 06:30	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/04/17 19:08	10/05/17 06:30	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/04/17 19:08	10/05/17 06:30	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 06:30	1
1,4-Dichlorobenzene	0.67	U	10	0.67	ug/L		10/04/17 19:08	10/05/17 06:30	1
1,2-Dichlorobenzene	0.85	U	10	0.85	ug/L		10/04/17 19:08	10/05/17 06:30	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/04/17 19:08	10/05/17 06:30	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/04/17 19:08	10/05/17 06:30	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/04/17 19:08	10/05/17 06:30	1
Isophorone	0.68	U	10	0.68	ug/L		10/04/17 19:08	10/05/17 06:30	1
Bis(2-chloroethoxy)methane	0.70	U	10	0.70	ug/L		10/04/17 19:08	10/05/17 06:30	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/04/17 19:08	10/05/17 06:30	1
Naphthalene	0.82	U	10	0.82	ug/L		10/04/17 19:08	10/05/17 06:30	1
4-Chloroaniline	0.74	~~U *~~ UJ	10	0.74	ug/L		10/04/17 19:08	10/05/17 06:30	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/17 19:08	10/05/17 06:30	1
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/04/17 19:08	10/05/17 06:30	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/04/17 19:08	10/05/17 06:30	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/04/17 19:08	10/05/17 06:30	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/05/17 06:30	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 06:30	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/05/17 06:30	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/04/17 19:08	10/05/17 06:30	1
3-Nitroaniline	0.84	~~U *~~ UJ	10	0.84	ug/L		10/04/17 19:08	10/05/17 06:30	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/04/17 19:08	10/05/17 06:30	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: MW-34

Lab Sample ID: 460-142024-2

Date Collected: 09/29/17 12:10
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.87	U	10	0.87	ug/L		10/04/17 19:08	10/05/17 06:30	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/04/17 19:08	10/05/17 06:30	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 06:30	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/04/17 19:08	10/05/17 06:30	1
Fluorene	0.82	U	10	0.82	ug/L		10/04/17 19:08	10/05/17 06:30	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/04/17 19:08	10/05/17 06:30	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/04/17 19:08	10/05/17 06:30	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 06:30	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/05/17 06:30	1
Anthracene	0.58	U	10	0.58	ug/L		10/04/17 19:08	10/05/17 06:30	1
Carbazole	0.87	U	10	0.87	ug/L		10/04/17 19:08	10/05/17 06:30	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/17 19:08	10/05/17 06:30	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/04/17 19:08	10/05/17 06:30	1
Pyrene	0.85	U	10	0.85	ug/L		10/04/17 19:08	10/05/17 06:30	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/04/17 19:08	10/05/17 06:30	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 06:30	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/04/17 19:08	10/05/17 06:30	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/04/17 19:08	10/05/17 06:30	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/04/17 19:08	10/05/17 06:30	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/04/17 19:08	10/05/17 06:30	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/04/17 19:08	10/05/17 06:30	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/04/17 19:08	10/05/17 06:30	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/04/17 19:08	10/05/17 06:30	1
Diphenyl ether	0.51	U	10	0.51	ug/L		10/04/17 19:08	10/05/17 06:30	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/04/17 19:08	10/05/17 06:30	1
Caprolactam	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 06:30	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/04/17 19:08	10/05/17 06:30	1
Bisphenol-A	6.7	J	10	1.0	ug/L		10/04/17 19:08	10/05/17 06:30	1
N-Methylaniline	0.89	~~U~~ UJ	5.1	0.89	ug/L		10/04/17 19:08	10/05/17 06:30	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*6.6*	*J*	*ug/L*		*7.05*		*10/04/17 19:08*	*10/05/17 06:30*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*108*		*51 - 108*	*10/04/17 19:08*	*10/05/17 06:30*	*1*
Phenol-d5	*33*		*14 - 39*	*10/04/17 19:08*	*10/05/17 06:30*	*1*
Terphenyl-d14	*114*		*40 - 148*	*10/04/17 19:08*	*10/05/17 06:30*	*1*
2,4,6-Tribromophenol	*126*		*26 - 139*	*10/04/17 19:08*	*10/05/17 06:30*	*1*
2-Fluorophenol	*50*		*25 - 58*	*10/04/17 19:08*	*10/05/17 06:30*	*1*
2-Fluorobiphenyl	*111*	*X*	*45 - 107*	*10/04/17 19:08*	*10/05/17 06:30*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	20500		150	92.1	ug/L		10/05/17 09:27	10/05/17 18:45	1
Manganese, Dissolved	2240		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 18:45	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-141967-1
SDG: 141967

Client Sample ID: MW-18

Lab Sample ID: 460-142024-3

Date Collected: 09/29/17 12:20
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	13		0.40	0.20	ug/L			10/08/17 14:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*109*		*72 - 133*		*10/08/17 14:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 144*		*10/08/17 14:21*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 21:51	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/08/17 21:51	1
Vinyl chloride	0.85	J	1.0	0.060	ug/L			10/08/17 21:51	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/08/17 21:51	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/08/17 21:51	1
Acetone	5.0 ~~2.2~~	J U	5.0	1.1	ug/L			10/08/17 21:51	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/08/17 21:51	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/08/17 21:51	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/08/17 21:51	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/08/17 21:51	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/08/17 21:51	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/08/17 21:51	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/08/17 21:51	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/08/17 21:51	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/08/17 21:51	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/08/17 21:51	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/08/17 21:51	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/08/17 21:51	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/08/17 21:51	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/08/17 21:51	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 21:51	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/08/17 21:51	1
Benzene	0.13	J	1.0	0.090	ug/L			10/08/17 21:51	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/08/17 21:51	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/08/17 21:51	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/08/17 21:51	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/08/17 21:51	1
Tetrachloroethene	0.42	J	1.0	0.12	ug/L			10/08/17 21:51	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/08/17 21:51	1
Toluene	0.25	U	1.0	0.25	ug/L			10/08/17 21:51	1
Chlorobenzene	8.3		1.0	0.24	ug/L			10/08/17 21:51	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/08/17 21:51	1
Styrene	0.17	U	1.0	0.17	ug/L			10/08/17 21:51	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/08/17 21:51	1
Ethyl ether	12		1.0	0.11	ug/L			10/08/17 21:51	1
MTBE	0.59	J	1.0	0.13	ug/L			10/08/17 21:51	1
Tetrahydrofuran	1.9	J	2.0	0.36	ug/L			10/08/17 21:51	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/08/17 21:51	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/08/17 21:51	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/08/17 21:51	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/08/17 21:51	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/08/17 21:51	1

Client Sample ID: MW-18

Lab Sample ID: 460-142024-3

Date Collected: 09/29/17 12:20
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/08/17 21:51	1
Indane	0.16	J	1.0	0.12	ug/L			10/08/17 21:51	1
Dichlorofluoromethane	0.23	J	1.0	0.21	ug/L			10/08/17 21:51	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/08/17 21:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/08/17 21:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/08/17 21:51*	*1*
Bromofluorobenzene	*100*		*77 - 124*		*10/08/17 21:51*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/08/17 21:51*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/08/17 21:51*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.038	U	0.051	0.038	ug/L		10/04/17 19:08	10/05/17 09:28	1
Benzo[a]pyrene	0.027	U	0.051	0.027	ug/L		10/04/17 19:08	10/05/17 09:28	1
Benzo[b]fluoranthene	0.012	~~U~~ UJ	0.051	0.012	ug/L		10/04/17 19:08	10/05/17 09:28	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/04/17 19:08	10/05/17 09:28	1
Pentachlorophenol	0.079	U	0.20	0.079	ug/L		10/04/17 19:08	10/05/17 09:28	1
Bis(2-chloroethyl)ether	1.4		0.020	0.0092	ug/L		10/04/17 19:08	10/05/17 09:28	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/04/17 19:08	10/06/17 16:21	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/04/17 19:08	10/06/17 16:21	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/04/17 19:08	10/06/17 16:21	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/04/17 19:08	10/06/17 16:21	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/04/17 19:08	10/06/17 16:21	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/04/17 19:08	10/06/17 16:21	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/04/17 19:08	10/06/17 16:21	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/04/17 19:08	10/06/17 16:21	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/04/17 19:08	10/06/17 16:21	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/04/17 19:08	10/06/17 16:21	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/04/17 19:08	10/06/17 16:21	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/04/17 19:08	10/06/17 16:21	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/04/17 19:08	10/06/17 16:21	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/06/17 16:21	1
1,4-Dichlorobenzene	0.94	J	10	0.67	ug/L		10/04/17 19:08	10/06/17 16:21	1
1,2-Dichlorobenzene	0.85	U	10	0.85	ug/L		10/04/17 19:08	10/06/17 16:21	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/04/17 19:08	10/06/17 16:21	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/04/17 19:08	10/06/17 16:21	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/04/17 19:08	10/06/17 16:21	1
Isophorone	0.68	U	10	0.68	ug/L		10/04/17 19:08	10/06/17 16:21	1
Bis(2-chloroethoxy)methane	0.70	U	10	0.70	ug/L		10/04/17 19:08	10/06/17 16:21	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/04/17 19:08	10/06/17 16:21	1
Naphthalene	0.82	U	10	0.82	ug/L		10/04/17 19:08	10/06/17 16:21	1
4-Chloroaniline	0.74	~~U~~ * UJ	10	0.74	ug/L		10/04/17 19:08	10/06/17 16:21	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/17 19:08	10/06/17 16:21	1

Client Sample ID: MW-18

Lab Sample ID: 460-142024-3

Date Collected: 09/29/17 12:20
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/04/17 19:08	10/06/17 16:21	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/04/17 19:08	10/06/17 16:21	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/04/17 19:08	10/06/17 16:21	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/06/17 16:21	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/06/17 16:21	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/06/17 16:21	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/04/17 19:08	10/06/17 16:21	1
3-Nitroaniline	0.84	~~U~~ * UJ	10	0.84	ug/L		10/04/17 19:08	10/06/17 16:21	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/04/17 19:08	10/06/17 16:21	1
Dibenzofuran	0.87	U	10	0.87	ug/L		10/04/17 19:08	10/06/17 16:21	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/04/17 19:08	10/06/17 16:21	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/06/17 16:21	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/04/17 19:08	10/06/17 16:21	1
Fluorene	0.82	U	10	0.82	ug/L		10/04/17 19:08	10/06/17 16:21	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/04/17 19:08	10/06/17 16:21	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/04/17 19:08	10/06/17 16:21	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/06/17 16:21	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/06/17 16:21	1
Anthracene	0.58	U	10	0.58	ug/L		10/04/17 19:08	10/06/17 16:21	1
Carbazole	0.87	U	10	0.87	ug/L		10/04/17 19:08	10/06/17 16:21	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/17 19:08	10/06/17 16:21	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/04/17 19:08	10/06/17 16:21	1
Pyrene	0.85	U	10	0.85	ug/L		10/04/17 19:08	10/06/17 16:21	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/04/17 19:08	10/06/17 16:21	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/06/17 16:21	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/04/17 19:08	10/06/17 16:21	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/04/17 19:08	10/06/17 16:21	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/04/17 19:08	10/06/17 16:21	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/04/17 19:08	10/06/17 16:21	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/04/17 19:08	10/06/17 16:21	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/04/17 19:08	10/06/17 16:21	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/04/17 19:08	10/06/17 16:21	1
Diphenyl ether	0.51	U	10	0.51	ug/L		10/04/17 19:08	10/06/17 16:21	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/04/17 19:08	10/06/17 16:21	1
Caprolactam	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/06/17 16:21	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/04/17 19:08	10/06/17 16:21	1
Bisphenol-A	6.7	~~J~~ J+	10	1.0	ug/L		10/04/17 19:08	10/06/17 16:21	1
N-Methylaniline	0.89	~~U~~ * UJ	5.1	0.89	ug/L		10/04/17 19:08	10/06/17 16:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/04/17 19:08*	*10/06/17 16:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*83*		*51 - 108*	*10/04/17 19:08*	*10/06/17 16:21*	*1*
Phenol-d5	*41*	*X*	*14 - 39*	*10/04/17 19:08*	*10/06/17 16:21*	*1*
Terphenyl-d14	*55*		*40 - 148*	*10/04/17 19:08*	*10/06/17 16:21*	*1*
2,4,6-Tribromophenol	*73*		*26 - 139*	*10/04/17 19:08*	*10/06/17 16:21*	*1*
2-Fluorophenol	*59*	*X*	*25 - 58*	*10/04/17 19:08*	*10/06/17 16:21*	*1*
2-Fluorobiphenyl	*78*		*45 - 107*	*10/04/17 19:08*	*10/06/17 16:21*	*1*

Client Sample ID: MW-18

Lab Sample ID: 460-142024-3

Date Collected: 09/29/17 12:20
Date Received: 09/29/17 20:20

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	48700		150	92.1	ug/L		10/05/17 09:27	10/05/17 18:49	1
Manganese, Dissolved	3500		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 18:49	1

Client Sample ID: P4(UPA)

Lab Sample ID: 460-142024-4

Date Collected: 09/29/17 15:00
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/08/17 14:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*106*		*72 - 133*		*10/08/17 14:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 144*		*10/08/17 14:44*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 22:18	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/08/17 22:18	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/08/17 22:18	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/08/17 22:18	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/08/17 22:18	1
Acetone	1.1	U	5.0	1.1	ug/L			10/08/17 22:18	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/08/17 22:18	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/08/17 22:18	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/08/17 22:18	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/08/17 22:18	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/08/17 22:18	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/08/17 22:18	1
1,2-Dichloroethane	0.59	J	1.0	0.25	ug/L			10/08/17 22:18	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/08/17 22:18	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/08/17 22:18	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/08/17 22:18	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/08/17 22:18	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/08/17 22:18	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/08/17 22:18	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/08/17 22:18	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 22:18	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/08/17 22:18	1
Benzene	0.090	U	1.0	0.090	ug/L			10/08/17 22:18	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/08/17 22:18	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/08/17 22:18	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/08/17 22:18	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/08/17 22:18	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/08/17 22:18	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/08/17 22:18	1
Toluene	0.25	U	1.0	0.25	ug/L			10/08/17 22:18	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/08/17 22:18	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/08/17 22:18	1
Styrene	0.17	U	1.0	0.17	ug/L			10/08/17 22:18	1

Client Sample ID: P4(UPA)

Lab Sample ID: 460-142024-4

Date Collected: 09/29/17 15:00
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/08/17 22:18	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/08/17 22:18	1
MTBE	0.13	U	1.0	0.13	ug/L			10/08/17 22:18	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/08/17 22:18	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/08/17 22:18	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/08/17 22:18	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/08/17 22:18	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/08/17 22:18	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/08/17 22:18	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/08/17 22:18	1
Indane	0.12	U	1.0	0.12	ug/L			10/08/17 22:18	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/08/17 22:18	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/08/17 22:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/08/17 22:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/08/17 22:18*	*1*
Bromofluorobenzene	*100*		*77 - 124*		*10/08/17 22:18*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/08/17 22:18*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/08/17 22:18*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L		10/04/17 19:08	10/05/17 09:51	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		10/04/17 19:08	10/05/17 09:51	1
Benzo[b]fluoranthene	0.012	~~U~~ UJ	0.050	0.012	ug/L		10/04/17 19:08	10/05/17 09:51	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/04/17 19:08	10/05/17 09:51	1
Pentachlorophenol	0.077	U	0.20	0.077	ug/L		10/04/17 19:08	10/05/17 09:51	1
Bis(2-chloroethyl)ether	0.0090	U	0.020	0.0090	ug/L		10/04/17 19:08	10/05/17 09:51	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/04/17 19:08	10/05/17 07:15	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/04/17 19:08	10/05/17 07:15	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/04/17 19:08	10/05/17 07:15	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/04/17 19:08	10/05/17 07:15	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/04/17 19:08	10/05/17 07:15	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/04/17 19:08	10/05/17 07:15	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/04/17 19:08	10/05/17 07:15	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/04/17 19:08	10/05/17 07:15	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/04/17 19:08	10/05/17 07:15	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/04/17 19:08	10/05/17 07:15	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/04/17 19:08	10/05/17 07:15	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/04/17 19:08	10/05/17 07:15	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/04/17 19:08	10/05/17 07:15	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 07:15	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/05/17 07:15	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/04/17 19:08	10/05/17 07:15	1

Client Sample ID: P4(UPA)

Lab Sample ID: 460-142024-4

Date Collected: 09/29/17 15:00
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/04/17 19:08	10/05/17 07:15	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/04/17 19:08	10/05/17 07:15	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/04/17 19:08	10/05/17 07:15	1
Isophorone	0.67	U	10	0.67	ug/L		10/04/17 19:08	10/05/17 07:15	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/04/17 19:08	10/05/17 07:15	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/04/17 19:08	10/05/17 07:15	1
Naphthalene	0.80	U	10	0.80	ug/L		10/04/17 19:08	10/05/17 07:15	1
4-Chloroaniline	0.73	~~U~~ * UJ	10	0.73	ug/L		10/04/17 19:08	10/05/17 07:15	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/04/17 19:08	10/05/17 07:15	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/04/17 19:08	10/05/17 07:15	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/04/17 19:08	10/05/17 07:15	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/04/17 19:08	10/05/17 07:15	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/04/17 19:08	10/05/17 07:15	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/04/17 19:08	10/05/17 07:15	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/04/17 19:08	10/05/17 07:15	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/04/17 19:08	10/05/17 07:15	1
3-Nitroaniline	0.82	~~U~~ * UJ	10	0.82	ug/L		10/04/17 19:08	10/05/17 07:15	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/04/17 19:08	10/05/17 07:15	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/04/17 19:08	10/05/17 07:15	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/04/17 19:08	10/05/17 07:15	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 07:15	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/04/17 19:08	10/05/17 07:15	1
Fluorene	0.80	U	10	0.80	ug/L		10/04/17 19:08	10/05/17 07:15	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/04/17 19:08	10/05/17 07:15	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/04/17 19:08	10/05/17 07:15	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 07:15	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/04/17 19:08	10/05/17 07:15	1
Anthracene	0.57	U	10	0.57	ug/L		10/04/17 19:08	10/05/17 07:15	1
Carbazole	0.85	U	10	0.85	ug/L		10/04/17 19:08	10/05/17 07:15	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/04/17 19:08	10/05/17 07:15	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/04/17 19:08	10/05/17 07:15	1
Pyrene	0.83	U	10	0.83	ug/L		10/04/17 19:08	10/05/17 07:15	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/04/17 19:08	10/05/17 07:15	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 07:15	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/04/17 19:08	10/05/17 07:15	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/04/17 19:08	10/05/17 07:15	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/04/17 19:08	10/05/17 07:15	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/04/17 19:08	10/05/17 07:15	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/04/17 19:08	10/05/17 07:15	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/04/17 19:08	10/05/17 07:15	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/04/17 19:08	10/05/17 07:15	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/04/17 19:08	10/05/17 07:15	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/04/17 19:08	10/05/17 07:15	1
Caprolactam	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 07:15	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/04/17 19:08	10/05/17 07:15	1
Bisphenol-A	5.0	J	10	1.0	ug/L		10/04/17 19:08	10/05/17 07:15	1
N-Methylaniline	0.87	~~U~~ * UJ	5.0	0.87	ug/L		10/04/17 19:08	10/05/17 07:15	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/04/17 19:08*	*10/05/17 07:15*	*1*

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	107		51 - 108	10/04/17 19:08	10/05/17 07:15	1
Phenol-d5	32		14 - 39	10/04/17 19:08	10/05/17 07:15	1
Terphenyl-d14	120		40 - 148	10/04/17 19:08	10/05/17 07:15	1
2,4,6-Tribromophenol	120		26 - 139	10/04/17 19:08	10/05/17 07:15	1
2-Fluorophenol	49		25 - 58	10/04/17 19:08	10/05/17 07:15	1
2-Fluorobiphenyl	109	X	45 - 107	10/04/17 19:08	10/05/17 07:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	80600		150	92.1	ug/L		10/05/17 09:27	10/05/17 19:05	1
Manganese, Dissolved	3230		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:05	1

Client Sample ID: UPA-3D — Lab Sample ID: 460-142024-5

Date Collected: 09/29/17 15:35 Matrix: Water
Date Received: 09/29/17 20:20

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	23		0.40	0.20	ug/L			10/08/17 15:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	107		72 - 133		10/08/17 15:08	1
1,2-Dichloroethane-d4 (Surr)	113		71 - 144		10/08/17 15:08	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 22:44	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/08/17 22:44	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/08/17 22:44	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/08/17 22:44	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/08/17 22:44	1
Acetone	5.0 ~~1.1~~	~~J~~ U	5.0	1.1	ug/L			10/08/17 22:44	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/08/17 22:44	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/08/17 22:44	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/08/17 22:44	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/08/17 22:44	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/08/17 22:44	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/08/17 22:44	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/08/17 22:44	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/08/17 22:44	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/08/17 22:44	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/08/17 22:44	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/08/17 22:44	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/08/17 22:44	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/08/17 22:44	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/08/17 22:44	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/08/17 22:44	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/08/17 22:44	1
Benzene	0.090	U	1.0	0.090	ug/L			10/08/17 22:44	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/08/17 22:44	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/08/17 22:44	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/08/17 22:44	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/08/17 22:44	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/08/17 22:44	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/08/17 22:44	1

Client Sample ID: UPA-3D

Lab Sample ID: 460-142024-5

Date Collected: 09/29/17 15:35
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.25	U	1.0	0.25	ug/L			10/08/17 22:44	1
Chlorobenzene	**0.31**	**J**	1.0	0.24	ug/L			10/08/17 22:44	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/08/17 22:44	1
Styrene	0.17	U	1.0	0.17	ug/L			10/08/17 22:44	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/08/17 22:44	1
Ethyl ether	**0.13**	**J**	1.0	0.11	ug/L			10/08/17 22:44	1
MTBE	**0.48**	**J**	1.0	0.13	ug/L			10/08/17 22:44	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/08/17 22:44	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/08/17 22:44	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/08/17 22:44	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/08/17 22:44	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/08/17 22:44	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/08/17 22:44	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/08/17 22:44	1
Indane	0.12	U	1.0	0.12	ug/L			10/08/17 22:44	1
Dichlorofluoromethane	**0.38**	**J**	1.0	0.21	ug/L			10/08/17 22:44	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/08/17 22:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/08/17 22:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*74 - 132*		*10/08/17 22:44*	*1*
Bromofluorobenzene	*99*		*77 - 124*		*10/08/17 22:44*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/08/17 22:44*	*1*
Dibromofluoromethane (Surr)	*107*		*72 - 131*		*10/08/17 22:44*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.039	U	0.052	0.039	ug/L		10/04/17 19:08	10/05/17 10:13	1
Benzo[a]pyrene	0.027	U	0.052	0.027	ug/L		10/04/17 19:08	10/05/17 10:13	1
Benzo[b]fluoranthene	0.013	U UJ	0.052	0.013	ug/L		10/04/17 19:08	10/05/17 10:13	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/04/17 19:08	10/05/17 10:13	1
Pentachlorophenol	0.080	U	0.21	0.080	ug/L		10/04/17 19:08	10/05/17 10:13	1
Bis(2-chloroethyl)ether	**2.5**		0.021	0.0094	ug/L		10/04/17 19:08	10/05/17 10:13	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/04/17 19:08	10/05/17 07:38	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/04/17 19:08	10/05/17 07:38	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/04/17 19:08	10/05/17 07:38	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/04/17 19:08	10/05/17 07:38	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/04/17 19:08	10/05/17 07:38	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/04/17 19:08	10/05/17 07:38	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/04/17 19:08	10/05/17 07:38	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/04/17 19:08	10/05/17 07:38	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/04/17 19:08	10/05/17 07:38	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/04/17 19:08	10/05/17 07:38	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/04/17 19:08	10/05/17 07:38	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/04/17 19:08	10/05/17 07:38	1

Client Sample ID: UPA-3D

Lab Sample ID: 460-142024-5

Date Collected: 09/29/17 15:35
Date Received: 09/29/17 20:20

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/04/17 19:08	10/05/17 07:38	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/04/17 19:08	10/05/17 07:38	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/04/17 19:08	10/05/17 07:38	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/04/17 19:08	10/05/17 07:38	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/04/17 19:08	10/05/17 07:38	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/04/17 19:08	10/05/17 07:38	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/04/17 19:08	10/05/17 07:38	1
Isophorone	0.70	U	10	0.70	ug/L		10/04/17 19:08	10/05/17 07:38	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/04/17 19:08	10/05/17 07:38	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/04/17 19:08	10/05/17 07:38	1
Naphthalene	0.83	U	10	0.83	ug/L		10/04/17 19:08	10/05/17 07:38	1
4-Chloroaniline	0.76	~~U~~ UJ	10	0.76	ug/L		10/04/17 19:08	10/05/17 07:38	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/04/17 19:08	10/05/17 07:38	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/04/17 19:08	10/05/17 07:38	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/04/17 19:08	10/05/17 07:38	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/04/17 19:08	10/05/17 07:38	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/04/17 19:08	10/05/17 07:38	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 07:38	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/04/17 19:08	10/05/17 07:38	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/04/17 19:08	10/05/17 07:38	1
3-Nitroaniline	0.85	~~U~~ UJ	10	0.85	ug/L		10/04/17 19:08	10/05/17 07:38	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/04/17 19:08	10/05/17 07:38	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/04/17 19:08	10/05/17 07:38	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/04/17 19:08	10/05/17 07:38	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 07:38	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/04/17 19:08	10/05/17 07:38	1
Fluorene	0.83	U	10	0.83	ug/L		10/04/17 19:08	10/05/17 07:38	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/04/17 19:08	10/05/17 07:38	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/04/17 19:08	10/05/17 07:38	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 07:38	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/04/17 19:08	10/05/17 07:38	1
Anthracene	0.59	U	10	0.59	ug/L		10/04/17 19:08	10/05/17 07:38	1
Carbazole	0.89	U	10	0.89	ug/L		10/04/17 19:08	10/05/17 07:38	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/04/17 19:08	10/05/17 07:38	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/04/17 19:08	10/05/17 07:38	1
Pyrene	0.86	U	10	0.86	ug/L		10/04/17 19:08	10/05/17 07:38	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/04/17 19:08	10/05/17 07:38	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 07:38	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/04/17 19:08	10/05/17 07:38	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/04/17 19:08	10/05/17 07:38	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/04/17 19:08	10/05/17 07:38	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/04/17 19:08	10/05/17 07:38	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/04/17 19:08	10/05/17 07:38	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/04/17 19:08	10/05/17 07:38	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/04/17 19:08	10/05/17 07:38	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/04/17 19:08	10/05/17 07:38	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/04/17 19:08	10/05/17 07:38	1
Caprolactam	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 07:38	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/04/17 19:08	10/05/17 07:38	1

Client Sample ID: UPA-3D Lab Sample ID: 460-142024-5

Date Collected: 09/29/17 15:35 Matrix: Water
Date Received: 09/29/17 20:20

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	1.1	U	10	1.1	ug/L		10/04/17 19:08	10/05/17 07:38	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/04/17 19:08	10/05/17 07:38	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/04/17 19:08*	*10/05/17 07:38*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*106*		*51 - 108*	*10/04/17 19:08*	*10/05/17 07:38*	*1*
Phenol-d5	*34*		*14 - 39*	*10/04/17 19:08*	*10/05/17 07:38*	*1*
Terphenyl-d14	*117*		*40 - 148*	*10/04/17 19:08*	*10/05/17 07:38*	*1*
2,4,6-Tribromophenol	*121*		*26 - 139*	*10/04/17 19:08*	*10/05/17 07:38*	*1*
2-Fluorophenol	*52*		*25 - 58*	*10/04/17 19:08*	*10/05/17 07:38*	*1*
2-Fluorobiphenyl	*109*	*X*	*45 - 107*	*10/04/17 19:08*	*10/05/17 07:38*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	97.9	J	150	92.1	ug/L		10/05/17 09:27	10/05/17 19:09	1
Manganese, Dissolved	11.3	J	15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:09	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142184-1

Client Sample ID: TBGW_100217

Lab Sample ID: 460-142184-1

Date Collected: 10/02/17 00:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/08/17 11:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*109*		*72 - 133*		*10/08/17 11:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 144*		*10/08/17 11:10*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 11:05	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 11:05	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 11:05	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 11:05	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 11:05	1
Acetone	8.9		5.0	1.1	ug/L			10/13/17 11:05	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 11:05	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 11:05	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 11:05	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 11:05	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 11:05	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 11:05	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 11:05	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 11:05	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 11:05	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 11:05	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 11:05	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 11:05	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 11:05	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 11:05	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 11:05	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 11:05	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 11:05	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 11:05	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 11:05	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 11:05	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 11:05	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 11:05	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 11:05	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 11:05	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 11:05	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 11:05	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 11:05	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 11:05	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 11:05	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 11:05	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 11:05	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 11:05	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 11:05	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 11:05	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 11:05	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 11:05	1

Client Sample ID: TBGW_100217

Lab Sample ID: 460-142184-1

Date Collected: 10/02/17 00:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 11:05	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 11:05	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 11:05	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 11:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 11:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/13/17 11:05*	*1*
Bromofluorobenzene	*105*		*77 - 124*		*10/13/17 11:05*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/13/17 11:05*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/13/17 11:05*	*1*

Client Sample ID: MW-28

Lab Sample ID: 460-142184-2

Date Collected: 10/02/17 10:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 05:29	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 05:29	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 05:29	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 05:29	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 05:29	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 05:29	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 05:29	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 05:29	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 05:29	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 05:29	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 05:29	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 05:29	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 05:29	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 05:29	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 05:29	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 05:29	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 05:29	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 05:29	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 05:29	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 05:29	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 05:29	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 05:29	1
Benzene	**0.29**	**J**	1.0	0.090	ug/L			10/13/17 05:29	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 05:29	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 05:29	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 05:29	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 05:29	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 05:29	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 05:29	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 05:29	1

Client Sample ID: MW-28

Lab Sample ID: 460-142184-2

Date Collected: 10/02/17 10:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	5.2		1.0	0.24	ug/L			10/13/17 05:29	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 05:29	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 05:29	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 05:29	1
Ethyl ether	80		1.0	0.11	ug/L			10/13/17 05:29	1
MTBE	0.19	J	1.0	0.13	ug/L			10/13/17 05:29	1
Tetrahydrofuran	1.7	J	2.0	0.36	ug/L			10/13/17 05:29	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 05:29	1
1,4-Dioxane	120		50	8.7	ug/L			10/13/17 05:29	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 05:29	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 05:29	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 05:29	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 05:29	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 05:29	1
Indane	0.49	J	1.0	0.12	ug/L			10/13/17 05:29	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 05:29	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 05:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 05:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/13/17 05:29*	*1*
Bromofluorobenzene	*102*		*77 - 124*		*10/13/17 05:29*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*10/13/17 05:29*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/13/17 05:29*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 20:16	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 20:16	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 20:16	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 20:16	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 20:16	1
Bis(2-chloroethyl)ether	2.3		0.021	0.017	ug/L		10/06/17 09:35	10/06/17 20:16	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/06/17 09:35	10/14/17 08:19	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 08:19	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 08:19	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/06/17 09:35	10/14/17 08:19	1
2-Nitrophenol	0.62	U	10	0.62	ug/L		10/06/17 09:35	10/14/17 08:19	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 08:19	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 08:19	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 08:19	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 08:19	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 08:19	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 08:19	1
4-Nitrophenol	4.9	U	21	4.9	ug/L		10/06/17 09:35	10/14/17 08:19	1

Client Sample ID: MW-28

Lab Sample ID: 460-142184-2

Date Collected: 10/02/17 10:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 08:19	1
1,3-Dichlorobenzene	1.2	U *	10	1.2	ug/L		10/06/17 09:35	10/14/17 08:19	1
1,4-Dichlorobenzene	**0.93**	**J**	10	0.69	ug/L		10/06/17 09:35	10/14/17 08:19	1
1,2-Dichlorobenzene	0.87	U	10	0.87	ug/L		10/06/17 09:35	10/14/17 08:19	1
N-Nitrosodi-n-propylamine	0.87	U	1.0	0.87	ug/L		10/06/17 09:35	10/14/17 08:19	1
Hexachloroethane	0.094	U *	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 08:19	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 08:19	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 08:19	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 08:19	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 08:19	1
Naphthalene	0.84	U	10	0.84	ug/L		10/06/17 09:35	10/14/17 08:19	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 08:19	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 08:19	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 08:19	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 08:19	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 08:19	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 08:19	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 08:19	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 08:19	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 08:19	1
3-Nitroaniline	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 08:19	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 08:19	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 08:19	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 08:19	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 08:19	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 08:19	1
Fluorene	0.84	U	10	0.84	ug/L		10/06/17 09:35	10/14/17 08:19	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 08:19	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 08:19	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 08:19	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 08:19	1
Anthracene	0.60	U	10	0.60	ug/L		10/06/17 09:35	10/14/17 08:19	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 08:19	1
Di-n-butyl phthalate	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 08:19	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 08:19	1
Pyrene	0.87	U	10	0.87	ug/L		10/06/17 09:35	10/14/17 08:19	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 08:19	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 08:19	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 08:19	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/06/17 09:35	10/14/17 08:19	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 08:19	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 08:19	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 08:19	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 08:19	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 08:19	1
Diphenyl ether	**2.4**	**J**	10	0.52	ug/L		10/06/17 09:35	10/14/17 08:19	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 08:19	1
Caprolactam	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 08:19	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 08:19	1

Client Sample ID: MW-28

Lab Sample ID: 460-142184-2

Date Collected: 10/02/17 10:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	15		10	1.1	ug/L		10/06/17 09:35	10/14/17 08:19	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 08:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*11*	*J N*	*ug/L*		*1.90*	*123-91-1*	*10/06/17 09:35*	*10/14/17 08:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*95*		*51 - 108*	*10/06/17 09:35*	*10/14/17 08:19*	*1*
Phenol-d5	*28*		*14 - 39*	*10/06/17 09:35*	*10/14/17 08:19*	*1*
Terphenyl-d14	*86*		*40 - 148*	*10/06/17 09:35*	*10/14/17 08:19*	*1*
2,4,6-Tribromophenol	*99*		*26 - 139*	*10/06/17 09:35*	*10/14/17 08:19*	*1*
2-Fluorophenol	*44*		*25 - 58*	*10/06/17 09:35*	*10/14/17 08:19*	*1*
2-Fluorobiphenyl	*87*		*45 - 107*	*10/06/17 09:35*	*10/14/17 08:19*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	58800		150	92.1	ug/L		10/05/17 09:27	10/05/17 19:13	1
Manganese, Dissolved	1180		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:13	1

Client Sample ID: MW-29

Lab Sample ID: 460-142184-3

Date Collected: 10/02/17 11:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.3		0.40	0.20	ug/L			10/09/17 11:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*119*		*72 - 133*		*10/09/17 11:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*71 - 144*		*10/09/17 11:28*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 05:56	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 05:56	1
Vinyl chloride	0.34	J	1.0	0.060	ug/L			10/13/17 05:56	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 05:56	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 05:56	1
Acetone	5.0 ~~1.5~~	J U	5.0	1.1	ug/L			10/13/17 05:56	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 05:56	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 05:56	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 05:56	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 05:56	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 05:56	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 05:56	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 05:56	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 05:56	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 05:56	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 05:56	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 05:56	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 05:56	1

Client Sample ID: MW-29

Lab Sample ID: 460-142184-3

Date Collected: 10/02/17 11:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 05:56	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 05:56	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 05:56	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 05:56	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 05:56	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 05:56	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 05:56	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 05:56	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 05:56	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 05:56	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 05:56	1
Toluene	13		1.0	0.25	ug/L			10/13/17 05:56	1
Chlorobenzene	6.1		1.0	0.24	ug/L			10/13/17 05:56	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 05:56	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 05:56	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 05:56	1
Ethyl ether	8.5		1.0	0.11	ug/L			10/13/17 05:56	1
MTBE	0.14	J	1.0	0.13	ug/L			10/13/17 05:56	1
Tetrahydrofuran	5.1		2.0	0.36	ug/L			10/13/17 05:56	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 05:56	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 05:56	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 05:56	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 05:56	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 05:56	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 05:56	1
Indane	0.52	J	1.0	0.12	ug/L			10/13/17 05:56	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 05:56	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 05:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 05:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/13/17 05:56*	*1*
Bromofluorobenzene	*104*		*77 - 124*		*10/13/17 05:56*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/13/17 05:56*	*1*
Dibromofluoromethane (Surr)	*106*		*72 - 131*		*10/13/17 05:56*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 20:39	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 20:39	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 20:39	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 20:39	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 20:39	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/06/17 09:35	10/06/17 20:39	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	1.9	J	10	0.43	ug/L		10/06/17 09:35	10/14/17 08:40	1

Client Sample ID: MW-29

Lab Sample ID: 460-142184-3

Date Collected: 10/02/17 11:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 08:40	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 08:40	1
4-Methylphenol	1.1	J	10	0.91	ug/L		10/06/17 09:35	10/14/17 08:40	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/06/17 09:35	10/14/17 08:40	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 08:40	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 08:40	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 08:40	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 08:40	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 08:40	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 08:40	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/06/17 09:35	10/14/17 08:40	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 08:40	1
1,3-Dichlorobenzene	1.2	U *	10	1.2	ug/L		10/06/17 09:35	10/14/17 08:40	1
1,4-Dichlorobenzene	1.3	J	10	0.69	ug/L		10/06/17 09:35	10/14/17 08:40	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 08:40	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/06/17 09:35	10/14/17 08:40	1
Hexachloroethane	0.094	U *	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 08:40	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 08:40	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 08:40	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 08:40	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 08:40	1
Naphthalene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 08:40	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 08:40	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 08:40	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 08:40	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 08:40	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 08:40	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 08:40	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 08:40	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 08:40	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 08:40	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 08:40	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 08:40	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 08:40	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 08:40	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 08:40	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 08:40	1
Fluorene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 08:40	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 08:40	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 08:40	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 08:40	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 08:40	1
Anthracene	0.59	U	10	0.59	ug/L		10/06/17 09:35	10/14/17 08:40	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 08:40	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 08:40	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 08:40	1
Pyrene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 08:40	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 08:40	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 08:40	1

Client Sample ID: MW-29

Lab Sample ID: 460-142184-3

Date Collected: 10/02/17 11:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 08:40	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/06/17 09:35	10/14/17 08:40	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 08:40	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 08:40	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 08:40	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 08:40	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 08:40	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/06/17 09:35	10/14/17 08:40	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 08:40	1
Caprolactam	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 08:40	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 08:40	1
Bisphenol-A	**11**		10	1.1	ug/L		10/06/17 09:35	10/14/17 08:40	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 08:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*14*	*J*	*ug/L*		*6.32*		*10/06/17 09:35*	*10/14/17 08:40*	*1*
Ethanol, 2-butoxy-, phosphate (3:1)	*9.1*	*J N*	*ug/L*		*10.82*	*78-51-3*	*10/06/17 09:35*	*10/14/17 08:40*	*1*
17-(1,5-Dimethylhexyl) -10,13-dimethyl-2,3,4,7,8,9,10,11,12, 1	*17*	*J N*	*ug/L*		*14.25*	*1000210-38-4*	*10/06/17 09:35*	*10/14/17 08:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*97*		*51 - 108*	*10/06/17 09:35*	*10/14/17 08:40*	*1*
Phenol-d5	*28*		*14 - 39*	*10/06/17 09:35*	*10/14/17 08:40*	*1*
Terphenyl-d14	*84*		*40 - 148*	*10/06/17 09:35*	*10/14/17 08:40*	*1*
2,4,6-Tribromophenol	*107*		*26 - 139*	*10/06/17 09:35*	*10/14/17 08:40*	*1*
2-Fluorophenol	*44*		*25 - 58*	*10/06/17 09:35*	*10/14/17 08:40*	*1*
2-Fluorobiphenyl	*88*		*45 - 107*	*10/06/17 09:35*	*10/14/17 08:40*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**41100**		150	92.1	ug/L		10/05/17 09:27	10/05/17 19:17	1
Manganese, Dissolved	**397**		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:17	1

Client Sample ID: P-5L(UPA)

Lab Sample ID: 460-142184-4

Date Collected: 10/02/17 13:25
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**20**		0.40	0.20	ug/L			10/08/17 12:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*110*		*72 - 133*		*10/08/17 12:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 144*		*10/08/17 12:22*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 11:31	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 11:31	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 11:31	1

Client Sample ID: P-5L(UPA)

Lab Sample ID: 460-142184-4

Date Collected: 10/02/17 13:25
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 11:31	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 11:31	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 11:31	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 11:31	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 11:31	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 11:31	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 11:31	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 11:31	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 11:31	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 11:31	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 11:31	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 11:31	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 11:31	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 11:31	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 11:31	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 11:31	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 11:31	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 11:31	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 11:31	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 11:31	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 11:31	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 11:31	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 11:31	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 11:31	1
Tetrachloroethene	**1.6**		1.0	0.12	ug/L			10/13/17 11:31	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 11:31	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 11:31	1
Chlorobenzene	**1.2**		1.0	0.24	ug/L			10/13/17 11:31	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 11:31	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 11:31	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 11:31	1
Ethyl ether	**2.0**		1.0	0.11	ug/L			10/13/17 11:31	1
MTBE	**1.0**		1.0	0.13	ug/L			10/13/17 11:31	1
Tetrahydrofuran	**1.4**	J	2.0	0.36	ug/L			10/13/17 11:31	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 11:31	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 11:31	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 11:31	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 11:31	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 11:31	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 11:31	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 11:31	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 11:31	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 11:31	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 11:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/13/17 11:31*	*1*
Bromofluorobenzene	*102*		*77 - 124*		*10/13/17 11:31*	*1*

Client Sample ID: P-5L(UPA)

Lab Sample ID: 460-142184-4

Date Collected: 10/02/17 13:25
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		80 - 120		10/13/17 11:31	1
Dibromofluoromethane (Surr)	111		72 - 131		10/13/17 11:31	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 21:01	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 21:01	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 21:01	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 21:01	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 21:01	1
Bis(2-chloroethyl)ether	1.1		0.021	0.017	ug/L		10/06/17 09:35	10/06/17 21:01	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/06/17 09:35	10/14/17 09:00	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 09:00	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 09:00	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/06/17 09:35	10/14/17 09:00	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/06/17 09:35	10/14/17 09:00	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 09:00	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 09:00	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 09:00	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 09:00	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 09:00	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 09:00	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/06/17 09:35	10/14/17 09:00	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 09:00	1
1,3-Dichlorobenzene	1.2	U *	10	1.2	ug/L		10/06/17 09:35	10/14/17 09:00	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/06/17 09:35	10/14/17 09:00	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 09:00	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/06/17 09:35	10/14/17 09:00	1
Hexachloroethane	0.094	U *	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 09:00	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 09:00	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 09:00	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 09:00	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 09:00	1
Naphthalene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 09:00	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 09:00	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 09:00	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 09:00	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 09:00	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 09:00	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:00	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:00	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:00	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 09:00	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 09:00	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 09:00	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 09:00	1

Client Sample ID: P-5L(UPA)

Lab Sample ID: 460-142184-4

Date Collected: 10/02/17 13:25
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 09:00	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:00	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:00	1
Fluorene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 09:00	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 09:00	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 09:00	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:00	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:00	1
Anthracene	0.59	U	10	0.59	ug/L		10/06/17 09:35	10/14/17 09:00	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 09:00	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 09:00	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 09:00	1
Pyrene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 09:00	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 09:00	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:00	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 09:00	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/06/17 09:35	10/14/17 09:00	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 09:00	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 09:00	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 09:00	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 09:00	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 09:00	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/06/17 09:35	10/14/17 09:00	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 09:00	1
Caprolactam	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:00	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 09:00	1
Bisphenol-A	8.2	J	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:00	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 09:00	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/06/17 09:35*	*10/14/17 09:00*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*93*		*51 - 108*	*10/06/17 09:35*	*10/14/17 09:00*	*1*
Phenol-d5	*27*		*14 - 39*	*10/06/17 09:35*	*10/14/17 09:00*	*1*
Terphenyl-d14	*90*		*40 - 148*	*10/06/17 09:35*	*10/14/17 09:00*	*1*
2,4,6-Tribromophenol	*92*		*26 - 139*	*10/06/17 09:35*	*10/14/17 09:00*	*1*
2-Fluorophenol	*43*		*25 - 58*	*10/06/17 09:35*	*10/14/17 09:00*	*1*
2-Fluorobiphenyl	*85*		*45 - 107*	*10/06/17 09:35*	*10/14/17 09:00*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	1730		150	92.1	ug/L		10/05/17 09:27	10/05/17 19:21	1
Manganese, Dissolved	1170		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:21	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142184-1

Client Sample ID: RW-10

Lab Sample ID: 460-142184-5

Date Collected: 10/02/17 13:55
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/08/17 12:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*72 - 133*		*10/08/17 12:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*71 - 144*		*10/08/17 12:46*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 11:58	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 11:58	1
Vinyl chloride	0.071	J	1.0	0.060	ug/L			10/13/17 11:58	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 11:58	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 11:58	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 11:58	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 11:58	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 11:58	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 11:58	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 11:58	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 11:58	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 11:58	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 11:58	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 11:58	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 11:58	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 11:58	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 11:58	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 11:58	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 11:58	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 11:58	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 11:58	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 11:58	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 11:58	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 11:58	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 11:58	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 11:58	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 11:58	1
Tetrachloroethene	0.22	J	1.0	0.12	ug/L			10/13/17 11:58	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 11:58	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 11:58	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 11:58	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 11:58	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 11:58	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 11:58	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 11:58	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 11:58	1
Tetrahydrofuran	36		2.0	0.36	ug/L			10/13/17 11:58	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 11:58	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 11:58	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 11:58	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 11:58	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 11:58	1

Client Sample ID: RW-10

Lab Sample ID: 460-142184-5

Date Collected: 10/02/17 13:55
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 11:58	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 11:58	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 11:58	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 11:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 11:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*74 - 132*		*10/13/17 11:58*	*1*
Bromofluorobenzene	*105*		*77 - 124*		*10/13/17 11:58*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/13/17 11:58*	*1*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/13/17 11:58*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 21:24	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 21:24	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 21:24	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 21:24	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 21:24	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/06/17 09:35	10/06/17 21:24	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/06/17 09:35	10/14/17 09:20	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 09:20	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 09:20	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/06/17 09:35	10/14/17 09:20	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/06/17 09:35	10/14/17 09:20	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 09:20	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 09:20	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 09:20	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 09:20	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 09:20	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 09:20	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/06/17 09:35	10/14/17 09:20	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 09:20	1
1,3-Dichlorobenzene	1.2	U *	10	1.2	ug/L		10/06/17 09:35	10/14/17 09:20	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/06/17 09:35	10/14/17 09:20	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 09:20	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/06/17 09:35	10/14/17 09:20	1
Hexachloroethane	0.094	U *	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 09:20	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 09:20	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 09:20	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 09:20	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 09:20	1
Naphthalene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 09:20	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 09:20	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 09:20	1

Client Sample ID: RW-10

Date Collected: 10/02/17 13:55
Date Received: 10/02/17 19:50

Lab Sample ID: 460-142184-5
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 09:20	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 09:20	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 09:20	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:20	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:20	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:20	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 09:20	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 09:20	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 09:20	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 09:20	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 09:20	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:20	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:20	1
Fluorene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 09:20	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 09:20	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 09:20	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:20	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:20	1
Anthracene	0.59	U	10	0.59	ug/L		10/06/17 09:35	10/14/17 09:20	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 09:20	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 09:20	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 09:20	1
Pyrene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 09:20	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 09:20	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:20	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 09:20	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/06/17 09:35	10/14/17 09:20	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 09:20	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 09:20	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 09:20	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 09:20	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 09:20	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/06/17 09:35	10/14/17 09:20	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 09:20	1
Caprolactam	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:20	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 09:20	1
Bisphenol-A	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:20	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 09:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/06/17 09:35*	*10/14/17 09:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*93*		*51 - 108*	*10/06/17 09:35*	*10/14/17 09:20*	*1*
Phenol-d5	*25*		*14 - 39*	*10/06/17 09:35*	*10/14/17 09:20*	*1*
Terphenyl-d14	*98*		*40 - 148*	*10/06/17 09:35*	*10/14/17 09:20*	*1*
2,4,6-Tribromophenol	*91*		*26 - 139*	*10/06/17 09:35*	*10/14/17 09:20*	*1*
2-Fluorophenol	*40*		*25 - 58*	*10/06/17 09:35*	*10/14/17 09:20*	*1*
2-Fluorobiphenyl	*85*		*45 - 107*	*10/06/17 09:35*	*10/14/17 09:20*	*1*

Client Sample ID: RW-10

Lab Sample ID: 460-142184-5

Date Collected: 10/02/17 13:55
Date Received: 10/02/17 19:50

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	31000		150	92.1	ug/L		10/05/17 09:27	10/05/17 19:25	1
Manganese, Dissolved	1030		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:25	1

Client Sample ID: RT-1-UP

Lab Sample ID: 460-142184-6

Date Collected: 10/02/17 15:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 12:25	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 12:25	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 12:25	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 12:25	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 12:25	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 12:25	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 12:25	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 12:25	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 12:25	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 12:25	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 12:25	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 12:25	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 12:25	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 12:25	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 12:25	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 12:25	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 12:25	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 12:25	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 12:25	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 12:25	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 12:25	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 12:25	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 12:25	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 12:25	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 12:25	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 12:25	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 12:25	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 12:25	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 12:25	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 12:25	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 12:25	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 12:25	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 12:25	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 12:25	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 12:25	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 12:25	1
Tetrahydrofuran	2.5		2.0	0.36	ug/L			10/13/17 12:25	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 12:25	1
1,4-Dioxane	67		50	8.7	ug/L			10/13/17 12:25	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 12:25	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 12:25	1

Client Sample ID: RT-1-UP

Lab Sample ID: 460-142184-6

Date Collected: 10/02/17 15:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 12:25	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 12:25	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 12:25	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 12:25	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 12:25	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 12:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 12:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*74 - 132*		*10/13/17 12:25*	*1*
Bromofluorobenzene	*103*		*77 - 124*		*10/13/17 12:25*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/13/17 12:25*	*1*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/13/17 12:25*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 21:46	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 21:46	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 21:46	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 21:46	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 21:46	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/06/17 09:35	10/06/17 21:46	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/06/17 09:35	10/14/17 09:40	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 09:40	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 09:40	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/06/17 09:35	10/14/17 09:40	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/06/17 09:35	10/14/17 09:40	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 09:40	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 09:40	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 09:40	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 09:40	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 09:40	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 09:40	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/06/17 09:35	10/14/17 09:40	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 09:40	1
1,3-Dichlorobenzene	1.2	U *	10	1.2	ug/L		10/06/17 09:35	10/14/17 09:40	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/06/17 09:35	10/14/17 09:40	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 09:40	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/06/17 09:35	10/14/17 09:40	1
Hexachloroethane	0.094	U *	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 09:40	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 09:40	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 09:40	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 09:40	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 09:40	1
Naphthalene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 09:40	1

Client Sample ID: RT-1-UP

Lab Sample ID: 460-142184-6

Date Collected: 10/02/17 15:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 09:40	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 09:40	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 09:40	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 09:40	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 09:40	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:40	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:40	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:40	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 09:40	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 09:40	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 09:40	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 09:40	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 09:40	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:40	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 09:40	1
Fluorene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 09:40	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 09:40	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 09:40	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:40	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 09:40	1
Anthracene	0.59	U	10	0.59	ug/L		10/06/17 09:35	10/14/17 09:40	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 09:40	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 09:40	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 09:40	1
Pyrene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 09:40	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 09:40	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:40	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 09:40	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/06/17 09:35	10/14/17 09:40	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 09:40	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 09:40	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 09:40	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 09:40	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 09:40	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/06/17 09:35	10/14/17 09:40	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 09:40	1
Caprolactam	**2.0**	J	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:40	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 09:40	1
Bisphenol-A	**8.5**	J	10	1.1	ug/L		10/06/17 09:35	10/14/17 09:40	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 09:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*6.9*	*J N*	*ug/L*		*1.90*	*123-91-1*	*10/06/17 09:35*	*10/14/17 09:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*95*		*51 - 108*	*10/06/17 09:35*	*10/14/17 09:40*	*1*
Phenol-d5	*26*		*14 - 39*	*10/06/17 09:35*	*10/14/17 09:40*	*1*
Terphenyl-d14	*94*		*40 - 148*	*10/06/17 09:35*	*10/14/17 09:40*	*1*
2,4,6-Tribromophenol	*91*		*26 - 139*	*10/06/17 09:35*	*10/14/17 09:40*	*1*
2-Fluorophenol	*42*		*25 - 58*	*10/06/17 09:35*	*10/14/17 09:40*	*1*

Client Sample ID: RT-1-UP

Lab Sample ID: 460-142184-6

Date Collected: 10/02/17 15:00
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*45 - 107*	*10/06/17 09:35*	*10/14/17 09:40*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	5000		150	92.1	ug/L		10/05/17 09:27	10/05/17 19:29	1
Manganese, Dissolved	163		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:29	1

Client Sample ID: MW-31

Lab Sample ID: 460-142184-7

Date Collected: 10/02/17 15:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6		0.40	0.20	ug/L			10/09/17 11:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*123*		*72 - 133*		*10/09/17 11:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*119*		*71 - 144*		*10/09/17 11:52*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 12:52	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 12:52	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 12:52	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 12:52	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 12:52	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 12:52	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 12:52	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 12:52	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 12:52	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 12:52	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 12:52	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 12:52	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 12:52	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 12:52	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 12:52	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 12:52	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 12:52	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 12:52	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 12:52	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 12:52	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 12:52	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 12:52	1
Benzene	0.38	J	1.0	0.090	ug/L			10/13/17 12:52	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 12:52	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 12:52	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 12:52	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 12:52	1
Tetrachloroethene	0.60	J	1.0	0.12	ug/L			10/13/17 12:52	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 12:52	1

Client Sample ID: MW-31

Lab Sample ID: 460-142184-7

Date Collected: 10/02/17 15:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 12:52	1
Chlorobenzene	**5.2**		1.0	0.24	ug/L			10/13/17 12:52	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 12:52	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 12:52	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 12:52	1
Ethyl ether	**5.2**		1.0	0.11	ug/L			10/13/17 12:52	1
MTBE	**0.25**	J	1.0	0.13	ug/L			10/13/17 12:52	1
Tetrahydrofuran	**9.5**		2.0	0.36	ug/L			10/13/17 12:52	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 12:52	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 12:52	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 12:52	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 12:52	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 12:52	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 12:52	1
Indane	**0.15**	J	1.0	0.12	ug/L			10/13/17 12:52	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 12:52	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 12:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 12:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/13/17 12:52*	*1*
Bromofluorobenzene	*104*		*77 - 124*		*10/13/17 12:52*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/13/17 12:52*	*1*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/13/17 12:52*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 22:09	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 22:09	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 22:09	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 22:09	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 22:09	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/06/17 09:35	10/06/17 22:09	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/06/17 09:35	10/14/17 10:01	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 10:01	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 10:01	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/06/17 09:35	10/14/17 10:01	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/06/17 09:35	10/14/17 10:01	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 10:01	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 10:01	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 10:01	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 10:01	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 10:01	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 10:01	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/06/17 09:35	10/14/17 10:01	1

Client Sample ID: MW-31

Lab Sample ID: 460-142184-7

Date Collected: 10/02/17 15:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 10:01	1
1,3-Dichlorobenzene	1.2	U *	10	1.2	ug/L		10/06/17 09:35	10/14/17 10:01	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/06/17 09:35	10/14/17 10:01	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 10:01	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/06/17 09:35	10/14/17 10:01	1
Hexachloroethane	0.094	U *	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 10:01	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 10:01	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 10:01	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 10:01	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 10:01	1
Naphthalene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 10:01	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 10:01	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 10:01	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 10:01	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 10:01	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 10:01	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:01	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:01	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:01	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 10:01	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 10:01	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 10:01	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 10:01	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 10:01	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:01	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:01	1
Fluorene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 10:01	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 10:01	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 10:01	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:01	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:01	1
Anthracene	0.59	U	10	0.59	ug/L		10/06/17 09:35	10/14/17 10:01	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 10:01	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 10:01	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 10:01	1
Pyrene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 10:01	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 10:01	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:01	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 10:01	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/06/17 09:35	10/14/17 10:01	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 10:01	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 10:01	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 10:01	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 10:01	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 10:01	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/06/17 09:35	10/14/17 10:01	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 10:01	1
Caprolactam	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:01	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 10:01	1

Client Sample ID: MW-31

Lab Sample ID: 460-142184-7

Date Collected: 10/02/17 15:30
Date Received: 10/02/17 19:50

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	8.6	J	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:01	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 10:01	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/06/17 09:35*	*10/14/17 10:01*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*89*		*51 - 108*	*10/06/17 09:35*	*10/14/17 10:01*	*1*
Phenol-d5	*25*		*14 - 39*	*10/06/17 09:35*	*10/14/17 10:01*	*1*
Terphenyl-d14	*85*		*40 - 148*	*10/06/17 09:35*	*10/14/17 10:01*	*1*
2,4,6-Tribromophenol	*87*		*26 - 139*	*10/06/17 09:35*	*10/14/17 10:01*	*1*
2-Fluorophenol	*39*		*25 - 58*	*10/06/17 09:35*	*10/14/17 10:01*	*1*
2-Fluorobiphenyl	*82*		*45 - 107*	*10/06/17 09:35*	*10/14/17 10:01*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	10100		150	92.1	ug/L		10/05/17 09:27	10/05/17 19:32	1
Manganese, Dissolved	293		15.0	3.1	ug/L		10/05/17 09:27	10/05/17 19:32	1

Client Sample ID: TBGW_100317

Lab Sample ID: 460-142301-1

Date Collected: 10/03/17 00:00
Date Received: 10/03/17 20:20

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/10/17 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*72 - 133*		*10/10/17 16:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*71 - 144*		*10/10/17 16:44*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 13:18	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 13:18	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 13:18	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 13:18	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 13:18	1
Acetone	10		5.0	1.1	ug/L			10/13/17 13:18	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 13:18	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 13:18	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 13:18	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 13:18	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 13:18	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 13:18	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 13:18	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 13:18	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 13:18	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 13:18	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 13:18	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 13:18	1

Client Sample ID: TBGW_100317

Lab Sample ID: 460-142301-1

Date Collected: 10/03/17 00:00
Date Received: 10/03/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 13:18	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 13:18	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 13:18	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 13:18	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 13:18	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 13:18	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 13:18	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 13:18	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 13:18	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 13:18	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 13:18	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 13:18	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 13:18	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 13:18	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 13:18	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 13:18	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 13:18	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 13:18	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 13:18	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 13:18	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 13:18	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 13:18	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 13:18	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 13:18	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 13:18	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 13:18	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 13:18	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 13:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 13:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/13/17 13:18*	*1*
Bromofluorobenzene	*103*		*77 - 124*		*10/13/17 13:18*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/13/17 13:18*	*1*
Dibromofluoromethane (Surr)	*114*		*72 - 131*		*10/13/17 13:18*	*1*

Client Sample ID: BW-1

Lab Sample ID: 460-142301-2

Date Collected: 10/03/17 12:15
Date Received: 10/03/17 20:20

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.6		0.40	0.20	ug/L			10/11/17 05:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*120*		*72 - 133*		*10/11/17 05:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*71 - 144*		*10/11/17 05:01*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142184-1

Client Sample ID: BW-1

Lab Sample ID: 460-142301-2

Date Collected: 10/03/17 12:15
Date Received: 10/03/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 13:45	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 13:45	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 13:45	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 13:45	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 13:45	1
Acetone	5.0 ~~1.3~~	J UJ	5.0	1.1	ug/L			10/13/17 13:45	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 13:45	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 13:45	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 13:45	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 13:45	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 13:45	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 13:45	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 13:45	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 13:45	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 13:45	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 13:45	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 13:45	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 13:45	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 13:45	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 13:45	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 13:45	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 13:45	1
Benzene	0.15	J	1.0	0.090	ug/L			10/13/17 13:45	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 13:45	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 13:45	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 13:45	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 13:45	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 13:45	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 13:45	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 13:45	1
Chlorobenzene	6.6		1.0	0.24	ug/L			10/13/17 13:45	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 13:45	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 13:45	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 13:45	1
Ethyl ether	11		1.0	0.11	ug/L			10/13/17 13:45	1
MTBE	0.20	J	1.0	0.13	ug/L			10/13/17 13:45	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 13:45	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 13:45	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 13:45	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 13:45	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 13:45	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 13:45	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 13:45	1
Indane	0.19	J	1.0	0.12	ug/L			10/13/17 13:45	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 13:45	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 13:45	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 13:45*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142184-1

Client Sample ID: BW-1

Lab Sample ID: 460-142301-2

Date Collected: 10/03/17 12:15
Date Received: 10/03/17 20:20

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		74 - 132		10/13/17 13:45	1
Bromofluorobenzene	104		77 - 124		10/13/17 13:45	1
Toluene-d8 (Surr)	97		80 - 120		10/13/17 13:45	1
Dibromofluoromethane (Surr)	113		72 - 131		10/13/17 13:45	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 22:32	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 22:32	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 22:32	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 22:32	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 22:32	1
Bis(2-chloroethyl)ether	0.27		0.021	0.017	ug/L		10/06/17 09:35	10/06/17 22:32	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/06/17 09:35	10/14/17 10:21	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 10:21	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 10:21	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/06/17 09:35	10/14/17 10:21	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/06/17 09:35	10/14/17 10:21	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 10:21	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 10:21	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 10:21	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 10:21	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 10:21	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 10:21	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/06/17 09:35	10/14/17 10:21	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 10:21	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/06/17 09:35	10/14/17 10:21	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/06/17 09:35	10/14/17 10:21	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 10:21	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/06/17 09:35	10/14/17 10:21	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 10:21	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 10:21	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 10:21	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 10:21	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 10:21	1
Naphthalene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 10:21	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 10:21	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 10:21	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 10:21	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 10:21	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 10:21	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:21	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:21	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:21	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 10:21	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 10:21	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 10:21	1

Client Sample ID: BW-1

Lab Sample ID: 460-142301-2

Date Collected: 10/03/17 12:15
Date Received: 10/03/17 20:20

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 10:21	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 10:21	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:21	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:21	1
Fluorene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 10:21	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 10:21	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 10:21	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:21	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:21	1
Anthracene	0.59	U	10	0.59	ug/L		10/06/17 09:35	10/14/17 10:21	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 10:21	1
Di-n-butyl phthalate	**0.86**	J	10	0.85	ug/L		10/06/17 09:35	10/14/17 10:21	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 10:21	1
Pyrene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 10:21	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 10:21	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:21	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 10:21	1
Bis(2-ethylhexyl) phthalate	**2.6**		2.1	0.75	ug/L		10/06/17 09:35	10/14/17 10:21	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 10:21	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 10:21	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 10:21	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 10:21	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 10:21	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/06/17 09:35	10/14/17 10:21	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 10:21	1
Caprolactam	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:21	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 10:21	1
Bisphenol-A	**10**		10	1.1	ug/L		10/06/17 09:35	10/14/17 10:21	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 10:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Hexadecanoic acid, 1,1-dimethylethyl ester	*8.5*	*J N*	*ug/L*		*10.06*	*31158-91-5*	*10/06/17 09:35*	*10/14/17 10:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*101*		*51 - 108*	*10/06/17 09:35*	*10/14/17 10:21*	*1*
Phenol-d5	*28*		*14 - 39*	*10/06/17 09:35*	*10/14/17 10:21*	*1*
Terphenyl-d14	*92*		*40 - 148*	*10/06/17 09:35*	*10/14/17 10:21*	*1*
2,4,6-Tribromophenol	*102*		*26 - 139*	*10/06/17 09:35*	*10/14/17 10:21*	*1*
2-Fluorophenol	*45*		*25 - 58*	*10/06/17 09:35*	*10/14/17 10:21*	*1*
2-Fluorobiphenyl	*94*		*45 - 107*	*10/06/17 09:35*	*10/14/17 10:21*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**17200**		150	92.1	ug/L		10/08/17 22:45	10/10/17 16:35	1
Manganese, Dissolved	**3970**		15.0	3.1	ug/L		10/08/17 22:45	10/10/17 16:35	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142184-1

Client Sample ID: BW-2

Lab Sample ID: 460-142301-3

Date Collected: 10/03/17 12:25
Date Received: 10/03/17 20:20

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 14:12	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 14:12	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 14:12	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 14:12	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 14:12	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 14:12	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 14:12	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 14:12	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 14:12	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 14:12	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 14:12	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 14:12	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 14:12	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 14:12	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 14:12	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 14:12	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 14:12	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 14:12	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 14:12	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 14:12	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 14:12	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 14:12	1
Benzene	**0.15**	**J**	1.0	0.090	ug/L			10/13/17 14:12	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 14:12	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 14:12	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 14:12	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 14:12	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 14:12	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 14:12	1
Toluene	**0.67**	**J**	1.0	0.25	ug/L			10/13/17 14:12	1
Chlorobenzene	**3.2**		1.0	0.24	ug/L			10/13/17 14:12	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 14:12	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 14:12	1
Xylenes, Total	**0.48**	**J**	2.0	0.28	ug/L			10/13/17 14:12	1
Ethyl ether	**9.0**		1.0	0.11	ug/L			10/13/17 14:12	1
MTBE	**0.39**	**J**	1.0	0.13	ug/L			10/13/17 14:12	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 14:12	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 14:12	1
1,4-Dioxane	**120**		50	8.7	ug/L			10/13/17 14:12	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 14:12	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 14:12	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 14:12	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 14:12	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 14:12	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 14:12	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 14:12	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 14:12	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 14:12*	*1*

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		74 - 132		10/13/17 14:12	1
Bromofluorobenzene	104		77 - 124		10/13/17 14:12	1
Toluene-d8 (Surr)	96		80 - 120		10/13/17 14:12	1
Dibromofluoromethane (Surr)	112		72 - 131		10/13/17 14:12	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/06/17 09:35	10/06/17 22:54	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/06/17 09:35	10/06/17 22:54	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/06/17 09:35	10/06/17 22:54	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/06/17 09:35	10/06/17 22:54	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/06/17 09:35	10/06/17 22:54	1
Bis(2-chloroethyl)ether	0.28		0.021	0.017	ug/L		10/06/17 09:35	10/06/17 22:54	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/06/17 09:35	10/14/17 10:41	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 10:41	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/06/17 09:35	10/14/17 10:41	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/06/17 09:35	10/14/17 10:41	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/06/17 09:35	10/14/17 10:41	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/06/17 09:35	10/14/17 10:41	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/06/17 09:35	10/14/17 10:41	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/06/17 09:35	10/14/17 10:41	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/06/17 09:35	10/14/17 10:41	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/06/17 09:35	10/14/17 10:41	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/06/17 09:35	10/14/17 10:41	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/06/17 09:35	10/14/17 10:41	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/06/17 09:35	10/14/17 10:41	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/06/17 09:35	10/14/17 10:41	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/06/17 09:35	10/14/17 10:41	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 10:41	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/06/17 09:35	10/14/17 10:41	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 10:41	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/06/17 09:35	10/14/17 10:41	1
Isophorone	0.70	U	10	0.70	ug/L		10/06/17 09:35	10/14/17 10:41	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 10:41	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/06/17 09:35	10/14/17 10:41	1
Naphthalene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 10:41	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/06/17 09:35	10/14/17 10:41	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 10:41	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 10:41	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 10:41	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/06/17 09:35	10/14/17 10:41	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:41	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:41	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:41	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/06/17 09:35	10/14/17 10:41	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 10:41	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/06/17 09:35	10/14/17 10:41	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 10:41	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/06/17 09:35	10/14/17 10:41	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:41	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/06/17 09:35	10/14/17 10:41	1
Fluorene	0.83	U	10	0.83	ug/L		10/06/17 09:35	10/14/17 10:41	1

Client Sample ID: BW-2

Lab Sample ID: 460-142301-3

Date Collected: 10/03/17 12:25
Date Received: 10/03/17 20:20

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/06/17 09:35	10/14/17 10:41	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/06/17 09:35	10/14/17 10:41	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:41	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/06/17 09:35	10/14/17 10:41	1
Anthracene	0.59	U	10	0.59	ug/L		10/06/17 09:35	10/14/17 10:41	1
Carbazole	0.89	U	10	0.89	ug/L		10/06/17 09:35	10/14/17 10:41	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/06/17 09:35	10/14/17 10:41	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/06/17 09:35	10/14/17 10:41	1
Pyrene	0.86	U	10	0.86	ug/L		10/06/17 09:35	10/14/17 10:41	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/06/17 09:35	10/14/17 10:41	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:41	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/06/17 09:35	10/14/17 10:41	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/06/17 09:35	10/14/17 10:41	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/06/17 09:35	10/14/17 10:41	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/06/17 09:35	10/14/17 10:41	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/06/17 09:35	10/14/17 10:41	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/06/17 09:35	10/14/17 10:41	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/06/17 09:35	10/14/17 10:41	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/06/17 09:35	10/14/17 10:41	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/06/17 09:35	10/14/17 10:41	1
Caprolactam	1.1	U	10	1.1	ug/L		10/06/17 09:35	10/14/17 10:41	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/06/17 09:35	10/14/17 10:41	1
Bisphenol-A	11		10	1.1	ug/L		10/06/17 09:35	10/14/17 10:41	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/06/17 09:35	10/14/17 10:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*13*	*J N*	*ug/L*		*1.91*	*123-91-1*	*10/06/17 09:35*	*10/14/17 10:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*105*		*51 - 108*	*10/06/17 09:35*	*10/14/17 10:41*	*1*
Phenol-d5	*29*		*14 - 39*	*10/06/17 09:35*	*10/14/17 10:41*	*1*
Terphenyl-d14	*104*		*40 - 148*	*10/06/17 09:35*	*10/14/17 10:41*	*1*
2,4,6-Tribromophenol	*108*		*26 - 139*	*10/06/17 09:35*	*10/14/17 10:41*	*1*
2-Fluorophenol	*46*		*25 - 58*	*10/06/17 09:35*	*10/14/17 10:41*	*1*
2-Fluorobiphenyl	*97*		*45 - 107*	*10/06/17 09:35*	*10/14/17 10:41*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	4370		150	92.1	ug/L		10/08/17 22:45	10/10/17 16:38	1
Manganese, Dissolved	1680		15.0	3.1	ug/L		10/08/17 22:45	10/10/17 16:38	1

Client Sample ID: TBGW_100417

Lab Sample ID: 460-142512-1

Date Collected: 10/04/17 00:00
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/11/17 14:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*72 - 133*		*10/11/17 14:06*	*1*

Client Sample ID: TBGW_100417

Lab Sample ID: 460-142512-1

Date Collected: 10/04/17 00:00
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		71 - 144		10/11/17 14:06	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 14:39	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 14:39	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 14:39	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 14:39	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 14:39	1
Acetone	4.6	J	5.0	1.1	ug/L			10/13/17 14:39	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 14:39	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 14:39	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 14:39	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 14:39	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 14:39	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 14:39	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 14:39	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 14:39	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 14:39	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 14:39	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 14:39	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 14:39	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 14:39	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 14:39	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 14:39	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 14:39	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 14:39	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 14:39	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 14:39	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 14:39	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 14:39	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 14:39	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 14:39	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 14:39	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 14:39	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 14:39	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 14:39	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 14:39	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 14:39	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 14:39	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 14:39	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 14:39	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 14:39	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 14:39	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 14:39	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 14:39	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 14:39	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 14:39	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 14:39	1

Client Sample ID: TBGW_100417

Lab Sample ID: 460-142512-1

Date Collected: 10/04/17 00:00
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 14:39	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 14:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/13/17 14:39*	*1*
Bromofluorobenzene	*104*		*77 - 124*		*10/13/17 14:39*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/13/17 14:39*	*1*
Dibromofluoromethane (Surr)	*111*		*72 - 131*		*10/13/17 14:39*	*1*

Client Sample ID: DGC-5

Lab Sample ID: 460-142512-2

Date Collected: 10/04/17 10:35
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4		0.40	0.20	ug/L			10/11/17 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*72 - 133*		*10/11/17 16:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*122*		*71 - 144*		*10/11/17 16:51*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 22:41	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 22:41	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 22:41	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 22:41	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 22:41	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 22:41	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 22:41	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 22:41	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 22:41	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 22:41	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 22:41	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 22:41	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 22:41	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 22:41	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 22:41	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 22:41	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 22:41	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 22:41	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 22:41	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 22:41	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 22:41	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 22:41	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 22:41	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 22:41	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 22:41	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 22:41	1

Client Sample ID: DGC-5

Lab Sample ID: 460-142512-2

Date Collected: 10/04/17 10:35
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 22:41	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 22:41	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 22:41	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 22:41	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 22:41	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 22:41	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 22:41	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 22:41	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 22:41	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 22:41	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 22:41	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 22:41	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 22:41	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 22:41	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 22:41	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 22:41	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 22:41	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 22:41	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 22:41	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 22:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 22:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/13/17 22:41*	*1*
Bromofluorobenzene	*103*		*77 - 124*		*10/13/17 22:41*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/13/17 22:41*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/13/17 22:41*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/10/17 18:35	10/11/17 20:16	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/10/17 18:35	10/11/17 20:16	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/10/17 18:35	10/11/17 20:16	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/10/17 18:35	10/11/17 20:16	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/10/17 18:35	10/11/17 20:16	1
Bis(2-chloroethyl)ether	0.077	J+	0.020	0.016	ug/L		10/10/17 18:35	10/11/17 20:16	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/10/17 18:35	10/12/17 20:35	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 20:35	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/12/17 20:35	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/12/17 20:35	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/12/17 20:35	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/12/17 20:35	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/12/17 20:35	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/12/17 20:35	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/10/17 18:35	10/12/17 20:35	1

Client Sample ID: DGC-5

Lab Sample ID: 460-142512-2

Date Collected: 10/04/17 10:35
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/12/17 20:35	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/12/17 20:35	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/12/17 20:35	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/10/17 18:35	10/12/17 20:35	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 20:35	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/12/17 20:35	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 20:35	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/10/17 18:35	10/12/17 20:35	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 20:35	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/10/17 18:35	10/12/17 20:35	1
Isophorone	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/12/17 20:35	1
Bis(2-chloroethoxy)methane	0.69	U *	10	0.69	ug/L		10/10/17 18:35	10/12/17 20:35	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/10/17 18:35	10/12/17 20:35	1
Naphthalene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/12/17 20:35	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/12/17 20:35	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 20:35	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/12/17 20:35	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/12/17 20:35	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/12/17 20:35	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:35	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/12/17 20:35	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:35	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/10/17 18:35	10/12/17 20:35	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 20:35	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/12/17 20:35	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 20:35	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/17 18:35	10/12/17 20:35	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:35	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/10/17 18:35	10/12/17 20:35	1
Fluorene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/12/17 20:35	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/10/17 18:35	10/12/17 20:35	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 20:35	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:35	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:35	1
Anthracene	0.57	U	10	0.57	ug/L		10/10/17 18:35	10/12/17 20:35	1
Carbazole	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 20:35	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 20:35	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/12/17 20:35	1
Pyrene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 20:35	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/12/17 20:35	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:35	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/10/17 18:35	10/12/17 20:35	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/10/17 18:35	10/12/17 20:35	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/12/17 20:35	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/12/17 20:35	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/12/17 20:35	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 20:35	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/12/17 20:35	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/12/17 20:35	1

Client Sample ID: DGC-5

Lab Sample ID: 460-142512-2

Date Collected: 10/04/17 10:35
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 20:35	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 20:35	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/12/17 20:35	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:35	1
N-Methylaniline	0.87	~~U~~ UJ	5.0	0.87	ug/L		10/10/17 18:35	10/12/17 20:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*24*	*J*	*ug/L*		*7.62*		*10/10/17 18:35*	*10/12/17 20:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*116*	*X*	*51 - 108*	*10/10/17 18:35*	*10/12/17 20:35*	*1*
Phenol-d5	*37*		*14 - 39*	*10/10/17 18:35*	*10/12/17 20:35*	*1*
Terphenyl-d14	*83*		*40 - 148*	*10/10/17 18:35*	*10/12/17 20:35*	*1*
2,4,6-Tribromophenol	*99*		*26 - 139*	*10/10/17 18:35*	*10/12/17 20:35*	*1*
2-Fluorophenol	*55*		*25 - 58*	*10/10/17 18:35*	*10/12/17 20:35*	*1*
2-Fluorobiphenyl	*91*		*45 - 107*	*10/10/17 18:35*	*10/12/17 20:35*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	53300		150	92.1	ug/L		10/09/17 11:26	10/10/17 22:02	1
Manganese, Dissolved	8380		15.0	3.1	ug/L		10/09/17 11:26	10/10/17 22:02	1

Client Sample ID: P-6(UPA)

Lab Sample ID: 460-142512-3

Date Collected: 10/04/17 10:35
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 15:32	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 15:32	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 15:32	1
Chloroethane	0.68	J	1.0	0.37	ug/L			10/13/17 15:32	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 15:32	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 15:32	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 15:32	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 15:32	1
1,1-Dichloroethane	0.37	J	1.0	0.24	ug/L			10/13/17 15:32	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 15:32	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 15:32	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 15:32	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 15:32	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 15:32	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 15:32	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 15:32	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 15:32	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 15:32	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 15:32	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 15:32	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 15:32	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 15:32	1

Client Sample ID: P-6(UPA) Lab Sample ID: 460-142512-3

Date Collected: 10/04/17 10:35 Matrix: Water
Date Received: 10/04/17 20:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	130		1.0	0.090	ug/L			10/13/17 15:32	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 15:32	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 15:32	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 15:32	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 15:32	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 15:32	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 15:32	1
Toluene	0.73	J	1.0	0.25	ug/L			10/13/17 15:32	1
Chlorobenzene	4.6		1.0	0.24	ug/L			10/13/17 15:32	1
Ethylbenzene	4.9		1.0	0.30	ug/L			10/13/17 15:32	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 15:32	1
Xylenes, Total	23	~~F1~~ J	2.0	0.28	ug/L			10/13/17 15:32	1
Ethyl ether	2.7		1.0	0.11	ug/L			10/13/17 15:32	1
MTBE	0.18	J	1.0	0.13	ug/L			10/13/17 15:32	1
Tetrahydrofuran	80	~~F1~~ J	2.0	0.36	ug/L			10/13/17 15:32	1
Cyclohexane	3.2		1.0	0.26	ug/L			10/13/17 15:32	1
1,4-Dioxane	180		50	8.7	ug/L			10/13/17 15:32	1
1,2,4-Trimethylbenzene	13	~~F1~~ J	1.0	0.23	ug/L			10/13/17 15:32	1
1,3,5-Trimethylbenzene	4.8		1.0	0.25	ug/L			10/13/17 15:32	1
Isopropylbenzene	4.3		1.0	0.32	ug/L			10/13/17 15:32	1
N-Propylbenzene	6.4	~~F1~~ J	1.0	0.29	ug/L			10/13/17 15:32	1
Methylcyclohexane	3.0		1.0	0.22	ug/L			10/13/17 15:32	1
Indane	5.6		1.0	0.12	ug/L			10/13/17 15:32	1
Dichlorofluoromethane	11		1.0	0.21	ug/L			10/13/17 15:32	1
1,2,3-Trimethylbenzene	10		1.0	0.11	ug/L			10/13/17 15:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-2-methyl-	*8.1*	*J N*	*ug/L*		*10.35*	*611-14-3*		*10/13/17 15:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/13/17 15:32*	*1*
Bromofluorobenzene	*110*		*77 - 124*		*10/13/17 15:32*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/13/17 15:32*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/13/17 15:32*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/10/17 18:35	10/11/17 19:53	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/10/17 18:35	10/11/17 19:53	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/10/17 18:35	10/11/17 19:53	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/10/17 18:35	10/11/17 19:53	1
Pentachlorophenol	0.056	J	0.20	0.031	ug/L		10/10/17 18:35	10/11/17 19:53	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U ~~F1~~	10	0.41	ug/L		10/10/17 18:35	10/12/17 20:14	1
2-Chlorophenol	0.74	U ~~F1~~	10	0.74	ug/L		10/10/17 18:35	10/12/17 20:14	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/12/17 20:14	1
4-Methylphenol	0.87	U ~~F1~~	10	0.87	ug/L		10/10/17 18:35	10/12/17 20:14	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/12/17 20:14	1

Client Sample ID: P-6(UPA)

Lab Sample ID: 460-142512-3

Date Collected: 10/04/17 10:35
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	0.91	U ~~F1~~	10	0.91	ug/L		10/10/17 18:35	10/12/17 20:14	1
2,4-Dichlorophenol	0.63	U ~~F1~~	10	0.63	ug/L		10/10/17 18:35	10/12/17 20:14	1
4-Chloro-3-methylphenol	0.76	U ~~F1~~	10	0.76	ug/L		10/10/17 18:35	10/12/17 20:14	1
2,4,6-Trichlorophenol	0.53	U ~~F1~~	10	0.53	ug/L		10/10/17 18:35	10/12/17 20:14	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/12/17 20:14	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/12/17 20:14	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/12/17 20:14	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/10/17 18:35	10/12/17 20:14	1
Bis(2-chloroethyl)ether	**52**	J+	1.0	0.12	ug/L		10/10/17 18:35	10/12/17 20:14	1
1,3-Dichlorobenzene	1.1	U ~~F1~~	10	1.1	ug/L		10/10/17 18:35	10/12/17 20:14	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/12/17 20:14	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 20:14	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/10/17 18:35	10/12/17 20:14	1
Hexachloroethane	0.090	U ~~F1~~	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 20:14	1
Nitrobenzene	0.49	U ~~F1~~	1.0	0.49	ug/L		10/10/17 18:35	10/12/17 20:14	1
Isophorone	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/12/17 20:14	1
Bis(2-chloroethoxy)methane	0.69	U ~~* F1~~	10	0.69	ug/L		10/10/17 18:35	10/12/17 20:14	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/10/17 18:35	10/12/17 20:14	1
Naphthalene	0.80	U ~~F1~~	10	0.80	ug/L		10/10/17 18:35	10/12/17 20:14	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/12/17 20:14	1
Hexachlorobutadiene	0.76	U ~~F1~~	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 20:14	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/12/17 20:14	1
Hexachlorocyclopentadiene	0.61	U ~~F1~~	10	0.61	ug/L		10/10/17 18:35	10/12/17 20:14	1
2-Chloronaphthalene	0.61	U ~~F1~~	10	0.61	ug/L		10/10/17 18:35	10/12/17 20:14	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:14	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/12/17 20:14	1
Acenaphthylene	0.65	U ~~F1~~	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:14	1
2,6-Dinitrotoluene	0.88	U ~~F1~~	2.0	0.88	ug/L		10/10/17 18:35	10/12/17 20:14	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 20:14	1
Acenaphthene	0.88	U ~~F1~~	10	0.88	ug/L		10/10/17 18:35	10/12/17 20:14	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 20:14	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/17 18:35	10/12/17 20:14	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:14	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/10/17 18:35	10/12/17 20:14	1
Fluorene	0.80	U ~~F1~~	10	0.80	ug/L		10/10/17 18:35	10/12/17 20:14	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/10/17 18:35	10/12/17 20:14	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 20:14	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:14	1
Phenanthrene	0.65	U ~~F1~~	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:14	1
Anthracene	0.57	U	10	0.57	ug/L		10/10/17 18:35	10/12/17 20:14	1
Carbazole	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 20:14	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 20:14	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/12/17 20:14	1
Pyrene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 20:14	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/12/17 20:14	1
3,3'-Dichlorobenzidine	1.0	~~U F1~~ UJ	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:14	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/10/17 18:35	10/12/17 20:14	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/10/17 18:35	10/12/17 20:14	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/12/17 20:14	1

Client Sample ID: P-6(UPA)

Lab Sample ID: 460-142512-3

Date Collected: 10/04/17 10:35
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/12/17 20:14	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/12/17 20:14	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 20:14	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/12/17 20:14	1
Diphenyl ether	**1.5**	~~J F1~~ J+	10	0.50	ug/L		10/10/17 18:35	10/12/17 20:14	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 20:14	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 20:14	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/12/17 20:14	1
Bisphenol-A	**48**		10	1.0	ug/L		10/10/17 18:35	10/12/17 20:14	1
N-Methylaniline	**7.9**	± J	5.0	0.87	ug/L		10/10/17 18:35	10/12/17 20:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*61*		*ug/L*		*2.00*	*123-91-1*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*20*	*J*	*ug/L*		*2.75*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*19*	*J*	*ug/L*		*4.81*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
2-Isopropoxyphenol	*100*	*J N*	*ug/L*		*5.75*	*4812-20-8*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
1-Propanol, 3-phenoxy-	*32*	*J N*	*ug/L*		*6.22*	*6180-61-6*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*18*	*J*	*ug/L*		*6.34*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*49*	*J*	*ug/L*		*6.51*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*19*	*J*	*ug/L*		*6.54*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*18*	*J*	*ug/L*		*6.65*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*190*	*J*	*ug/L*		*7.41*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*33*	*J*	*ug/L*		*7.71*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*15*	*J*	*ug/L*		*8.06*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
2(3H)-Benzothiazolone	*16*	*J N*	*ug/L*		*8.53*	*934-34-9*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
Urea, N,N'-dimethyl-N,N'-diphenyl-	*18*	*J N*	*ug/L*		*9.26*	*611-92-7*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*23*	*J*	*ug/L*		*10.36*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*19*	*J*	*ug/L*		*11.04*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*26*	*J*	*ug/L*		*12.13*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*31*	*J*	*ug/L*		*13.10*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*32*	*J*	*ug/L*		*13.35*		*10/10/17 18:35*	*10/12/17 20:14*	*1*
Unknown	*23*	*J*	*ug/L*		*14.69*		*10/10/17 18:35*	*10/12/17 20:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*111*	*X*	*51 - 108*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
Phenol-d5	*37*		*14 - 39*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
Terphenyl-d14	*79*		*40 - 148*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
2,4,6-Tribromophenol	*102*		*26 - 139*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
2-Fluorophenol	*53*		*25 - 58*	*10/10/17 18:35*	*10/12/17 20:14*	*1*
2-Fluorobiphenyl	*97*		*45 - 107*	*10/10/17 18:35*	*10/12/17 20:14*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**14000**		150	92.1	ug/L		10/12/17 08:04	10/12/17 17:02	1
Manganese, Dissolved	**669**		15.0	3.1	ug/L		10/12/17 08:04	10/12/17 17:02	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142184-1

Client Sample ID: RBGW_100417

Lab Sample ID: 460-142512-4

Date Collected: 10/04/17 13:15
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.22	J	0.40	0.20	ug/L			10/11/17 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*72 - 133*		*10/11/17 14:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 144*		*10/11/17 14:29*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 15:05	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 15:05	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 15:05	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 15:05	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 15:05	1
Acetone	18		5.0	1.1	ug/L			10/13/17 15:05	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 15:05	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 15:05	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 15:05	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 15:05	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 15:05	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 15:05	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 15:05	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 15:05	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 15:05	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 15:05	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 15:05	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 15:05	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 15:05	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 15:05	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 15:05	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 15:05	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 15:05	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 15:05	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 15:05	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 15:05	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 15:05	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 15:05	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 15:05	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 15:05	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 15:05	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 15:05	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 15:05	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 15:05	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 15:05	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 15:05	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 15:05	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 15:05	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 15:05	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 15:05	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 15:05	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 15:05	1

Client Sample ID: RBGW_100417

Lab Sample ID: 460-142512-4

Date Collected: 10/04/17 13:15
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 15:05	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 15:05	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 15:05	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 15:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl Alcohol	*9.3*	*J N*	*ug/L*		*2.63*	*67-63-0*		*10/13/17 15:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/13/17 15:05*	*1*
Bromofluorobenzene	*101*		*77 - 124*		*10/13/17 15:05*	*1*
Toluene-d8 (Surr)	*91*		*80 - 120*		*10/13/17 15:05*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/13/17 15:05*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/10/17 18:35	10/11/17 20:39	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/10/17 18:35	10/11/17 20:39	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/10/17 18:35	10/11/17 20:39	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/10/17 18:35	10/11/17 20:39	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/10/17 18:35	10/11/17 20:39	1
Bis(2-chloroethyl)ether	0.016	U	0.020	0.016	ug/L		10/10/17 18:35	10/11/17 20:39	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/10/17 18:35	10/12/17 20:57	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 20:57	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/12/17 20:57	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/12/17 20:57	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/12/17 20:57	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/12/17 20:57	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/12/17 20:57	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/12/17 20:57	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/10/17 18:35	10/12/17 20:57	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/12/17 20:57	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/12/17 20:57	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/12/17 20:57	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/10/17 18:35	10/12/17 20:57	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 20:57	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/12/17 20:57	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 20:57	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/10/17 18:35	10/12/17 20:57	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 20:57	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/10/17 18:35	10/12/17 20:57	1
Isophorone	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/12/17 20:57	1
Bis(2-chloroethoxy)methane	0.69	U *	10	0.69	ug/L		10/10/17 18:35	10/12/17 20:57	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/10/17 18:35	10/12/17 20:57	1
Naphthalene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/12/17 20:57	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/12/17 20:57	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 20:57	1

Client Sample ID: RBGW_100417

Lab Sample ID: 460-142512-4

Date Collected: 10/04/17 13:15
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/12/17 20:57	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/12/17 20:57	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/12/17 20:57	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:57	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/12/17 20:57	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:57	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/10/17 18:35	10/12/17 20:57	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 20:57	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/12/17 20:57	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 20:57	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/17 18:35	10/12/17 20:57	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:57	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/10/17 18:35	10/12/17 20:57	1
Fluorene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/12/17 20:57	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/10/17 18:35	10/12/17 20:57	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 20:57	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:57	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 20:57	1
Anthracene	0.57	U	10	0.57	ug/L		10/10/17 18:35	10/12/17 20:57	1
Carbazole	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 20:57	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 20:57	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/12/17 20:57	1
Pyrene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 20:57	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/12/17 20:57	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:57	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/10/17 18:35	10/12/17 20:57	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/10/17 18:35	10/12/17 20:57	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/12/17 20:57	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/12/17 20:57	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/12/17 20:57	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 20:57	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/12/17 20:57	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/12/17 20:57	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 20:57	1
Caprolactam	1.3	J	10	1.1	ug/L		10/10/17 18:35	10/12/17 20:57	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/12/17 20:57	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 20:57	1
N-Methylaniline	0.87	U *	5.0	0.87	ug/L		10/10/17 18:35	10/12/17 20:57	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1-Dodecene	*8.9*	*J N*	*ug/L*		*5.85*	*112-41-4*	*10/10/17 18:35*	*10/12/17 20:57*	*1*
Unknown	*52*	*J*	*ug/L*		*7.61*		*10/10/17 18:35*	*10/12/17 20:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*114*	*X*	*51 - 108*	*10/10/17 18:35*	*10/12/17 20:57*	*1*
Phenol-d5	*29*		*14 - 39*	*10/10/17 18:35*	*10/12/17 20:57*	*1*
Terphenyl-d14	*100*		*40 - 148*	*10/10/17 18:35*	*10/12/17 20:57*	*1*
2,4,6-Tribromophenol	*86*		*26 - 139*	*10/10/17 18:35*	*10/12/17 20:57*	*1*
2-Fluorophenol	*42*		*25 - 58*	*10/10/17 18:35*	*10/12/17 20:57*	*1*
2-Fluorobiphenyl	*102*		*45 - 107*	*10/10/17 18:35*	*10/12/17 20:57*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	92.1	U	150	92.1	ug/L		10/09/17 11:26	10/10/17 22:06	1
Manganese, Dissolved	3.1	U	15.0	3.1	ug/L		10/09/17 11:26	10/10/17 22:06	1

Client Sample ID: UPA-02D

Lab Sample ID: 460-142512-5

Date Collected: 10/04/17 15:15
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	37		0.40	0.20	ug/L			10/13/17 06:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*72 - 133*		*10/13/17 06:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*119*		*71 - 144*		*10/13/17 06:04*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 23:07	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 23:07	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 23:07	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 23:07	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 23:07	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 23:07	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 23:07	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 23:07	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 23:07	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 23:07	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 23:07	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 23:07	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 23:07	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 23:07	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 23:07	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 23:07	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 23:07	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 23:07	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 23:07	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 23:07	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 23:07	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 23:07	1
Benzene	0.24	J	1.0	0.090	ug/L			10/13/17 23:07	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 23:07	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 23:07	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 23:07	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 23:07	1
Tetrachloroethene	0.32	J	1.0	0.12	ug/L			10/13/17 23:07	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 23:07	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 23:07	1
Chlorobenzene	5.4		1.0	0.24	ug/L			10/13/17 23:07	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 23:07	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 23:07	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 23:07	1
Ethyl ether	3.9		1.0	0.11	ug/L			10/13/17 23:07	1
MTBE	2.6		1.0	0.13	ug/L			10/13/17 23:07	1
Tetrahydrofuran	3.3		2.0	0.36	ug/L			10/13/17 23:07	1

Client Sample ID: UPA-02D

Lab Sample ID: 460-142512-5

Date Collected: 10/04/17 15:15
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 23:07	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 23:07	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 23:07	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 23:07	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 23:07	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 23:07	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 23:07	1
Dichlorofluoromethane	0.28	J	1.0	0.21	ug/L			10/13/17 23:07	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 23:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 23:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/13/17 23:07*	*1*
Bromofluorobenzene	*104*		*77 - 124*		*10/13/17 23:07*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/13/17 23:07*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/13/17 23:07*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/10/17 18:35	10/11/17 21:02	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/10/17 18:35	10/11/17 21:02	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/10/17 18:35	10/11/17 21:02	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/10/17 18:35	10/11/17 21:02	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/10/17 18:35	10/11/17 21:02	1
Bis(2-chloroethyl)ether	5.1		0.020	0.016	ug/L		10/10/17 18:35	10/11/17 21:02	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/10/17 18:35	10/12/17 21:19	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 21:19	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/12/17 21:19	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/12/17 21:19	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/12/17 21:19	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/12/17 21:19	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/12/17 21:19	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/12/17 21:19	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/10/17 18:35	10/12/17 21:19	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/12/17 21:19	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/12/17 21:19	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/12/17 21:19	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/10/17 18:35	10/12/17 21:19	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 21:19	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/12/17 21:19	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 21:19	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/10/17 18:35	10/12/17 21:19	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 21:19	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/10/17 18:35	10/12/17 21:19	1
Isophorone	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/12/17 21:19	1

Client Sample ID: UPA-02D

Lab Sample ID: 460-142512-5

Date Collected: 10/04/17 15:15
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	0.69	U *	10	0.69	ug/L		10/10/17 18:35	10/12/17 21:19	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/10/17 18:35	10/12/17 21:19	1
Naphthalene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/12/17 21:19	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/12/17 21:19	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 21:19	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/12/17 21:19	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/12/17 21:19	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/12/17 21:19	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 21:19	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/12/17 21:19	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 21:19	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/10/17 18:35	10/12/17 21:19	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 21:19	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/12/17 21:19	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 21:19	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/17 18:35	10/12/17 21:19	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:19	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/10/17 18:35	10/12/17 21:19	1
Fluorene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/12/17 21:19	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/10/17 18:35	10/12/17 21:19	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 21:19	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:19	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/12/17 21:19	1
Anthracene	0.57	U	10	0.57	ug/L		10/10/17 18:35	10/12/17 21:19	1
Carbazole	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 21:19	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 21:19	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/12/17 21:19	1
Pyrene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/12/17 21:19	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/12/17 21:19	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:19	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/10/17 18:35	10/12/17 21:19	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/10/17 18:35	10/12/17 21:19	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/12/17 21:19	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/12/17 21:19	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/12/17 21:19	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/12/17 21:19	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/12/17 21:19	1
Diphenyl ether	**2.7**	**J** J+	10	0.50	ug/L		10/10/17 18:35	10/12/17 21:19	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/12/17 21:19	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 21:19	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/12/17 21:19	1
Bisphenol-A	**9.8**	**J** J+	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:19	1
N-Methylaniline	0.87	~~U *~~ UJ	5.0	0.87	ug/L		10/10/17 18:35	10/12/17 21:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*9.1*	*J*	*ug/L*		*7.39*		*10/10/17 18:35*	*10/12/17 21:19*	*1*
Unknown	*26*	*J*	*ug/L*		*10.35*		*10/10/17 18:35*	*10/12/17 21:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*118*	*X*	*51 - 108*	*10/10/17 18:35*	*10/12/17 21:19*	*1*

Client Sample ID: UPA-02D

Lab Sample ID: 460-142512-5

Date Collected: 10/04/17 15:15
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*40*	*X*	*14 - 39*	*10/10/17 18:35*	*10/12/17 21:19*	*1*
Terphenyl-d14	*88*		*40 - 148*	*10/10/17 18:35*	*10/12/17 21:19*	*1*
2,4,6-Tribromophenol	*116*		*26 - 139*	*10/10/17 18:35*	*10/12/17 21:19*	*1*
2-Fluorophenol	*57*		*25 - 58*	*10/10/17 18:35*	*10/12/17 21:19*	*1*
2-Fluorobiphenyl	*105*		*45 - 107*	*10/10/17 18:35*	*10/12/17 21:19*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	4240		150	92.1	ug/L		10/12/17 08:04	10/12/17 17:18	1
Manganese, Dissolved	1160		15.0	3.1	ug/L		10/12/17 08:04	10/12/17 17:18	1

Client Sample ID: UPA-02S

Lab Sample ID: 460-142512-6

Date Collected: 10/04/17 15:16
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.40 ~~0.25~~	~~J~~ U	0.40	0.20	ug/L			10/11/17 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*72 - 133*		*10/11/17 17:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*118*		*71 - 144*		*10/11/17 17:15*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 16:52	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 16:52	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 16:52	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 16:52	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 16:52	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 16:52	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 16:52	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 16:52	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 16:52	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 16:52	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 16:52	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 16:52	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 16:52	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 16:52	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 16:52	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 16:52	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 16:52	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 16:52	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 16:52	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 16:52	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 16:52	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 16:52	1
Benzene	0.090	U	1.0	0.090	ug/L			10/13/17 16:52	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 16:52	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 16:52	1

Client Sample ID: UPA-02S

Lab Sample ID: 460-142512-6

Date Collected: 10/04/17 15:16
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 16:52	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 16:52	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 16:52	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 16:52	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 16:52	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/13/17 16:52	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 16:52	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 16:52	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 16:52	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/13/17 16:52	1
MTBE	0.13	U	1.0	0.13	ug/L			10/13/17 16:52	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/13/17 16:52	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 16:52	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 16:52	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 16:52	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 16:52	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 16:52	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 16:52	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 16:52	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/13/17 16:52	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 16:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 16:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/13/17 16:52*	*1*
Bromofluorobenzene	*106*		*77 - 124*		*10/13/17 16:52*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/13/17 16:52*	*1*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/13/17 16:52*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.051	0.018	ug/L		10/10/17 18:35	10/11/17 21:25	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		10/10/17 18:35	10/11/17 21:25	1
Benzo[b]fluoranthene	0.019	U	0.051	0.019	ug/L		10/10/17 18:35	10/11/17 21:25	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/10/17 18:35	10/11/17 21:25	1
Pentachlorophenol	0.032	U	0.20	0.032	ug/L		10/10/17 18:35	10/11/17 21:25	1
Bis(2-chloroethyl)ether	0.016	U	0.020	0.016	ug/L		10/10/17 18:35	10/11/17 21:25	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/10/17 18:35	10/12/17 21:43	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/12/17 21:43	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/12/17 21:43	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/12/17 21:43	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/12/17 21:43	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/12/17 21:43	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/12/17 21:43	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/12/17 21:43	1

Client Sample ID: UPA-02S

Lab Sample ID: 460-142512-6

Date Collected: 10/04/17 15:16
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/10/17 18:35	10/12/17 21:43	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/12/17 21:43	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/12/17 21:43	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/12/17 21:43	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/10/17 18:35	10/12/17 21:43	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 21:43	1
1,4-Dichlorobenzene	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/12/17 21:43	1
1,2-Dichlorobenzene	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 21:43	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/10/17 18:35	10/12/17 21:43	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/12/17 21:43	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/10/17 18:35	10/12/17 21:43	1
Isophorone	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/12/17 21:43	1
Bis(2-chloroethoxy)methane	0.70	U *	10	0.70	ug/L		10/10/17 18:35	10/12/17 21:43	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/10/17 18:35	10/12/17 21:43	1
Naphthalene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 21:43	1
4-Chloroaniline	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/12/17 21:43	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/12/17 21:43	1
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/12/17 21:43	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/12/17 21:43	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/12/17 21:43	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/12/17 21:43	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:43	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/12/17 21:43	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/10/17 18:35	10/12/17 21:43	1
3-Nitroaniline	0.84	U	10	0.84	ug/L		10/10/17 18:35	10/12/17 21:43	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/12/17 21:43	1
Dibenzofuran	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/12/17 21:43	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/10/17 18:35	10/12/17 21:43	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:43	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/12/17 21:43	1
Fluorene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/12/17 21:43	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/12/17 21:43	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/12/17 21:43	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:43	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/12/17 21:43	1
Anthracene	0.58	U	10	0.58	ug/L		10/10/17 18:35	10/12/17 21:43	1
Carbazole	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/12/17 21:43	1
Di-n-butyl phthalate	0.88	J	10	0.84	ug/L		10/10/17 18:35	10/12/17 21:43	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/12/17 21:43	1
Pyrene	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/12/17 21:43	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/12/17 21:43	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 21:43	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/10/17 18:35	10/12/17 21:43	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/10/17 18:35	10/12/17 21:43	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/12/17 21:43	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/12/17 21:43	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/12/17 21:43	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/12/17 21:43	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/12/17 21:43	1

Client Sample ID: UPA-02S

Lab Sample ID: 460-142512-6

Date Collected: 10/04/17 15:16
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diphenyl ether	0.51	U	10	0.51	ug/L		10/10/17 18:35	10/12/17 21:43	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/12/17 21:43	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/12/17 21:43	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/12/17 21:43	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/12/17 21:43	1
N-Methylaniline	0.89	~~U *~~ UJ	5.1	0.89	ug/L		10/10/17 18:35	10/12/17 21:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/10/17 18:35*	*10/12/17 21:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*105*		*51 - 108*	*10/10/17 18:35*	*10/12/17 21:43*	*1*
Phenol-d5	*38*		*14 - 39*	*10/10/17 18:35*	*10/12/17 21:43*	*1*
Terphenyl-d14	*87*		*40 - 148*	*10/10/17 18:35*	*10/12/17 21:43*	*1*
2,4,6-Tribromophenol	*107*		*26 - 139*	*10/10/17 18:35*	*10/12/17 21:43*	*1*
2-Fluorophenol	*56*		*25 - 58*	*10/10/17 18:35*	*10/12/17 21:43*	*1*
2-Fluorobiphenyl	*89*		*45 - 107*	*10/10/17 18:35*	*10/12/17 21:43*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**361**		150	92.1	ug/L		10/12/17 08:04	10/12/17 17:22	1
Manganese, Dissolved	**50.9**		15.0	3.1	ug/L		10/12/17 08:04	10/12/17 17:22	1

Client Sample ID: UPA-01

Lab Sample ID: 460-142512-7

Date Collected: 10/04/17 16:05
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 17:19	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 17:19	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 17:19	1
Chloroethane	**0.42**	J	1.0	0.37	ug/L			10/13/17 17:19	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 17:19	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 17:19	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 17:19	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 17:19	1
1,1-Dichloroethane	**1.8**		1.0	0.24	ug/L			10/13/17 17:19	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 17:19	1
cis-1,2-Dichloroethene	**0.74**	J	1.0	0.26	ug/L			10/13/17 17:19	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 17:19	1
1,2-Dichloroethane	**0.58**	J	1.0	0.25	ug/L			10/13/17 17:19	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 17:19	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 17:19	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 17:19	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 17:19	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 17:19	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 17:19	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 17:19	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 17:19	1

Client Sample ID: UPA-01

Lab Sample ID: 460-142512-7

Date Collected: 10/04/17 16:05
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 17:19	1
Benzene	180		1.0	0.090	ug/L			10/13/17 17:19	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 17:19	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 17:19	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 17:19	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 17:19	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/13/17 17:19	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 17:19	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 17:19	1
Chlorobenzene	6.0		1.0	0.24	ug/L			10/13/17 17:19	1
Ethylbenzene	22		1.0	0.30	ug/L			10/13/17 17:19	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 17:19	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 17:19	1
Ethyl ether	3.1		1.0	0.11	ug/L			10/13/17 17:19	1
MTBE	0.28	J	1.0	0.13	ug/L			10/13/17 17:19	1
Tetrahydrofuran	4.1		2.0	0.36	ug/L			10/13/17 17:19	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 17:19	1
1,4-Dioxane	230		50	8.7	ug/L			10/13/17 17:19	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 17:19	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 17:19	1
Isopropylbenzene	14		1.0	0.32	ug/L			10/13/17 17:19	1
N-Propylbenzene	19		1.0	0.29	ug/L			10/13/17 17:19	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 17:19	1
Indane	17		1.0	0.12	ug/L			10/13/17 17:19	1
Dichlorofluoromethane	18		1.0	0.21	ug/L			10/13/17 17:19	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 17:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*7.6*	*J*	*ug/L*		*12.46*			*10/13/17 17:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/13/17 17:19*	*1*
Bromofluorobenzene	*107*		*77 - 124*		*10/13/17 17:19*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/13/17 17:19*	*1*
Dibromofluoromethane (Surr)	*106*		*72 - 131*		*10/13/17 17:19*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.051	0.018	ug/L		10/10/17 18:35	10/11/17 21:49	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		10/10/17 18:35	10/11/17 21:49	1
Benzo[b]fluoranthene	0.019	U	0.051	0.019	ug/L		10/10/17 18:35	10/11/17 21:49	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/10/17 18:35	10/11/17 21:49	1
Pentachlorophenol	0.032	U	0.20	0.032	ug/L		10/10/17 18:35	10/11/17 21:49	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	1.8	J	10	0.42	ug/L		10/10/17 18:35	10/13/17 12:59	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 12:59	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 12:59	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 12:59	1

Client Sample ID: UPA-01

Lab Sample ID: 460-142512-7

Date Collected: 10/04/17 16:05
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/13/17 12:59	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/13/17 12:59	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 12:59	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 12:59	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/10/17 18:35	10/13/17 12:59	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 12:59	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/13/17 12:59	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/13/17 12:59	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/10/17 18:35	10/13/17 12:59	1
Bis(2-chloroethyl)ether	**66**		1.0	0.12	ug/L		10/10/17 18:35	10/13/17 12:59	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 12:59	1
1,4-Dichlorobenzene	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/13/17 12:59	1
1,2-Dichlorobenzene	**1.2**	**J**	10	0.85	ug/L		10/10/17 18:35	10/13/17 12:59	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/10/17 18:35	10/13/17 12:59	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/13/17 12:59	1
Nitrobenzene	**2.5**		1.0	0.50	ug/L		10/10/17 18:35	10/13/17 12:59	1
Isophorone	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 12:59	1
Bis(2-chloroethoxy)methane	0.70	U ±	10	0.70	ug/L		10/10/17 18:35	10/13/17 12:59	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/10/17 18:35	10/13/17 12:59	1
Naphthalene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 12:59	1
4-Chloroaniline	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/13/17 12:59	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/13/17 12:59	1
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/13/17 12:59	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/13/17 12:59	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/13/17 12:59	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 12:59	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 12:59	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 12:59	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/10/17 18:35	10/13/17 12:59	1
3-Nitroaniline	0.84	U	10	0.84	ug/L		10/10/17 18:35	10/13/17 12:59	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/13/17 12:59	1
Dibenzofuran	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/13/17 12:59	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/10/17 18:35	10/13/17 12:59	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 12:59	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/13/17 12:59	1
Fluorene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 12:59	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/13/17 12:59	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 12:59	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 12:59	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 12:59	1
Anthracene	0.58	U	10	0.58	ug/L		10/10/17 18:35	10/13/17 12:59	1
Carbazole	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/13/17 12:59	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/17 18:35	10/13/17 12:59	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/13/17 12:59	1
Pyrene	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 12:59	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 12:59	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 12:59	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/10/17 18:35	10/13/17 12:59	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/10/17 18:35	10/13/17 12:59	1

Client Sample ID: UPA-01

Lab Sample ID: 460-142512-7

Date Collected: 10/04/17 16:05
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 12:59	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/13/17 12:59	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/13/17 12:59	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/13/17 12:59	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 12:59	1
Diphenyl ether	**2.5**	**J**	10	0.51	ug/L		10/10/17 18:35	10/13/17 12:59	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/13/17 12:59	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 12:59	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 12:59	1
Bisphenol-A	**31**		10	1.0	ug/L		10/10/17 18:35	10/13/17 12:59	1
N-Methylaniline	**3.1**	**J ~~J-~~**	5.1	0.89	ug/L		10/10/17 18:35	10/13/17 12:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Ethylbenzene	*17*	*J N*	*ug/L*		*3.27*	*100-41-4*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*32*	*J*	*ug/L*		*3.35*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Benzene, (1-methylethyl)-	*12*	*J N*	*ug/L*		*3.84*	*98-82-8*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
Benzene, propyl-	*16*	*J N*	*ug/L*		*4.10*	*103-65-1*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
Indane	*15*	*J N*	*ug/L*		*4.79*	*496-11-7*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
2-Isopropoxyphenol	*66*	*J N*	*ug/L*		*5.74*	*4812-20-8*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
2-Propanone, 1-phenoxy-	*19*	*J N*	*ug/L*		*6.02*	*621-87-4*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
1,4-Benzenediol, diacetate	*25*	*J N*	*ug/L*		*6.33*	*1205-91-0*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*26*	*J*	*ug/L*		*6.50*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*42*	*J*	*ug/L*		*6.74*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	*34*	*J N*	*ug/L*		*6.94*	*827-16-7*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*140*	*J*	*ug/L*		*7.40*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*23*	*J*	*ug/L*		*7.70*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*9.8*	*J*	*ug/L*		*8.11*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*35*	*J*	*ug/L*		*8.23*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*9.6*	*J*	*ug/L*		*9.40*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*11*	*J*	*ug/L*		*9.43*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*14*	*J*	*ug/L*		*11.11*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*10*	*J*	*ug/L*		*11.97*		*10/10/17 18:35*	*10/13/17 12:59*	*1*
Unknown	*30*	*J*	*ug/L*		*12.20*		*10/10/17 18:35*	*10/13/17 12:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*107*		*51 - 108*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
Phenol-d5	*36*		*14 - 39*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
Terphenyl-d14	*76*		*40 - 148*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
2,4,6-Tribromophenol	*89*		*26 - 139*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
2-Fluorophenol	*52*		*25 - 58*	*10/10/17 18:35*	*10/13/17 12:59*	*1*
2-Fluorobiphenyl	*92*		*45 - 107*	*10/10/17 18:35*	*10/13/17 12:59*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**30000**		150	92.1	ug/L		10/12/17 08:04	10/12/17 17:26	1
Manganese, Dissolved	**4010**		15.0	3.1	ug/L		10/12/17 08:04	10/12/17 17:26	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142184-1

Client Sample ID: FDGW_100417

Lab Sample ID: 460-142512-8

Date Collected: 10/04/17 00:00
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	32		0.40	0.20	ug/L			10/11/17 17:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*72 - 133*		*10/11/17 17:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*129*		*71 - 144*		*10/11/17 17:38*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 23:34	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/13/17 23:34	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/13/17 23:34	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/13/17 23:34	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/13/17 23:34	1
Acetone	1.1	U	5.0	1.1	ug/L			10/13/17 23:34	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/13/17 23:34	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/13/17 23:34	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/13/17 23:34	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/13/17 23:34	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/13/17 23:34	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/13/17 23:34	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/13/17 23:34	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/13/17 23:34	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/13/17 23:34	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/13/17 23:34	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/13/17 23:34	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/13/17 23:34	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/13/17 23:34	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/13/17 23:34	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/13/17 23:34	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/13/17 23:34	1
Benzene	**0.19**	**J**	1.0	0.090	ug/L			10/13/17 23:34	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/13/17 23:34	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/13/17 23:34	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/13/17 23:34	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/13/17 23:34	1
Tetrachloroethene	**0.32**	**J**	1.0	0.12	ug/L			10/13/17 23:34	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/13/17 23:34	1
Toluene	0.25	U	1.0	0.25	ug/L			10/13/17 23:34	1
Chlorobenzene	**5.4**		1.0	0.24	ug/L			10/13/17 23:34	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/13/17 23:34	1
Styrene	0.17	U	1.0	0.17	ug/L			10/13/17 23:34	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/13/17 23:34	1
Ethyl ether	**3.7**		1.0	0.11	ug/L			10/13/17 23:34	1
MTBE	**2.6**		1.0	0.13	ug/L			10/13/17 23:34	1
Tetrahydrofuran	**2.9**		2.0	0.36	ug/L			10/13/17 23:34	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/13/17 23:34	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/13/17 23:34	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/13/17 23:34	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/13/17 23:34	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/13/17 23:34	1

Client Sample ID: FDGW_100417

Lab Sample ID: 460-142512-8

Date Collected: 10/04/17 00:00
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/13/17 23:34	1
Indane	0.12	U	1.0	0.12	ug/L			10/13/17 23:34	1
Dichlorofluoromethane	0.27	J	1.0	0.21	ug/L			10/13/17 23:34	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/13/17 23:34	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/13/17 23:34*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/13/17 23:34*	*1*
Bromofluorobenzene	*104*		*77 - 124*		*10/13/17 23:34*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*10/13/17 23:34*	*1*
Dibromofluoromethane (Surr)	*111*		*72 - 131*		*10/13/17 23:34*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/10/17 18:35	10/11/17 22:12	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/10/17 18:35	10/11/17 22:12	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/10/17 18:35	10/11/17 22:12	1
Hexachlorobenzene	0.011	J	0.020	0.0090	ug/L		10/10/17 18:35	10/11/17 22:12	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/10/17 18:35	10/11/17 22:12	1
Bis(2-chloroethyl)ether	4.6		0.020	0.016	ug/L		10/10/17 18:35	10/11/17 22:12	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/10/17 18:35	10/13/17 13:21	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/13/17 13:21	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 13:21	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/13/17 13:21	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/13/17 13:21	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/13/17 13:21	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/13/17 13:21	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 13:21	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/10/17 18:35	10/13/17 13:21	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/13/17 13:21	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/13/17 13:21	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/13/17 13:21	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/10/17 18:35	10/13/17 13:21	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 13:21	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 13:21	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 13:21	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/10/17 18:35	10/13/17 13:21	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/13/17 13:21	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/10/17 18:35	10/13/17 13:21	1
Isophorone	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/13/17 13:21	1
Bis(2-chloroethoxy)methane	0.69	U ±	10	0.69	ug/L		10/10/17 18:35	10/13/17 13:21	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/10/17 18:35	10/13/17 13:21	1
Naphthalene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/13/17 13:21	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/13/17 13:21	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/13/17 13:21	1

Client Sample ID: FDGW_100417

Lab Sample ID: 460-142512-8

Date Collected: 10/04/17 00:00
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/13/17 13:21	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 13:21	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 13:21	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/13/17 13:21	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/13/17 13:21	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/13/17 13:21	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/10/17 18:35	10/13/17 13:21	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 13:21	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/10/17 18:35	10/13/17 13:21	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 13:21	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/17 18:35	10/13/17 13:21	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 13:21	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/10/17 18:35	10/13/17 13:21	1
Fluorene	0.80	U	10	0.80	ug/L		10/10/17 18:35	10/13/17 13:21	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/10/17 18:35	10/13/17 13:21	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/13/17 13:21	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 13:21	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/10/17 18:35	10/13/17 13:21	1
Anthracene	0.57	U	10	0.57	ug/L		10/10/17 18:35	10/13/17 13:21	1
Carbazole	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 13:21	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 13:21	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/13/17 13:21	1
Pyrene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 13:21	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/13/17 13:21	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 13:21	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/10/17 18:35	10/13/17 13:21	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/10/17 18:35	10/13/17 13:21	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/13/17 13:21	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/13/17 13:21	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/13/17 13:21	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/10/17 18:35	10/13/17 13:21	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/13/17 13:21	1
Diphenyl ether	**1.8**	**J**	10	0.50	ug/L		10/10/17 18:35	10/13/17 13:21	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/10/17 18:35	10/13/17 13:21	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 13:21	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/13/17 13:21	1
Bisphenol-A	**9.3**	**J**	10	1.0	ug/L		10/10/17 18:35	10/13/17 13:21	1
N-Methylaniline	0.87	~~U~~ UJ	5.0	0.87	ug/L		10/10/17 18:35	10/13/17 13:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*8.2*	*J*	*ug/L*		*7.38*		*10/10/17 18:35*	*10/13/17 13:21*	*1*
Anthracene-D10-	*56*	*J N*	*ug/L*		*9.09*	*1719-06-8*	*10/10/17 18:35*	*10/13/17 13:21*	*1*
Unknown	*28*	*J*	*ug/L*		*10.36*		*10/10/17 18:35*	*10/13/17 13:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*106*		*51 - 108*	*10/10/17 18:35*	*10/13/17 13:21*	*1*
Phenol-d5	*36*		*14 - 39*	*10/10/17 18:35*	*10/13/17 13:21*	*1*
Terphenyl-d14	*83*		*40 - 148*	*10/10/17 18:35*	*10/13/17 13:21*	*1*
2,4,6-Tribromophenol	*96*		*26 - 139*	*10/10/17 18:35*	*10/13/17 13:21*	*1*
2-Fluorophenol	*52*		*25 - 58*	*10/10/17 18:35*	*10/13/17 13:21*	*1*

Client Sample ID: FDGW_100417

Lab Sample ID: 460-142512-8

Date Collected: 10/04/17 00:00
Date Received: 10/04/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*91*		*45 - 107*	*10/10/17 18:35*	*10/13/17 13:21*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	4040		150	92.1	ug/L		10/12/17 08:04	10/12/17 17:41	1
Manganese, Dissolved	1110		15.0	3.1	ug/L		10/12/17 08:04	10/12/17 17:41	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: TBGW_100517

Lab Sample ID: 460-142534-1

Date Collected: 10/05/17 00:00
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/11/17 14:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*72 - 133*		*10/11/17 14:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*118*		*71 - 144*		*10/11/17 14:53*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 13:35	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/15/17 13:35	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/15/17 13:35	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/15/17 13:35	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/15/17 13:35	1
Acetone	6.4		5.0	1.1	ug/L			10/15/17 13:35	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/15/17 13:35	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/15/17 13:35	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/15/17 13:35	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/15/17 13:35	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/15/17 13:35	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/15/17 13:35	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/15/17 13:35	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/15/17 13:35	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/15/17 13:35	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/15/17 13:35	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/15/17 13:35	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/15/17 13:35	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/15/17 13:35	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/15/17 13:35	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 13:35	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/15/17 13:35	1
Benzene	0.090	U	1.0	0.090	ug/L			10/15/17 13:35	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/15/17 13:35	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/15/17 13:35	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/15/17 13:35	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/15/17 13:35	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/15/17 13:35	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/15/17 13:35	1
Toluene	0.25	U	1.0	0.25	ug/L			10/15/17 13:35	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/15/17 13:35	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/15/17 13:35	1
Styrene	0.17	U	1.0	0.17	ug/L			10/15/17 13:35	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/15/17 13:35	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/15/17 13:35	1
MTBE	0.13	U	1.0	0.13	ug/L			10/15/17 13:35	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/15/17 13:35	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/15/17 13:35	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/15/17 13:35	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/15/17 13:35	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/15/17 13:35	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/15/17 13:35	1

Client Sample ID: TBGW_100517

Lab Sample ID: 460-142534-1

Date Collected: 10/05/17 00:00
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/15/17 13:35	1
Indane	0.12	U	1.0	0.12	ug/L			10/15/17 13:35	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/15/17 13:35	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/15/17 13:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/17 13:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/15/17 13:35*	*1*
Bromofluorobenzene	*107*		*77 - 124*		*10/15/17 13:35*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/15/17 13:35*	*1*
Dibromofluoromethane (Surr)	*114*		*72 - 131*		*10/15/17 13:35*	*1*

Client Sample ID: MW-26N

Lab Sample ID: 460-142534-2

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 14:02	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/15/17 14:02	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/15/17 14:02	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/15/17 14:02	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/15/17 14:02	1
Acetone	1.1	U	5.0	1.1	ug/L			10/15/17 14:02	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/15/17 14:02	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/15/17 14:02	1
1,1-Dichloroethane	**0.29**	**J**	1.0	0.24	ug/L			10/15/17 14:02	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/15/17 14:02	1
cis-1,2-Dichloroethene	**0.39**	**J**	1.0	0.26	ug/L			10/15/17 14:02	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/15/17 14:02	1
1,2-Dichloroethane	**0.91**	**J**	1.0	0.25	ug/L			10/15/17 14:02	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/15/17 14:02	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/15/17 14:02	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/15/17 14:02	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/15/17 14:02	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/15/17 14:02	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/15/17 14:02	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/15/17 14:02	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 14:02	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/15/17 14:02	1
Benzene	**0.34**	**J**	1.0	0.090	ug/L			10/15/17 14:02	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/15/17 14:02	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/15/17 14:02	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/15/17 14:02	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/15/17 14:02	1
Tetrachloroethene	**0.87**	**J**	1.0	0.12	ug/L			10/15/17 14:02	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/15/17 14:02	1
Toluene	0.25	U	1.0	0.25	ug/L			10/15/17 14:02	1

Client Sample ID: MW-26N

Lab Sample ID: 460-142534-2

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	8.0		1.0	0.24	ug/L			10/15/17 14:02	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/15/17 14:02	1
Styrene	0.17	U	1.0	0.17	ug/L			10/15/17 14:02	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/15/17 14:02	1
Ethyl ether	1.3		1.0	0.11	ug/L			10/15/17 14:02	1
MTBE	2.1		1.0	0.13	ug/L			10/15/17 14:02	1
Tetrahydrofuran	6.8	± J+	2.0	0.36	ug/L			10/15/17 14:02	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/15/17 14:02	1
1,4-Dioxane	52		50	8.7	ug/L			10/15/17 14:02	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/15/17 14:02	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/15/17 14:02	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/15/17 14:02	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/15/17 14:02	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/15/17 14:02	1
Indane	0.12	U	1.0	0.12	ug/L			10/15/17 14:02	1
Dichlorofluoromethane	1.7		1.0	0.21	ug/L			10/15/17 14:02	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/15/17 14:02	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/17 14:02*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/15/17 14:02*	*1*
Bromofluorobenzene	*106*		*77 - 124*		*10/15/17 14:02*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/15/17 14:02*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/15/17 14:02*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.051	0.018	ug/L		10/10/17 18:35	10/11/17 22:35	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		10/10/17 18:35	10/11/17 22:35	1
Benzo[b]fluoranthene	0.019	U	0.051	0.019	ug/L		10/10/17 18:35	10/11/17 22:35	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/10/17 18:35	10/11/17 22:35	1
Pentachlorophenol	0.032	U	0.20	0.032	ug/L		10/10/17 18:35	10/11/17 22:35	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/10/17 18:35	10/13/17 15:59	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 15:59	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 15:59	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 15:59	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/13/17 15:59	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/13/17 15:59	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 15:59	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 15:59	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/10/17 18:35	10/13/17 15:59	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 15:59	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/13/17 15:59	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/13/17 15:59	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/10/17 18:35	10/13/17 15:59	1

Client Sample ID: MW-26N

Lab Sample ID: 460-142534-2

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethyl)ether	13	J+	1.0	0.12	ug/L		10/10/17 18:35	10/13/17 15:59	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 15:59	1
1,4-Dichlorobenzene	0.67	U	10	0.67	ug/L		10/10/17 18:35	10/13/17 15:59	1
1,2-Dichlorobenzene	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 15:59	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/10/17 18:35	10/13/17 15:59	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/13/17 15:59	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/10/17 18:35	10/13/17 15:59	1
Isophorone	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 15:59	1
Bis(2-chloroethoxy)methane	0.70	U ±	10	0.70	ug/L		10/10/17 18:35	10/13/17 15:59	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/10/17 18:35	10/13/17 15:59	1
Naphthalene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 15:59	1
4-Chloroaniline	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/13/17 15:59	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/13/17 15:59	1
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/13/17 15:59	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/13/17 15:59	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/13/17 15:59	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 15:59	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 15:59	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 15:59	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/10/17 18:35	10/13/17 15:59	1
3-Nitroaniline	0.84	U	10	0.84	ug/L		10/10/17 18:35	10/13/17 15:59	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/13/17 15:59	1
Dibenzofuran	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/13/17 15:59	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/10/17 18:35	10/13/17 15:59	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 15:59	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/13/17 15:59	1
Fluorene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 15:59	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/13/17 15:59	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 15:59	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 15:59	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 15:59	1
Anthracene	0.58	U	10	0.58	ug/L		10/10/17 18:35	10/13/17 15:59	1
Carbazole	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/13/17 15:59	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/17 18:35	10/13/17 15:59	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/13/17 15:59	1
Pyrene	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 15:59	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 15:59	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 15:59	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/10/17 18:35	10/13/17 15:59	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/10/17 18:35	10/13/17 15:59	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 15:59	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/13/17 15:59	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/13/17 15:59	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/13/17 15:59	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 15:59	1
Diphenyl ether	1.1	J J+	10	0.51	ug/L		10/10/17 18:35	10/13/17 15:59	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/13/17 15:59	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 15:59	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 15:59	1

Client Sample ID: MW-26N — Lab Sample ID: 460-142534-2

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	8.4	J	10	1.0	ug/L		10/10/17 18:35	10/13/17 15:59	1
N-Methylaniline	0.89	~~U ±~~ UJ	5.1	0.89	ug/L		10/10/17 18:35	10/13/17 15:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*22*	*J*	*ug/L*		*7.38*		*10/10/17 18:35*	*10/13/17 15:59*	*1*
Unknown	*12*	*J*	*ug/L*		*7.60*		*10/10/17 18:35*	*10/13/17 15:59*	*1*
Unknown	*13*	*J*	*ug/L*		*10.36*		*10/10/17 18:35*	*10/13/17 15:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*109*	*X*	*51 - 108*	*10/10/17 18:35*	*10/13/17 15:59*	*1*
Phenol-d5	*39*		*14 - 39*	*10/10/17 18:35*	*10/13/17 15:59*	*1*
Terphenyl-d14	*85*		*40 - 148*	*10/10/17 18:35*	*10/13/17 15:59*	*1*
2,4,6-Tribromophenol	*86*		*26 - 139*	*10/10/17 18:35*	*10/13/17 15:59*	*1*
2-Fluorophenol	*56*		*25 - 58*	*10/10/17 18:35*	*10/13/17 15:59*	*1*
2-Fluorobiphenyl	*102*		*45 - 107*	*10/10/17 18:35*	*10/13/17 15:59*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	229		150	92.1	ug/L		10/12/17 09:56	10/12/17 18:37	1
Manganese, Dissolved	2000		15.0	3.1	ug/L		10/12/17 09:56	10/12/17 18:37	1

Client Sample ID: PZ-4-INTR — Lab Sample ID: 460-142534-3

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.5		0.40	0.20	ug/L			10/11/17 18:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*72 - 133*		*10/11/17 18:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*119*		*71 - 144*		*10/11/17 18:26*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 14:29	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/15/17 14:29	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/15/17 14:29	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/15/17 14:29	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/15/17 14:29	1
Acetone	1.1	U	5.0	1.1	ug/L			10/15/17 14:29	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/15/17 14:29	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/15/17 14:29	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/15/17 14:29	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/15/17 14:29	1
cis-1,2-Dichloroethene	0.27	J	1.0	0.26	ug/L			10/15/17 14:29	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/15/17 14:29	1
1,2-Dichloroethane	0.25	J	1.0	0.25	ug/L			10/15/17 14:29	1
2-Butanone	2.2	U ±	5.0	2.2	ug/L			10/15/17 14:29	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/15/17 14:29	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/15/17 14:29	1

Client Sample ID: PZ-4-INTR

Lab Sample ID: 460-142534-3

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/15/17 14:29	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/15/17 14:29	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/15/17 14:29	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/15/17 14:29	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 14:29	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/15/17 14:29	1
Benzene	**4.1**		1.0	0.090	ug/L			10/15/17 14:29	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/15/17 14:29	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/15/17 14:29	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/15/17 14:29	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/15/17 14:29	1
Tetrachloroethene	**0.17**	J	1.0	0.12	ug/L			10/15/17 14:29	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/15/17 14:29	1
Toluene	**0.33**	J	1.0	0.25	ug/L			10/15/17 14:29	1
Chlorobenzene	**1.5**		1.0	0.24	ug/L			10/15/17 14:29	1
Ethylbenzene	**1.1**		1.0	0.30	ug/L			10/15/17 14:29	1
Styrene	0.17	U	1.0	0.17	ug/L			10/15/17 14:29	1
Xylenes, Total	**2.4**		2.0	0.28	ug/L			10/15/17 14:29	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/15/17 14:29	1
MTBE	0.13	U	1.0	0.13	ug/L			10/15/17 14:29	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/15/17 14:29	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/15/17 14:29	1
1,2,4-Trimethylbenzene	**0.27**	J	1.0	0.23	ug/L			10/15/17 14:29	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/15/17 14:29	1
Isopropylbenzene	**0.37**	J	1.0	0.32	ug/L			10/15/17 14:29	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/15/17 14:29	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/15/17 14:29	1
Indane	**2.0**		1.0	0.12	ug/L			10/15/17 14:29	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/15/17 14:29	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/15/17 14:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/17 14:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/15/17 14:29*	*1*
Bromofluorobenzene	*104*		*77 - 124*		*10/15/17 14:29*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/15/17 14:29*	*1*
Dibromofluoromethane (Surr)	*111*		*72 - 131*		*10/15/17 14:29*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/10/17 18:35	10/11/17 22:58	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/10/17 18:35	10/11/17 22:58	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/10/17 18:35	10/11/17 22:58	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/10/17 18:35	10/11/17 22:58	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/10/17 18:35	10/11/17 22:58	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/10/17 18:35	10/11/17 22:58	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: PZ-4-INTR

Lab Sample ID: 460-142534-3

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/10/17 18:35	10/13/17 16:21	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 16:21	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 16:21	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/13/17 16:21	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 16:21	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 16:21	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 16:21	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/10/17 18:35	10/13/17 16:21	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/10/17 18:35	10/13/17 16:21	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/10/17 18:35	10/13/17 16:21	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 16:21	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/10/17 18:35	10/13/17 16:21	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 16:21	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/10/17 18:35	10/13/17 16:21	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/13/17 16:21	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 16:21	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/10/17 18:35	10/13/17 16:21	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 16:21	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/10/17 18:35	10/13/17 16:21	1
Isophorone	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 16:21	1
Bis(2-chloroethoxy)methane	0.72	U *	10	0.72	ug/L		10/10/17 18:35	10/13/17 16:21	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/10/17 18:35	10/13/17 16:21	1
Naphthalene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 16:21	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 16:21	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 16:21	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 16:21	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 16:21	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 16:21	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 16:21	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 16:21	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 16:21	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/10/17 18:35	10/13/17 16:21	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 16:21	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 16:21	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 16:21	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 16:21	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 16:21	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 16:21	1
Fluorene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 16:21	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 16:21	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 16:21	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 16:21	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 16:21	1
Anthracene	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/13/17 16:21	1
Carbazole	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 16:21	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 16:21	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/13/17 16:21	1
Pyrene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 16:21	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/13/17 16:21	1

Client Sample ID: PZ-4-INTR

Lab Sample ID: 460-142534-3

Date Collected: 10/05/17 10:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 16:21	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/10/17 18:35	10/13/17 16:21	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/10/17 18:35	10/13/17 16:21	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/13/17 16:21	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/10/17 18:35	10/13/17 16:21	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/10/17 18:35	10/13/17 16:21	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 16:21	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 16:21	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/10/17 18:35	10/13/17 16:21	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 16:21	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 16:21	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/10/17 18:35	10/13/17 16:21	1
Bisphenol-A	11		10	1.1	ug/L		10/10/17 18:35	10/13/17 16:21	1
N-Methylaniline	0.91	~~U *~~ UJ	5.2	0.91	ug/L		10/10/17 18:35	10/13/17 16:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/10/17 18:35*	*10/13/17 16:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*109*	*X*	*51 - 108*	*10/10/17 18:35*	*10/13/17 16:21*	*1*
Phenol-d5	*38*		*14 - 39*	*10/10/17 18:35*	*10/13/17 16:21*	*1*
Terphenyl-d14	*85*		*40 - 148*	*10/10/17 18:35*	*10/13/17 16:21*	*1*
2,4,6-Tribromophenol	*87*		*26 - 139*	*10/10/17 18:35*	*10/13/17 16:21*	*1*
2-Fluorophenol	*56*		*25 - 58*	*10/10/17 18:35*	*10/13/17 16:21*	*1*
2-Fluorobiphenyl	*96*		*45 - 107*	*10/10/17 18:35*	*10/13/17 16:21*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	13900		150	92.1	ug/L		10/12/17 09:56	10/12/17 18:41	1
Manganese, Dissolved	1890		15.0	3.1	ug/L		10/12/17 09:56	10/12/17 18:41	1

Client Sample ID: P-4D

Lab Sample ID: 460-142534-4

Date Collected: 10/05/17 11:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.3		0.40	0.20	ug/L			10/11/17 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*72 - 133*		*10/11/17 18:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*123*		*71 - 144*		*10/11/17 18:02*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 14:55	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/15/17 14:55	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/15/17 14:55	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/15/17 14:55	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/15/17 14:55	1
Acetone	1.1	U	5.0	1.1	ug/L			10/15/17 14:55	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: P-4D

Lab Sample ID: 460-142534-4

Date Collected: 10/05/17 11:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/15/17 14:55	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/15/17 14:55	1
1,1-Dichloroethane	**0.25**	J	1.0	0.24	ug/L			10/15/17 14:55	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/15/17 14:55	1
cis-1,2-Dichloroethene	**0.50**	J	1.0	0.26	ug/L			10/15/17 14:55	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/15/17 14:55	1
1,2-Dichloroethane	**1.3**		1.0	0.25	ug/L			10/15/17 14:55	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/15/17 14:55	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/15/17 14:55	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/15/17 14:55	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/15/17 14:55	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/15/17 14:55	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/15/17 14:55	1
Trichloroethene	**0.54**	J	1.0	0.22	ug/L			10/15/17 14:55	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 14:55	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/15/17 14:55	1
Benzene	**3.6**		1.0	0.090	ug/L			10/15/17 14:55	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/15/17 14:55	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/15/17 14:55	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/15/17 14:55	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/15/17 14:55	1
Tetrachloroethene	**0.25**	J	1.0	0.12	ug/L			10/15/17 14:55	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/15/17 14:55	1
Toluene	**0.47**	J	1.0	0.25	ug/L			10/15/17 14:55	1
Chlorobenzene	**0.84**	J	1.0	0.24	ug/L			10/15/17 14:55	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/15/17 14:55	1
Styrene	0.17	U	1.0	0.17	ug/L			10/15/17 14:55	1
Xylenes, Total	**0.85**	J	2.0	0.28	ug/L			10/15/17 14:55	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/15/17 14:55	1
MTBE	0.13	U	1.0	0.13	ug/L			10/15/17 14:55	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/15/17 14:55	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/15/17 14:55	1
1,2,4-Trimethylbenzene	**0.40**	J	1.0	0.23	ug/L			10/15/17 14:55	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/15/17 14:55	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/15/17 14:55	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/15/17 14:55	1
Methylcyclohexane	**0.24**	J	1.0	0.22	ug/L			10/15/17 14:55	1
Indane	**0.50**	J	1.0	0.12	ug/L			10/15/17 14:55	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/15/17 14:55	1
1,2,3-Trimethylbenzene	**0.27**	J	1.0	0.11	ug/L			10/15/17 14:55	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/17 14:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/15/17 14:55*	*1*
Bromofluorobenzene	*109*		*77 - 124*		*10/15/17 14:55*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/15/17 14:55*	*1*
Dibromofluoromethane (Surr)	*111*		*72 - 131*		*10/15/17 14:55*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: P-4D

Lab Sample ID: 460-142534-4

Date Collected: 10/05/17 11:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/10/17 18:35	10/11/17 23:21	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/10/17 18:35	10/11/17 23:21	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/10/17 18:35	10/11/17 23:21	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/10/17 18:35	10/11/17 23:21	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/10/17 18:35	10/11/17 23:21	1
Bis(2-chloroethyl)ether	0.11		0.021	0.017	ug/L		10/10/17 18:35	10/11/17 23:21	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/10/17 18:35	10/13/17 16:43	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 16:43	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 16:43	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/13/17 16:43	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 16:43	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 16:43	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 16:43	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/10/17 18:35	10/13/17 16:43	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/10/17 18:35	10/13/17 16:43	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/10/17 18:35	10/13/17 16:43	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 16:43	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/10/17 18:35	10/13/17 16:43	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 16:43	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/10/17 18:35	10/13/17 16:43	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/13/17 16:43	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 16:43	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/10/17 18:35	10/13/17 16:43	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 16:43	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/10/17 18:35	10/13/17 16:43	1
Isophorone	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 16:43	1
Bis(2-chloroethoxy)methane	0.72	U *	10	0.72	ug/L		10/10/17 18:35	10/13/17 16:43	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/10/17 18:35	10/13/17 16:43	1
Naphthalene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 16:43	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 16:43	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 16:43	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 16:43	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 16:43	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 16:43	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 16:43	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 16:43	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 16:43	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/10/17 18:35	10/13/17 16:43	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 16:43	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 16:43	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 16:43	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 16:43	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 16:43	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 16:43	1
Fluorene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 16:43	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 16:43	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 16:43	1

Client Sample ID: P-4D

Lab Sample ID: 460-142534-4

Date Collected: 10/05/17 11:10
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 16:43	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 16:43	1
Anthracene	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/13/17 16:43	1
Carbazole	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 16:43	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 16:43	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/13/17 16:43	1
Pyrene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 16:43	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/13/17 16:43	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 16:43	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/10/17 18:35	10/13/17 16:43	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/10/17 18:35	10/13/17 16:43	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/13/17 16:43	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/10/17 18:35	10/13/17 16:43	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/10/17 18:35	10/13/17 16:43	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 16:43	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 16:43	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/10/17 18:35	10/13/17 16:43	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 16:43	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 16:43	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/10/17 18:35	10/13/17 16:43	1
Bisphenol-A	13	J+	10	1.1	ug/L		10/10/17 18:35	10/13/17 16:43	1
N-Methylaniline	0.91	~~U*~~ UJ	5.2	0.91	ug/L		10/10/17 18:35	10/13/17 16:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*77*	*J*	*ug/L*		*5.88*		*10/10/17 18:35*	*10/13/17 16:43*	*1*
Unknown	*11*	*J*	*ug/L*		*7.39*		*10/10/17 18:35*	*10/13/17 16:43*	*1*
Unknown	*35*	*J*	*ug/L*		*7.61*		*10/10/17 18:35*	*10/13/17 16:43*	*1*
Unknown	*9.9*	*J*	*ug/L*		*13.11*		*10/10/17 18:35*	*10/13/17 16:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*114*	*X*	*51 - 108*	*10/10/17 18:35*	*10/13/17 16:43*	*1*
Phenol-d5	*40*	*X*	*14 - 39*	*10/10/17 18:35*	*10/13/17 16:43*	*1*
Terphenyl-d14	*72*		*40 - 148*	*10/10/17 18:35*	*10/13/17 16:43*	*1*
2,4,6-Tribromophenol	*86*		*26 - 139*	*10/10/17 18:35*	*10/13/17 16:43*	*1*
2-Fluorophenol	*58*		*25 - 58*	*10/10/17 18:35*	*10/13/17 16:43*	*1*
2-Fluorobiphenyl	*102*		*45 - 107*	*10/10/17 18:35*	*10/13/17 16:43*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	19200		150	92.1	ug/L		10/12/17 09:56	10/12/17 18:45	1
Manganese, Dissolved	1240		15.0	3.1	ug/L		10/12/17 09:56	10/12/17 18:45	1

Client Sample ID: DGC-2S

Lab Sample ID: 460-142534-5

Date Collected: 10/05/17 14:00
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.8		0.40	0.20	ug/L			10/15/17 01:06	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: DGC-2S

Lab Sample ID: 460-142534-5

Date Collected: 10/05/17 14:00
Date Received: 10/05/17 20:00

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	107		72 - 133		10/15/17 01:06	1
1,2-Dichloroethane-d4 (Surr)	110		71 - 144		10/15/17 01:06	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 15:22	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/15/17 15:22	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/15/17 15:22	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/15/17 15:22	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/15/17 15:22	1
Acetone	1.1	U	5.0	1.1	ug/L			10/15/17 15:22	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/15/17 15:22	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/15/17 15:22	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/15/17 15:22	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/15/17 15:22	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/15/17 15:22	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/15/17 15:22	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/15/17 15:22	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/15/17 15:22	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/15/17 15:22	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/15/17 15:22	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/15/17 15:22	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/15/17 15:22	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/15/17 15:22	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/15/17 15:22	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 15:22	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/15/17 15:22	1
Benzene	0.090	U	1.0	0.090	ug/L			10/15/17 15:22	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/15/17 15:22	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/15/17 15:22	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/15/17 15:22	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/15/17 15:22	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/15/17 15:22	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/15/17 15:22	1
Toluene	0.25	U	1.0	0.25	ug/L			10/15/17 15:22	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/15/17 15:22	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/15/17 15:22	1
Styrene	0.17	U	1.0	0.17	ug/L			10/15/17 15:22	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/15/17 15:22	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/15/17 15:22	1
MTBE	0.15	J	1.0	0.13	ug/L			10/15/17 15:22	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/15/17 15:22	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/15/17 15:22	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/15/17 15:22	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/15/17 15:22	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/15/17 15:22	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/15/17 15:22	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/15/17 15:22	1
Indane	0.12	U	1.0	0.12	ug/L			10/15/17 15:22	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/15/17 15:22	1

Client Sample ID: DGC-2S

Lab Sample ID: 460-142534-5

Date Collected: 10/05/17 14:00
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/15/17 15:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/17 15:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/15/17 15:22*	*1*
Bromofluorobenzene	*104*		*77 - 124*		*10/15/17 15:22*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/15/17 15:22*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/15/17 15:22*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/10/17 18:35	10/11/17 23:44	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/10/17 18:35	10/11/17 23:44	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/10/17 18:35	10/11/17 23:44	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/10/17 18:35	10/11/17 23:44	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/10/17 18:35	10/11/17 23:44	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/10/17 18:35	10/11/17 23:44	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/10/17 18:35	10/13/17 17:04	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 17:04	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 17:04	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/13/17 17:04	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 17:04	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 17:04	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 17:04	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/10/17 18:35	10/13/17 17:04	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/10/17 18:35	10/13/17 17:04	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/10/17 18:35	10/13/17 17:04	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 17:04	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/10/17 18:35	10/13/17 17:04	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 17:04	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/10/17 18:35	10/13/17 17:04	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/13/17 17:04	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 17:04	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/10/17 18:35	10/13/17 17:04	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 17:04	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/10/17 18:35	10/13/17 17:04	1
Isophorone	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 17:04	1
Bis(2-chloroethoxy)methane	0.72	U *	10	0.72	ug/L		10/10/17 18:35	10/13/17 17:04	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/10/17 18:35	10/13/17 17:04	1
Naphthalene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 17:04	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 17:04	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 17:04	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 17:04	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 17:04	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 17:04	1

Client Sample ID: DGC-2S

Lab Sample ID: 460-142534-5

Date Collected: 10/05/17 14:00
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:04	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:04	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:04	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/10/17 18:35	10/13/17 17:04	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 17:04	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 17:04	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 17:04	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 17:04	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:04	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:04	1
Fluorene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 17:04	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 17:04	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 17:04	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:04	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:04	1
Anthracene	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/13/17 17:04	1
Carbazole	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 17:04	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 17:04	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/13/17 17:04	1
Pyrene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 17:04	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/13/17 17:04	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:04	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/10/17 18:35	10/13/17 17:04	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/10/17 18:35	10/13/17 17:04	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/13/17 17:04	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/10/17 18:35	10/13/17 17:04	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/10/17 18:35	10/13/17 17:04	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 17:04	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 17:04	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/10/17 18:35	10/13/17 17:04	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 17:04	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:04	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/10/17 18:35	10/13/17 17:04	1
Bisphenol-A	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:04	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/10/17 18:35	10/13/17 17:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/10/17 18:35*	*10/13/17 17:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*115*	*X*	*51 - 108*	*10/10/17 18:35*	*10/13/17 17:04*	*1*
Phenol-d5	*37*		*14 - 39*	*10/10/17 18:35*	*10/13/17 17:04*	*1*
Terphenyl-d14	*86*		*40 - 148*	*10/10/17 18:35*	*10/13/17 17:04*	*1*
2,4,6-Tribromophenol	*84*		*26 - 139*	*10/10/17 18:35*	*10/13/17 17:04*	*1*
2-Fluorophenol	*52*		*25 - 58*	*10/10/17 18:35*	*10/13/17 17:04*	*1*
2-Fluorobiphenyl	*84*		*45 - 107*	*10/10/17 18:35*	*10/13/17 17:04*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2140		150	92.1	ug/L		10/12/17 09:56	10/12/17 18:49	1

Client Sample ID: DGC-2S

Lab Sample ID: 460-142534-5

Date Collected: 10/05/17 14:00
Date Received: 10/05/17 20:00

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	1410		15.0	3.1	ug/L		10/12/17 09:56	10/12/17 18:49	1

Client Sample ID: DDA-12-US

Lab Sample ID: 460-142534-6

Date Collected: 10/05/17 13:40
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.44	U	2.0	0.44	ug/L			10/16/17 13:32	2
Bromomethane	0.36	U	2.0	0.36	ug/L			10/16/17 13:32	2
Vinyl chloride	0.12	U	2.0	0.12	ug/L			10/16/17 13:32	2
Chloroethane	0.74	U	2.0	0.74	ug/L			10/16/17 13:32	2
Methylene Chloride	0.42	U	2.0	0.42	ug/L			10/16/17 13:32	2
Acetone	2.1	U	10	2.1	ug/L			10/16/17 13:32	2
Carbon disulfide	0.44	U	2.0	0.44	ug/L			10/16/17 13:32	2
1,1-Dichloroethene	0.68	U	2.0	0.68	ug/L			10/16/17 13:32	2
1,1-Dichloroethane	0.48	U	2.0	0.48	ug/L			10/16/17 13:32	2
trans-1,2-Dichloroethene	0.36	U	2.0	0.36	ug/L			10/16/17 13:32	2
cis-1,2-Dichloroethene	0.52	U	2.0	0.52	ug/L			10/16/17 13:32	2
Chloroform	0.44	U	2.0	0.44	ug/L			10/16/17 13:32	2
1,2-Dichloroethane	0.50	U	2.0	0.50	ug/L			10/16/17 13:32	2
2-Butanone	4.4	U	10	4.4	ug/L			10/16/17 13:32	2
1,1,1-Trichloroethane	0.56	U	2.0	0.56	ug/L			10/16/17 13:32	2
Carbon tetrachloride	0.66	U	2.0	0.66	ug/L			10/16/17 13:32	2
Bromodichloromethane	0.30	U	2.0	0.30	ug/L			10/16/17 13:32	2
1,2-Dichloropropane	0.36	U	2.0	0.36	ug/L			10/16/17 13:32	2
cis-1,3-Dichloropropene	0.32	U	2.0	0.32	ug/L			10/16/17 13:32	2
Trichloroethene	0.44	U	2.0	0.44	ug/L			10/16/17 13:32	2
Dibromochloromethane	0.44	U	2.0	0.44	ug/L			10/16/17 13:32	2
1,1,2-Trichloroethane	0.16	U	2.0	0.16	ug/L			10/16/17 13:32	2
Benzene	**29**		2.0	0.18	ug/L			10/16/17 13:32	2
trans-1,3-Dichloropropene	0.38	U	2.0	0.38	ug/L			10/16/17 13:32	2
Bromoform	0.36	U	2.0	0.36	ug/L			10/16/17 13:32	2
4-Methyl-2-pentanone	1.3	U	10	1.3	ug/L			10/16/17 13:32	2
2-Hexanone	1.4	U	10	1.4	ug/L			10/16/17 13:32	2
Tetrachloroethene	0.24	U	2.0	0.24	ug/L			10/16/17 13:32	2
1,1,2,2-Tetrachloroethane	0.38	U	2.0	0.38	ug/L			10/16/17 13:32	2
Toluene	**1.2**	J	2.0	0.50	ug/L			10/16/17 13:32	2
Chlorobenzene	**3.8**		2.0	0.48	ug/L			10/16/17 13:32	2
Ethylbenzene	**26**		2.0	0.60	ug/L			10/16/17 13:32	2
Styrene	0.34	U	2.0	0.34	ug/L			10/16/17 13:32	2
Xylenes, Total	**730**		4.0	0.56	ug/L			10/16/17 13:32	2
Ethyl ether	**0.59**	J	2.0	0.22	ug/L			10/16/17 13:32	2
MTBE	**0.45**	J	2.0	0.26	ug/L			10/16/17 13:32	2
Tetrahydrofuran	**3.8**	J	4.0	0.72	ug/L			10/16/17 13:32	2
Cyclohexane	**30**		2.0	0.52	ug/L			10/16/17 13:32	2
1,4-Dioxane	**110**		100	17	ug/L			10/16/17 13:32	2
1,2,4-Trimethylbenzene	**420**		2.0	0.46	ug/L			10/16/17 13:32	2
1,3,5-Trimethylbenzene	**99**		2.0	0.50	ug/L			10/16/17 13:32	2
Isopropylbenzene	**38**		2.0	0.64	ug/L			10/16/17 13:32	2

Client Sample ID: DDA-12-US

Lab Sample ID: 460-142534-6

Date Collected: 10/05/17 13:40
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	55		2.0	0.58	ug/L			10/16/17 13:32	2
Methylcyclohexane	46		2.0	0.44	ug/L			10/16/17 13:32	2
Indane	53		2.0	0.24	ug/L			10/16/17 13:32	2
Dichlorofluoromethane	1.3	J	2.0	0.42	ug/L			10/16/17 13:32	2
1,2,3-Trimethylbenzene	100		2.0	0.22	ug/L			10/16/17 13:32	2

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane, 1,3-dimethyl-	*11*	*J N*	*ug/L*		*4.67*	*2453-00-1*		*10/16/17 13:32*	*2*
Cyclopentane, 1,2-dimethyl-	*12*	*J N*	*ug/L*		*4.78*	*2452-99-5*		*10/16/17 13:32*	*2*
Benzene, 1-ethyl-3-methyl-	*100*	*J N*	*ug/L*		*10.12*	*620-14-4*		*10/16/17 13:32*	*2*
Benzene, 1-ethyl-4-methyl-	*49*	*J N*	*ug/L*		*10.14*	*622-96-8*		*10/16/17 13:32*	*2*
Benzene, 1-ethyl-2-methyl-	*91*	*J N*	*ug/L*		*10.37*	*611-14-3*		*10/16/17 13:32*	*2*
Benzene, 2-ethyl-1,4-dimethyl-	*12*	*J N*	*ug/L*		*10.99*	*1758-88-9*		*10/16/17 13:32*	*2*
Benzene, 2-ethyl-1,3-dimethyl-	*11*	*J N*	*ug/L*		*11.24*	*2870-04-4*		*10/16/17 13:32*	*2*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/16/17 13:32*	*2*
Bromofluorobenzene	*109*		*77 - 124*		*10/16/17 13:32*	*2*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/16/17 13:32*	*2*
Dibromofluoromethane (Surr)	*105*		*72 - 131*		*10/16/17 13:32*	*2*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/10/17 18:35	10/12/17 00:07	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/10/17 18:35	10/12/17 00:07	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/10/17 18:35	10/12/17 00:07	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/10/17 18:35	10/12/17 00:07	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/10/17 18:35	10/12/17 00:07	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/10/17 18:35	10/12/17 00:07	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/10/17 18:35	10/13/17 17:29	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 17:29	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 17:29	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/13/17 17:29	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 17:29	1
2,4-Dimethylphenol	4.0	J	10	0.95	ug/L		10/10/17 18:35	10/13/17 17:29	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 17:29	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/10/17 18:35	10/13/17 17:29	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/10/17 18:35	10/13/17 17:29	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/10/17 18:35	10/13/17 17:29	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 17:29	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/10/17 18:35	10/13/17 17:29	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 17:29	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/10/17 18:35	10/13/17 17:29	1
1,4-Dichlorobenzene	0.98	J	10	0.69	ug/L		10/10/17 18:35	10/13/17 17:29	1
1,2-Dichlorobenzene	1.9	J	10	0.86	ug/L		10/10/17 18:35	10/13/17 17:29	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/10/17 18:35	10/13/17 17:29	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 17:29	1

Client Sample ID: DDA-12-US

Lab Sample ID: 460-142534-6

Date Collected: 10/05/17 13:40
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/10/17 18:35	10/13/17 17:29	1
Isophorone	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 17:29	1
Bis(2-chloroethoxy)methane	0.72	U ~~*~~	10	0.72	ug/L		10/10/17 18:35	10/13/17 17:29	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/10/17 18:35	10/13/17 17:29	1
Naphthalene	2.5	J	10	0.83	ug/L		10/10/17 18:35	10/13/17 17:29	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 17:29	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 17:29	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 17:29	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 17:29	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 17:29	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:29	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:29	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:29	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/10/17 18:35	10/13/17 17:29	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 17:29	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 17:29	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 17:29	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 17:29	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:29	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:29	1
Fluorene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 17:29	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 17:29	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 17:29	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:29	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:29	1
Anthracene	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/13/17 17:29	1
Carbazole	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 17:29	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 17:29	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/13/17 17:29	1
Pyrene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 17:29	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/13/17 17:29	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:29	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/10/17 18:35	10/13/17 17:29	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/10/17 18:35	10/13/17 17:29	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/13/17 17:29	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/10/17 18:35	10/13/17 17:29	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/10/17 18:35	10/13/17 17:29	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 17:29	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 17:29	1
Diphenyl ether	7.7	J	10	0.52	ug/L		10/10/17 18:35	10/13/17 17:29	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 17:29	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:29	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/10/17 18:35	10/13/17 17:29	1
Bisphenol-A	15		10	1.1	ug/L		10/10/17 18:35	10/13/17 17:29	1
N-Methylaniline	1.4	~~J*~~ J-	5.2	0.91	ug/L		10/10/17 18:35	10/13/17 17:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*21*	*J*	*ug/L*		*3.27*		*10/10/17 18:35*	*10/13/17 17:29*	*1*
Benzene, (1-methylethyl)-	*31*	*J N*	*ug/L*		*3.84*	*98-82-8*	*10/10/17 18:35*	*10/13/17 17:29*	*1*
Benzene, propyl-	*50*	*J N*	*ug/L*		*4.10*	*103-65-1*	*10/10/17 18:35*	*10/13/17 17:29*	*1*

Client Sample ID: DDA-12-US

Lab Sample ID: 460-142534-6

Date Collected: 10/05/17 13:40
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Benzene, 1-ethyl-2-methyl-	72	J N	ug/L		4.16	611-14-3	10/10/17 18:35	10/13/17 17:29	1
Unknown	45	J	ug/L		4.19		10/10/17 18:35	10/13/17 17:29	1
Benzene, 1,3,5-trimethyl-	97	J N	ug/L		4.24	108-67-8	10/10/17 18:35	10/13/17 17:29	1
Unknown	67	J	ug/L		4.32		10/10/17 18:35	10/13/17 17:29	1
Benzene, 1,2,4-trimethyl-	210	J N	ug/L		4.46	95-63-6	10/10/17 18:35	10/13/17 17:29	1
Benzene, 1,2,3-trimethyl-	74	J N	ug/L		4.68	526-73-8	10/10/17 18:35	10/13/17 17:29	1
Indane	45	J N	ug/L		4.80	496-11-7	10/10/17 18:35	10/13/17 17:29	1
Benzene, 1-methyl-2-(1-methylethyl)-	11	J N	ug/L		4.93	527-84-4	10/10/17 18:35	10/13/17 17:29	1
Unknown	19	J	ug/L		6.34		10/10/17 18:35	10/13/17 17:29	1
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	23	J N	ug/L		6.94	827-16-7	10/10/17 18:35	10/13/17 17:29	1
Unknown	92	J	ug/L		7.40		10/10/17 18:35	10/13/17 17:29	1
Unknown	32	J	ug/L		8.38		10/10/17 18:35	10/13/17 17:29	1
Unknown	6.8	J	ug/L		8.64		10/10/17 18:35	10/13/17 17:29	1
Urea, N,N'-dimethyl-N,N'-diphenyl-	7.0	J N	ug/L		9.25	611-92-7	10/10/17 18:35	10/13/17 17:29	1
Unknown	11	J	ug/L		11.28		10/10/17 18:35	10/13/17 17:29	1
Unknown	28	J	ug/L		13.11		10/10/17 18:35	10/13/17 17:29	1
Unknown	9.2	J	ug/L		13.38		10/10/17 18:35	10/13/17 17:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	108		51 - 108	10/10/17 18:35	10/13/17 17:29	1
Phenol-d5	37		14 - 39	10/10/17 18:35	10/13/17 17:29	1
Terphenyl-d14	86		40 - 148	10/10/17 18:35	10/13/17 17:29	1
2,4,6-Tribromophenol	92		26 - 139	10/10/17 18:35	10/13/17 17:29	1
2-Fluorophenol	34		25 - 58	10/10/17 18:35	10/13/17 17:29	1
2-Fluorobiphenyl	100		45 - 107	10/10/17 18:35	10/13/17 17:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	57700		150	92.1	ug/L		10/12/17 09:56	10/12/17 18:52	1
Manganese, Dissolved	3200		15.0	3.1	ug/L		10/12/17 09:56	10/12/17 18:52	1

Client Sample ID: DDA-03

Lab Sample ID: 460-142534-7

Date Collected: 10/05/17 14:45
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.58		0.40	0.20	ug/L			10/15/17 00:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	105		72 - 133		10/15/17 00:19	1
1,2-Dichloroethane-d4 (Surr)	108		71 - 144		10/15/17 00:19	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 15:49	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/15/17 15:49	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/15/17 15:49	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/15/17 15:49	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: DDA-03

Lab Sample ID: 460-142534-7

Date Collected: 10/05/17 14:45
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/15/17 15:49	1
Acetone	1.1	U	5.0	1.1	ug/L			10/15/17 15:49	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/15/17 15:49	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/15/17 15:49	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/15/17 15:49	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/15/17 15:49	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/15/17 15:49	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/15/17 15:49	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/15/17 15:49	1
2-Butanone	2.2	U *	5.0	2.2	ug/L			10/15/17 15:49	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/15/17 15:49	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/15/17 15:49	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/15/17 15:49	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/15/17 15:49	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/15/17 15:49	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/15/17 15:49	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 15:49	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/15/17 15:49	1
Benzene	0.090	U	1.0	0.090	ug/L			10/15/17 15:49	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/15/17 15:49	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/15/17 15:49	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/15/17 15:49	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/15/17 15:49	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/15/17 15:49	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/15/17 15:49	1
Toluene	0.25	U	1.0	0.25	ug/L			10/15/17 15:49	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/15/17 15:49	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/15/17 15:49	1
Styrene	0.17	U	1.0	0.17	ug/L			10/15/17 15:49	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/15/17 15:49	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/15/17 15:49	1
MTBE	**0.46**	**J**	1.0	0.13	ug/L			10/15/17 15:49	1
Tetrahydrofuran	0.36	U *	2.0	0.36	ug/L			10/15/17 15:49	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/15/17 15:49	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/15/17 15:49	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/15/17 15:49	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/15/17 15:49	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/15/17 15:49	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/15/17 15:49	1
Indane	0.12	U	1.0	0.12	ug/L			10/15/17 15:49	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/15/17 15:49	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/15/17 15:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/17 15:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/15/17 15:49*	*1*
Bromofluorobenzene	*107*		*77 - 124*		*10/15/17 15:49*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/15/17 15:49*	*1*

Client Sample ID: DDA-03

Lab Sample ID: 460-142534-7

Date Collected: 10/05/17 14:45
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	113		72 - 131		10/15/17 15:49	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/10/17 18:35	10/12/17 00:30	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/10/17 18:35	10/12/17 00:30	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/10/17 18:35	10/12/17 00:30	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/10/17 18:35	10/12/17 00:30	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/10/17 18:35	10/12/17 00:30	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/10/17 18:35	10/12/17 00:30	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/10/17 18:35	10/13/17 17:51	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 17:51	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 17:51	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/10/17 18:35	10/13/17 17:51	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 17:51	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 17:51	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 17:51	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/10/17 18:35	10/13/17 17:51	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/10/17 18:35	10/13/17 17:51	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/10/17 18:35	10/13/17 17:51	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 17:51	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/10/17 18:35	10/13/17 17:51	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 17:51	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/10/17 18:35	10/13/17 17:51	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/13/17 17:51	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 17:51	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/10/17 18:35	10/13/17 17:51	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 17:51	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/10/17 18:35	10/13/17 17:51	1
Isophorone	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 17:51	1
Bis(2-chloroethoxy)methane	0.72	U *	10	0.72	ug/L		10/10/17 18:35	10/13/17 17:51	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/10/17 18:35	10/13/17 17:51	1
Naphthalene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 17:51	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 17:51	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 17:51	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 17:51	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 17:51	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 17:51	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:51	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:51	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:51	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/10/17 18:35	10/13/17 17:51	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 17:51	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 17:51	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 17:51	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 17:51	1

Client Sample ID: DDA-03

Lab Sample ID: 460-142534-7

Date Collected: 10/05/17 14:45
Date Received: 10/05/17 20:00

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:51	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 17:51	1
Fluorene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 17:51	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 17:51	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 17:51	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:51	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 17:51	1
Anthracene	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/13/17 17:51	1
Carbazole	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 17:51	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 17:51	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/13/17 17:51	1
Pyrene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 17:51	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/13/17 17:51	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:51	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/10/17 18:35	10/13/17 17:51	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/10/17 18:35	10/13/17 17:51	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/13/17 17:51	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/10/17 18:35	10/13/17 17:51	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/10/17 18:35	10/13/17 17:51	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 17:51	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 17:51	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/10/17 18:35	10/13/17 17:51	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 17:51	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:51	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/10/17 18:35	10/13/17 17:51	1
Bisphenol-A	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 17:51	1
N-Methylaniline	0.91	~~U~~ * UJ	5.2	0.91	ug/L		10/10/17 18:35	10/13/17 17:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,1'-Biphenyl, 4-fluoro-	*71*	*J N*	*ug/L*		*6.96*	*324-74-3*	*10/10/17 18:35*	*10/13/17 17:51*	*1*
Unknown	*82*	*J*	*ug/L*		*11.90*		*10/10/17 18:35*	*10/13/17 17:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*108*		*51 - 108*	*10/10/17 18:35*	*10/13/17 17:51*	*1*
Phenol-d5	*39*		*14 - 39*	*10/10/17 18:35*	*10/13/17 17:51*	*1*
Terphenyl-d14	*85*		*40 - 148*	*10/10/17 18:35*	*10/13/17 17:51*	*1*
2,4,6-Tribromophenol	*80*		*26 - 139*	*10/10/17 18:35*	*10/13/17 17:51*	*1*
2-Fluorophenol	*54*		*25 - 58*	*10/10/17 18:35*	*10/13/17 17:51*	*1*
2-Fluorobiphenyl	*90*		*45 - 107*	*10/10/17 18:35*	*10/13/17 17:51*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7400		150	92.1	ug/L		10/14/17 21:50	10/15/17 20:23	1
Manganese, Dissolved	6030		15.0	3.1	ug/L		10/14/17 21:50	10/15/17 20:23	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: TBGW_100617

Lab Sample ID: 460-142549-1

Date Collected: 10/06/17 00:00
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/14/17 12:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 133*		*10/14/17 12:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 144*		*10/14/17 12:16*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 23:47	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/15/17 23:47	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/15/17 23:47	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/15/17 23:47	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/15/17 23:47	1
Acetone	6.1		5.0	1.1	ug/L			10/15/17 23:47	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/15/17 23:47	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/15/17 23:47	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/15/17 23:47	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/15/17 23:47	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/15/17 23:47	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/15/17 23:47	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/15/17 23:47	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/15/17 23:47	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/15/17 23:47	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/15/17 23:47	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/15/17 23:47	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/15/17 23:47	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/15/17 23:47	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/15/17 23:47	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/15/17 23:47	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/15/17 23:47	1
Benzene	0.090	U	1.0	0.090	ug/L			10/15/17 23:47	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/15/17 23:47	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/15/17 23:47	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/15/17 23:47	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/15/17 23:47	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/15/17 23:47	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/15/17 23:47	1
Toluene	0.25	U	1.0	0.25	ug/L			10/15/17 23:47	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/15/17 23:47	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/15/17 23:47	1
Styrene	0.17	U	1.0	0.17	ug/L			10/15/17 23:47	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/15/17 23:47	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/15/17 23:47	1
MTBE	0.13	U	1.0	0.13	ug/L			10/15/17 23:47	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/15/17 23:47	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/15/17 23:47	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/15/17 23:47	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/15/17 23:47	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/15/17 23:47	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/15/17 23:47	1

Client Sample ID: TBGW_100617

Lab Sample ID: 460-142549-1

Date Collected: 10/06/17 00:00
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/15/17 23:47	1
Indane	0.12	U	1.0	0.12	ug/L			10/15/17 23:47	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/15/17 23:47	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/15/17 23:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/17 23:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*74 - 132*		*10/15/17 23:47*	*1*
Bromofluorobenzene	*83*		*77 - 124*		*10/15/17 23:47*	*1*
Toluene-d8 (Surr)	*113*		*80 - 120*		*10/15/17 23:47*	*1*
Dibromofluoromethane (Surr)	*117*		*72 - 131*		*10/15/17 23:47*	*1*

Client Sample ID: GA-101

Lab Sample ID: 460-142549-2

Date Collected: 10/06/17 10:45
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	9.5		2.0	1.0	ug/L			10/15/17 00:43	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*73*		*72 - 133*		*10/15/17 00:43*	*5*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 144*		*10/15/17 00:43*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	4.4	U	20	4.4	ug/L			10/16/17 17:36	20
Bromomethane	3.6	U	20	3.6	ug/L			10/16/17 17:36	20
Vinyl chloride	5.0	J	20	1.2	ug/L			10/16/17 17:36	20
Chloroethane	7.4	U	20	7.4	ug/L			10/16/17 17:36	20
Methylene Chloride	4.2	U	20	4.2	ug/L			10/16/17 17:36	20
Acetone	21	U	100	21	ug/L			10/16/17 17:36	20
Carbon disulfide	4.4	U	20	4.4	ug/L			10/16/17 17:36	20
1,1-Dichloroethene	6.8	U	20	6.8	ug/L			10/16/17 17:36	20
1,1-Dichloroethane	4.8	U	20	4.8	ug/L			10/16/17 17:36	20
trans-1,2-Dichloroethene	3.6	U	20	3.6	ug/L			10/16/17 17:36	20
cis-1,2-Dichloroethene	35		20	5.2	ug/L			10/16/17 17:36	20
Chloroform	4.4	U	20	4.4	ug/L			10/16/17 17:36	20
1,2-Dichloroethane	5.0	U	20	5.0	ug/L			10/16/17 17:36	20
2-Butanone	44	U	100	44	ug/L			10/16/17 17:36	20
1,1,1-Trichloroethane	5.6	U	20	5.6	ug/L			10/16/17 17:36	20
Carbon tetrachloride	6.6	U	20	6.6	ug/L			10/16/17 17:36	20
Bromodichloromethane	3.0	U	20	3.0	ug/L			10/16/17 17:36	20
1,2-Dichloropropane	3.6	U	20	3.6	ug/L			10/16/17 17:36	20
cis-1,3-Dichloropropene	3.2	U	20	3.2	ug/L			10/16/17 17:36	20
Trichloroethene	7.3	J	20	4.4	ug/L			10/16/17 17:36	20
Dibromochloromethane	4.4	U	20	4.4	ug/L			10/16/17 17:36	20
1,1,2-Trichloroethane	1.6	U	20	1.6	ug/L			10/16/17 17:36	20
Benzene	23		20	1.8	ug/L			10/16/17 17:36	20

Client Sample ID: GA-101

Lab Sample ID: 460-142549-2

Date Collected: 10/06/17 10:45
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	3.8	U	20	3.8	ug/L			10/16/17 17:36	20
Bromoform	3.6	U	20	3.6	ug/L			10/16/17 17:36	20
4-Methyl-2-pentanone	13	U	100	13	ug/L			10/16/17 17:36	20
2-Hexanone	14	U	100	14	ug/L			10/16/17 17:36	20
Tetrachloroethene	4.1	J	20	2.4	ug/L			10/16/17 17:36	20
1,1,2,2-Tetrachloroethane	3.8	U-*	20	3.8	ug/L			10/16/17 17:36	20
Toluene	2800		20	5.0	ug/L			10/16/17 17:36	20
Chlorobenzene	26		20	4.8	ug/L			10/16/17 17:36	20
Ethylbenzene	2000		20	6.0	ug/L			10/16/17 17:36	20
Styrene	3.4	U	20	3.4	ug/L			10/16/17 17:36	20
Xylenes, Total	6800		40	5.6	ug/L			10/16/17 17:36	20
Ethyl ether	2.2	U	20	2.2	ug/L			10/16/17 17:36	20
MTBE	2.6	U	20	2.6	ug/L			10/16/17 17:36	20
Tetrahydrofuran	7.2	U	40	7.2	ug/L			10/16/17 17:36	20
Cyclohexane	20		20	5.2	ug/L			10/16/17 17:36	20
1,2,4-Trimethylbenzene	3000		20	4.6	ug/L			10/16/17 17:36	20
1,3,5-Trimethylbenzene	800		20	5.0	ug/L			10/16/17 17:36	20
Isopropylbenzene	150		20	6.4	ug/L			10/16/17 17:36	20
N-Propylbenzene	450		20	5.8	ug/L			10/16/17 17:36	20
Methylcyclohexane	87		20	4.4	ug/L			10/16/17 17:36	20
Indane	310		20	2.4	ug/L			10/16/17 17:36	20
Dichlorofluoromethane	4.2	U	20	4.2	ug/L			10/16/17 17:36	20
1,2,3-Trimethylbenzene	890		20	2.2	ug/L			10/16/17 17:36	20

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*2200*	*J N*	*ug/L*		*9.68*	*620-14-4*		*10/16/17 17:36*	*20*
Benzene, 1-ethyl-2-methyl-	*810*	*J N*	*ug/L*		*9.90*	*611-14-3*		*10/16/17 17:36*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*74 - 132*		*10/16/17 17:36*	*20*
Bromofluorobenzene	*92*		*77 - 124*		*10/16/17 17:36*	*20*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/16/17 17:36*	*20*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/16/17 17:36*	*20*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/10/17 18:35	10/12/17 00:53	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/10/17 18:35	10/12/17 00:53	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/10/17 18:35	10/12/17 00:53	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/10/17 18:35	10/12/17 00:53	1
Pentachlorophenol	0.17	J	0.21	0.032	ug/L		10/10/17 18:35	10/12/17 00:53	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/10/17 18:35	10/12/17 00:53	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/10/17 18:35	10/13/17 21:09	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 21:09	1
2-Methylphenol	4.7	J	10	1.3	ug/L		10/10/17 18:35	10/13/17 21:09	1
4-Methylphenol	11		10	0.91	ug/L		10/10/17 18:35	10/13/17 21:09	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 21:09	1

Client Sample ID: GA-101

Date Collected: 10/06/17 10:45
Date Received: 10/06/17 20:10

Lab Sample ID: 460-142549-2

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 21:09	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 21:09	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/10/17 18:35	10/13/17 21:09	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/10/17 18:35	10/13/17 21:09	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/10/17 18:35	10/13/17 21:09	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 21:09	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/10/17 18:35	10/13/17 21:09	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 21:09	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/10/17 18:35	10/13/17 21:09	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/10/17 18:35	10/13/17 21:09	1
1,2-Dichlorobenzene	2.4	J	10	0.86	ug/L		10/10/17 18:35	10/13/17 21:09	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/10/17 18:35	10/13/17 21:09	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 21:09	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/10/17 18:35	10/13/17 21:09	1
Isophorone	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 21:09	1
Bis(2-chloroethoxy)methane	0.72	U-*	10	0.72	ug/L		10/10/17 18:35	10/13/17 21:09	1
1,2,4-Trichlorobenzene	8.2		1.0	0.64	ug/L		10/10/17 18:35	10/13/17 21:09	1
Naphthalene	93		10	0.83	ug/L		10/10/17 18:35	10/13/17 21:09	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 21:09	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 21:09	1
2-Methylnaphthalene	8.0	J	10	0.92	ug/L		10/10/17 18:35	10/13/17 21:09	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 21:09	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 21:09	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 21:09	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 21:09	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 21:09	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/10/17 18:35	10/13/17 21:09	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 21:09	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/10/17 18:35	10/13/17 21:09	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 21:09	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 21:09	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 21:09	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 21:09	1
Fluorene	0.83	U	10	0.83	ug/L		10/10/17 18:35	10/13/17 21:09	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 21:09	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 21:09	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 21:09	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 21:09	1
Anthracene	0.59	U	10	0.59	ug/L		10/10/17 18:35	10/13/17 21:09	1
Carbazole	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 21:09	1
Di-n-butyl phthalate	14		10	0.85	ug/L		10/10/17 18:35	10/13/17 21:09	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/10/17 18:35	10/13/17 21:09	1
Pyrene	0.86	U	10	0.86	ug/L		10/10/17 18:35	10/13/17 21:09	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/10/17 18:35	10/13/17 21:09	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 21:09	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/10/17 18:35	10/13/17 21:09	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/10/17 18:35	10/13/17 21:09	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/10/17 18:35	10/13/17 21:09	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/10/17 18:35	10/13/17 21:09	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: GA-101

Lab Sample ID: 460-142549-2

Date Collected: 10/06/17 10:45
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/10/17 18:35	10/13/17 21:09	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/10/17 18:35	10/13/17 21:09	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 21:09	1
Diphenyl ether	94		10	0.52	ug/L		10/10/17 18:35	10/13/17 21:09	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/10/17 18:35	10/13/17 21:09	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 21:09	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/10/17 18:35	10/13/17 21:09	1
Bisphenol-A	74		10	1.1	ug/L		10/10/17 18:35	10/13/17 21:09	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/10/17 18:35	10/13/17 21:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclohexanol	*67*	*J N*	*ug/L*		*3.53*	*108-93-0*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, (1-methylethyl)-	*120*	*J N*	*ug/L*		*3.84*	*98-82-8*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, propyl-	*240*	*J N*	*ug/L*		*4.11*	*103-65-1*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1-ethyl-3-methyl-	*660*	*J N*	*ug/L*		*4.18*	*620-14-4*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Unknown	*340*	*J*	*ug/L*		*4.22*		*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1,2,3-trimethyl-	*420*	*J N*	*ug/L*		*4.25*	*526-73-8*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1-ethyl-4-methyl-	*350*	*J N*	*ug/L*		*4.34*	*622-96-8*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Unknown	*780*	*J*	*ug/L*		*4.49*		*10/10/17 18:35*	*10/13/17 21:09*	*1*
Unknown	*420*	*J*	*ug/L*		*4.70*		*10/10/17 18:35*	*10/13/17 21:09*	*1*
Indane	*170*	*J N*	*ug/L*		*4.81*	*496-11-7*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1-methyl-3-propyl-	*82*	*J N*	*ug/L*		*4.89*	*1074-43-7*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1-ethyl-2,3-dimethyl-	*94*	*J N*	*ug/L*		*4.93*	*933-98-2*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 2-ethyl-1,4-dimethyl-	*120*	*J N*	*ug/L*		*5.08*	*1758-88-9*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 2-ethyl-1,3-dimethyl-	*300*	*J N*	*ug/L*		*5.15*	*2870-04-4*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1,2,3,4-tetramethyl-	*70*	*J N*	*ug/L*		*5.38*	*488-23-3*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1,2,3,5-tetramethyl-	*130*	*J N*	*ug/L*		*5.41*	*527-53-7*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Unknown	*450*	*J*	*ug/L*		*5.55*		*10/10/17 18:35*	*10/13/17 21:09*	*1*
Benzene, 1-ethenyl-4-ethyl-	*310*	*J N*	*ug/L*		*5.62*	*3454-07-7*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Unknown	*91*	*J*	*ug/L*		*5.75*		*10/10/17 18:35*	*10/13/17 21:09*	*1*
Unknown	*170*	*J*	*ug/L*		*13.12*		*10/10/17 18:35*	*10/13/17 21:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*103*		*51 - 108*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Phenol-d5	*30*		*14 - 39*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
Terphenyl-d14	*88*		*40 - 148*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
2,4,6-Tribromophenol	*97*		*26 - 139*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
2-Fluorophenol	*27*		*25 - 58*	*10/10/17 18:35*	*10/13/17 21:09*	*1*
2-Fluorobiphenyl	*104*		*45 - 107*	*10/10/17 18:35*	*10/13/17 21:09*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	31200		150	92.1	ug/L		10/14/17 21:50	10/17/17 20:35	1
Manganese, Dissolved	523		15.0	3.1	ug/L		10/14/17 21:50	10/17/17 20:35	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: C-1D

Lab Sample ID: 460-142549-3

Date Collected: 10/06/17 11:00
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 01:10	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 01:10	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 01:10	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 01:10	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 01:10	1
Acetone	5.0 ~~6.1~~	U	5.0	1.1	ug/L			10/16/17 01:10	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 01:10	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 01:10	1
1,1-Dichloroethane	0.65	J	1.0	0.24	ug/L			10/16/17 01:10	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 01:10	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/17 01:10	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 01:10	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/16/17 01:10	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 01:10	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 01:10	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 01:10	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 01:10	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 01:10	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 01:10	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/16/17 01:10	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 01:10	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 01:10	1
Benzene	88		1.0	0.090	ug/L			10/16/17 01:10	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 01:10	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 01:10	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 01:10	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 01:10	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 01:10	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 01:10	1
Toluene	0.57	J	1.0	0.25	ug/L			10/16/17 01:10	1
Chlorobenzene	27		1.0	0.24	ug/L			10/16/17 01:10	1
Ethylbenzene	11		1.0	0.30	ug/L			10/16/17 01:10	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 01:10	1
Xylenes, Total	23		2.0	0.28	ug/L			10/16/17 01:10	1
Ethyl ether	0.62	J	1.0	0.11	ug/L			10/16/17 01:10	1
MTBE	0.13	U	1.0	0.13	ug/L			10/16/17 01:10	1
Tetrahydrofuran	29		2.0	0.36	ug/L			10/16/17 01:10	1
Cyclohexane	4.0		1.0	0.26	ug/L			10/16/17 01:10	1
1,4-Dioxane	76		50	8.7	ug/L			10/16/17 01:10	1
1,2,4-Trimethylbenzene	32		1.0	0.23	ug/L			10/16/17 01:10	1
1,3,5-Trimethylbenzene	0.78	J	1.0	0.25	ug/L			10/16/17 01:10	1
Isopropylbenzene	17		1.0	0.32	ug/L			10/16/17 01:10	1
N-Propylbenzene	30		1.0	0.29	ug/L			10/16/17 01:10	1
Methylcyclohexane	5.8		1.0	0.22	ug/L			10/16/17 01:10	1
Indane	110		1.0	0.12	ug/L			10/16/17 01:10	1
Dichlorofluoromethane	0.71	J	1.0	0.21	ug/L			10/16/17 01:10	1
1,2,3-Trimethylbenzene	3.1		1.0	0.11	ug/L			10/16/17 01:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*5.2*	*J*	*ug/L*		*9.70*			*10/16/17 01:10*	*1*

Client Sample ID: C-1D

Lab Sample ID: 460-142549-3

Date Collected: 10/06/17 11:00
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Benzene, 1-ethyl-2-methyl-	8.1	J N	ug/L		9.90	611-14-3		10/16/17 01:10	1
Unknown	16	J	ug/L		10.12			10/16/17 01:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		74 - 132		10/16/17 01:10	1
Bromofluorobenzene	85		77 - 124		10/16/17 01:10	1
Toluene-d8 (Surr)	105		80 - 120		10/16/17 01:10	1
Dibromofluoromethane (Surr)	110		72 - 131		10/16/17 01:10	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/10/17 18:35	10/12/17 01:16	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/10/17 18:35	10/12/17 01:16	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/10/17 18:35	10/12/17 01:16	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/10/17 18:35	10/12/17 01:16	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/10/17 18:35	10/12/17 01:16	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	2.1	U	52	2.1	ug/L		10/10/17 18:35	10/16/17 16:52	5
2-Chlorophenol	3.9	U	52	3.9	ug/L		10/10/17 18:35	10/16/17 16:52	5
2-Methylphenol	6.7	U	52	6.7	ug/L		10/10/17 18:35	10/16/17 16:52	5
4-Methylphenol	4.5	U	52	4.5	ug/L		10/10/17 18:35	10/16/17 16:52	5
2-Nitrophenol	3.1	U	52	3.1	ug/L		10/10/17 18:35	10/16/17 16:52	5
2,4-Dimethylphenol	4.7	U	52	4.7	ug/L		10/10/17 18:35	10/16/17 16:52	5
2,4-Dichlorophenol	3.3	U	52	3.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
4-Chloro-3-methylphenol	4.0	U	52	4.0	ug/L		10/10/17 18:35	10/16/17 16:52	5
2,4,6-Trichlorophenol	2.8	U	52	2.8	ug/L		10/10/17 18:35	10/16/17 16:52	5
2,4,5-Trichlorophenol	2.6	U	52	2.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
2,4-Dinitrophenol	12	U	100	12	ug/L		10/10/17 18:35	10/16/17 16:52	5
4-Nitrophenol	24	U	100	24	ug/L		10/10/17 18:35	10/16/17 16:52	5
4,6-Dinitro-2-methylphenol	10	U	100	10	ug/L		10/10/17 18:35	10/16/17 16:52	5
Bis(2-chloroethyl)ether	12		5.2	0.63	ug/L		10/10/17 18:35	10/16/17 16:52	5
1,3-Dichlorobenzene	5.8	U	52	5.8	ug/L		10/10/17 18:35	10/16/17 16:52	5
1,4-Dichlorobenzene	3.4	U	52	3.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
1,2-Dichlorobenzene	4.3	U	52	4.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
N-Nitrosodi-n-propylamine	4.3	U	5.2	4.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
Hexachloroethane	0.47	U	5.2	0.47	ug/L		10/10/17 18:35	10/16/17 16:52	5
Nitrobenzene	2.6	U	5.2	2.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
Isophorone	3.5	U	52	3.5	ug/L		10/10/17 18:35	10/16/17 16:52	5
Bis(2-chloroethoxy)methane	3.6	U *	52	3.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
1,2,4-Trichlorobenzene	3.2	U	5.2	3.2	ug/L		10/10/17 18:35	10/16/17 16:52	5
Naphthalene	4.2	U	52	4.2	ug/L		10/10/17 18:35	10/16/17 16:52	5
4-Chloroaniline	3.8	U	52	3.8	ug/L		10/10/17 18:35	10/16/17 16:52	5
Hexachlorobutadiene	4.0	U	5.2	4.0	ug/L		10/10/17 18:35	10/16/17 16:52	5
2-Methylnaphthalene	4.6	U	52	4.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
Hexachlorocyclopentadiene	3.2	U	52	3.2	ug/L		10/10/17 18:35	10/16/17 16:52	5
2-Chloronaphthalene	3.2	U	52	3.2	ug/L		10/10/17 18:35	10/16/17 16:52	5
2-Nitroaniline	3.4	U	52	3.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
Dimethyl phthalate	5.1	U	52	5.1	ug/L		10/10/17 18:35	10/16/17 16:52	5

Client Sample ID: C-1D

Lab Sample ID: 460-142549-3

Date Collected: 10/06/17 11:00
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	3.4	U	52	3.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
2,6-Dinitrotoluene	4.6	U	10	4.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
3-Nitroaniline	4.3	U	52	4.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
Acenaphthene	4.6	U	52	4.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
Dibenzofuran	4.4	U	52	4.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
2,4-Dinitrotoluene	5.4	U	10	5.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
Diethyl phthalate	5.2	U	52	5.2	ug/L		10/10/17 18:35	10/16/17 16:52	5
4-Chlorophenyl phenyl ether	5.0	U	52	5.0	ug/L		10/10/17 18:35	10/16/17 16:52	5
Fluorene	4.2	U	52	4.2	ug/L		10/10/17 18:35	10/16/17 16:52	5
4-Nitroaniline	2.5	U	52	2.5	ug/L		10/10/17 18:35	10/16/17 16:52	5
N-Nitrosodiphenylamine	3.9	U	52	3.9	ug/L		10/10/17 18:35	10/16/17 16:52	5
4-Bromophenyl phenyl ether	5.3	U	52	5.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
Phenanthrene	3.4	U	52	3.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
Anthracene	3.0	U	52	3.0	ug/L		10/10/17 18:35	10/16/17 16:52	5
Carbazole	4.4	U	52	4.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
Di-n-butyl phthalate	4.3	U	52	4.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
Fluoranthene	3.8	U	52	3.8	ug/L		10/10/17 18:35	10/16/17 16:52	5
Pyrene	4.3	U	52	4.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
Butyl benzyl phthalate	3.1	U	52	3.1	ug/L		10/10/17 18:35	10/16/17 16:52	5
3,3'-Dichlorobenzidine	5.4	U	52	5.4	ug/L		10/10/17 18:35	10/16/17 16:52	5
Chrysene	3.5	U	10	3.5	ug/L		10/10/17 18:35	10/16/17 16:52	5
Bis(2-ethylhexyl) phthalate	3.8	U	10	3.8	ug/L		10/10/17 18:35	10/16/17 16:52	5
Di-n-octyl phthalate	3.6	U	52	3.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
Benzo[k]fluoranthene	0.94	U	5.2	0.94	ug/L		10/10/17 18:35	10/16/17 16:52	5
Indeno[1,2,3-cd]pyrene	1.1	U	5.2	1.1	ug/L		10/10/17 18:35	10/16/17 16:52	5
Dibenz(a,h)anthracene	0.47	U	5.2	0.47	ug/L		10/10/17 18:35	10/16/17 16:52	5
Benzo[g,h,i]perylene	3.9	U	52	3.9	ug/L		10/10/17 18:35	10/16/17 16:52	5
Diphenyl ether	2.6	U	52	2.6	ug/L		10/10/17 18:35	10/16/17 16:52	5
n,n'-Dimethylaniline	4.0	U	5.2	4.0	ug/L		10/10/17 18:35	10/16/17 16:52	5
Caprolactam	5.5	U	52	5.5	ug/L		10/10/17 18:35	10/16/17 16:52	5
bis (2-chloroisopropyl) ether	4.8	U	52	4.8	ug/L		10/10/17 18:35	10/16/17 16:52	5
Bisphenol-A	**180**		52	5.3	ug/L		10/10/17 18:35	10/16/17 16:52	5
N-Methylaniline	4.5	~~U *~~ UJ	26	4.5	ug/L		10/10/17 18:35	10/16/17 16:52	5

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Indane	*34*	*J N*	*ug/L*		*4.47*	*496-11-7*	*10/10/17 18:35*	*10/16/17 16:52*	*5*
Unknown	*68*	*J*	*ug/L*		*6.95*		*10/10/17 18:35*	*10/16/17 16:52*	*5*
Unknown	*120*	*J*	*ug/L*		*12.30*		*10/10/17 18:35*	*10/16/17 16:52*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*100*		*51 - 108*	*10/10/17 18:35*	*10/16/17 16:52*	*5*
Phenol-d5	*32*		*14 - 39*	*10/10/17 18:35*	*10/16/17 16:52*	*5*
Terphenyl-d14	*87*		*40 - 148*	*10/10/17 18:35*	*10/16/17 16:52*	*5*
2,4,6-Tribromophenol	*122*		*26 - 139*	*10/10/17 18:35*	*10/16/17 16:52*	*5*
2-Fluorophenol	*46*		*25 - 58*	*10/10/17 18:35*	*10/16/17 16:52*	*5*
2-Fluorobiphenyl	*94*		*45 - 107*	*10/10/17 18:35*	*10/16/17 16:52*	*5*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**27400**		150	92.1	ug/L		10/14/17 21:50	10/17/17 21:52	1

Client Sample ID: C-1D

Lab Sample ID: 460-142549-3
Matrix: Water

Date Collected: 10/06/17 11:00
Date Received: 10/06/17 20:10

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	2860		15.0	3.1	ug/L		10/14/17 21:50	10/17/17 21:52	1

Client Sample ID: B-2D

Lab Sample ID: 460-142549-4
Matrix: Water

Date Collected: 10/06/17 13:35
Date Received: 10/06/17 20:10

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 12:05	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 12:05	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 12:05	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 12:05	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 12:05	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 12:05	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 12:05	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 12:05	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/16/17 12:05	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 12:05	1
cis-1,2-Dichloroethene	0.40	J	1.0	0.26	ug/L			10/16/17 12:05	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 12:05	1
1,2-Dichloroethane	0.40	J	1.0	0.25	ug/L			10/16/17 12:05	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 12:05	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 12:05	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 12:05	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 12:05	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 12:05	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 12:05	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/16/17 12:05	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 12:05	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 12:05	1
Benzene	20		1.0	0.090	ug/L			10/16/17 12:05	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 12:05	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 12:05	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 12:05	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 12:05	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 12:05	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 12:05	1
Toluene	0.25	U	1.0	0.25	ug/L			10/16/17 12:05	1
Chlorobenzene	7.6		1.0	0.24	ug/L			10/16/17 12:05	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/17 12:05	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 12:05	1
Xylenes, Total	3.2		2.0	0.28	ug/L			10/16/17 12:05	1
Ethyl ether	3.4		1.0	0.11	ug/L			10/16/17 12:05	1
MTBE	0.28	J	1.0	0.13	ug/L			10/16/17 12:05	1
Tetrahydrofuran	4.5		2.0	0.36	ug/L			10/16/17 12:05	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/16/17 12:05	1
1,4-Dioxane	600		50	8.7	ug/L			10/16/17 12:05	1
1,2,4-Trimethylbenzene	1.0		1.0	0.23	ug/L			10/16/17 12:05	1
1,3,5-Trimethylbenzene	0.44	J	1.0	0.25	ug/L			10/16/17 12:05	1
Isopropylbenzene	1.4		1.0	0.32	ug/L			10/16/17 12:05	1

Client Sample ID: B-2D

Lab Sample ID: 460-142549-4

Date Collected: 10/06/17 13:35
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	0.32	J	1.0	0.29	ug/L			10/16/17 12:05	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/16/17 12:05	1
Indane	5.9		1.0	0.12	ug/L			10/16/17 12:05	1
Dichlorofluoromethane	1.4		1.0	0.21	ug/L			10/16/17 12:05	1
1,2,3-Trimethylbenzene	0.61	J	1.0	0.11	ug/L			10/16/17 12:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/17 12:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*74 - 132*		*10/16/17 12:05*	*1*
Bromofluorobenzene	*86*		*77 - 124*		*10/16/17 12:05*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*10/16/17 12:05*	*1*
Dibromofluoromethane (Surr)	*107*		*72 - 131*		*10/16/17 12:05*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.053	0.019	ug/L		10/10/17 18:35	10/12/17 01:39	1
Benzo[a]pyrene	0.027	U	0.053	0.027	ug/L		10/10/17 18:35	10/12/17 01:39	1
Benzo[b]fluoranthene	0.020	U	0.053	0.020	ug/L		10/10/17 18:35	10/12/17 01:39	1
Hexachlorobenzene	0.013	J J+	0.021	0.0096	ug/L		10/10/17 18:35	10/12/17 01:39	1
Pentachlorophenol	0.033	U	0.21	0.033	ug/L		10/10/17 18:35	10/12/17 01:39	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.44	U	11	0.44	ug/L		10/10/17 18:35	10/13/17 21:52	1
2-Chlorophenol	0.79	U	11	0.79	ug/L		10/10/17 18:35	10/13/17 21:52	1
2-Methylphenol	1.4	U	11	1.4	ug/L		10/10/17 18:35	10/13/17 21:52	1
4-Methylphenol	0.93	U	11	0.93	ug/L		10/10/17 18:35	10/13/17 21:52	1
2-Nitrophenol	0.63	U	11	0.63	ug/L		10/10/17 18:35	10/13/17 21:52	1
2,4-Dimethylphenol	1.0	J J+	11	0.97	ug/L		10/10/17 18:35	10/13/17 21:52	1
2,4-Dichlorophenol	0.67	U	11	0.67	ug/L		10/10/17 18:35	10/13/17 21:52	1
4-Chloro-3-methylphenol	0.81	U	11	0.81	ug/L		10/10/17 18:35	10/13/17 21:52	1
2,4,6-Trichlorophenol	0.56	U	11	0.56	ug/L		10/10/17 18:35	10/13/17 21:52	1
2,4,5-Trichlorophenol	0.52	U	11	0.52	ug/L		10/10/17 18:35	10/13/17 21:52	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 21:52	1
4-Nitrophenol	4.9	U	21	4.9	ug/L		10/10/17 18:35	10/13/17 21:52	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 21:52	1
Bis(2-chloroethyl)ether	24	J+	1.1	0.13	ug/L		10/10/17 18:35	10/13/17 21:52	1
1,3-Dichlorobenzene	1.2	U	11	1.2	ug/L		10/10/17 18:35	10/13/17 21:52	1
1,4-Dichlorobenzene	0.70	U	11	0.70	ug/L		10/10/17 18:35	10/13/17 21:52	1
1,2-Dichlorobenzene	0.88	U	11	0.88	ug/L		10/10/17 18:35	10/13/17 21:52	1
N-Nitrosodi-n-propylamine	0.88	U	1.1	0.88	ug/L		10/10/17 18:35	10/13/17 21:52	1
Hexachloroethane	0.096	U	1.1	0.096	ug/L		10/10/17 18:35	10/13/17 21:52	1
Nitrobenzene	0.52	U	1.1	0.52	ug/L		10/10/17 18:35	10/13/17 21:52	1
Isophorone	0.71	U	11	0.71	ug/L		10/10/17 18:35	10/13/17 21:52	1
Bis(2-chloroethoxy)methane	0.73	U *	11	0.73	ug/L		10/10/17 18:35	10/13/17 21:52	1
1,2,4-Trichlorobenzene	0.65	U	1.1	0.65	ug/L		10/10/17 18:35	10/13/17 21:52	1
Naphthalene	0.85	U	11	0.85	ug/L		10/10/17 18:35	10/13/17 21:52	1
4-Chloroaniline	0.78	U	11	0.78	ug/L		10/10/17 18:35	10/13/17 21:52	1

Client Sample ID: B-2D

Lab Sample ID: 460-142549-4

Date Collected: 10/06/17 13:35
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	0.81	U	1.1	0.81	ug/L		10/10/17 18:35	10/13/17 21:52	1
2-Methylnaphthalene	0.94	U	11	0.94	ug/L		10/10/17 18:35	10/13/17 21:52	1
Hexachlorocyclopentadiene	0.65	U	11	0.65	ug/L		10/10/17 18:35	10/13/17 21:52	1
2-Chloronaphthalene	0.65	U	11	0.65	ug/L		10/10/17 18:35	10/13/17 21:52	1
2-Nitroaniline	0.69	U	11	0.69	ug/L		10/10/17 18:35	10/13/17 21:52	1
Dimethyl phthalate	1.0	U	11	1.0	ug/L		10/10/17 18:35	10/13/17 21:52	1
Acenaphthylene	0.69	U	11	0.69	ug/L		10/10/17 18:35	10/13/17 21:52	1
2,6-Dinitrotoluene	0.94	U	2.1	0.94	ug/L		10/10/17 18:35	10/13/17 21:52	1
3-Nitroaniline	0.87	U	11	0.87	ug/L		10/10/17 18:35	10/13/17 21:52	1
Acenaphthene	0.94	U	11	0.94	ug/L		10/10/17 18:35	10/13/17 21:52	1
Dibenzofuran	0.90	U	11	0.90	ug/L		10/10/17 18:35	10/13/17 21:52	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 21:52	1
Diethyl phthalate	1.1	U	11	1.1	ug/L		10/10/17 18:35	10/13/17 21:52	1
4-Chlorophenyl phenyl ether	1.0	U	11	1.0	ug/L		10/10/17 18:35	10/13/17 21:52	1
Fluorene	0.85	U	11	0.85	ug/L		10/10/17 18:35	10/13/17 21:52	1
4-Nitroaniline	0.51	U	11	0.51	ug/L		10/10/17 18:35	10/13/17 21:52	1
N-Nitrosodiphenylamine	0.79	U	11	0.79	ug/L		10/10/17 18:35	10/13/17 21:52	1
4-Bromophenyl phenyl ether	1.1	U	11	1.1	ug/L		10/10/17 18:35	10/13/17 21:52	1
Phenanthrene	0.69	U	11	0.69	ug/L		10/10/17 18:35	10/13/17 21:52	1
Anthracene	0.61	U	11	0.61	ug/L		10/10/17 18:35	10/13/17 21:52	1
Carbazole	0.90	U	11	0.90	ug/L		10/10/17 18:35	10/13/17 21:52	1
Di-n-butyl phthalate	0.87	U	11	0.87	ug/L		10/10/17 18:35	10/13/17 21:52	1
Fluoranthene	0.77	U	11	0.77	ug/L		10/10/17 18:35	10/13/17 21:52	1
Pyrene	0.88	U	11	0.88	ug/L		10/10/17 18:35	10/13/17 21:52	1
Butyl benzyl phthalate	0.64	U	11	0.64	ug/L		10/10/17 18:35	10/13/17 21:52	1
3,3'-Dichlorobenzidine	1.1	U	11	1.1	ug/L		10/10/17 18:35	10/13/17 21:52	1
Chrysene	0.71	U	2.1	0.71	ug/L		10/10/17 18:35	10/13/17 21:52	1
Bis(2-ethylhexyl) phthalate	0.77	U	2.1	0.77	ug/L		10/10/17 18:35	10/13/17 21:52	1
Di-n-octyl phthalate	0.73	U	11	0.73	ug/L		10/10/17 18:35	10/13/17 21:52	1
Benzo[k]fluoranthene	0.19	U	1.1	0.19	ug/L		10/10/17 18:35	10/13/17 21:52	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.1	0.22	ug/L		10/10/17 18:35	10/13/17 21:52	1
Dibenz(a,h)anthracene	0.096	U	1.1	0.096	ug/L		10/10/17 18:35	10/13/17 21:52	1
Benzo[g,h,i]perylene	0.80	U	11	0.80	ug/L		10/10/17 18:35	10/13/17 21:52	1
Diphenyl ether	**1.9**	**J J+**	11	0.53	ug/L		10/10/17 18:35	10/13/17 21:52	1
n,n'-Dimethylaniline	0.81	U	1.1	0.81	ug/L		10/10/17 18:35	10/13/17 21:52	1
Caprolactam	1.1	U	11	1.1	ug/L		10/10/17 18:35	10/13/17 21:52	1
bis (2-chloroisopropyl) ether	0.99	U	11	0.99	ug/L		10/10/17 18:35	10/13/17 21:52	1
Bisphenol-A	**51**	**J+**	11	1.1	ug/L		10/10/17 18:35	10/13/17 21:52	1
N-Methylaniline	0.93	~~U*~~ UJ	5.3	0.93	ug/L		10/10/17 18:35	10/13/17 21:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Indane	*7.1*	*J N*	*ug/L*		*4.79*	*496-11-7*	*10/10/17 18:35*	*10/13/17 21:52*	*1*
1-Propanol, 3-phenoxy-	*7.0*	*J N*	*ug/L*		*6.21*	*6180-61-6*	*10/10/17 18:35*	*10/13/17 21:52*	*1*
Unknown	*38*	*J*	*ug/L*		*7.38*		*10/10/17 18:35*	*10/13/17 21:52*	*1*
Unknown	*9.9*	*J*	*ug/L*		*7.69*		*10/10/17 18:35*	*10/13/17 21:52*	*1*
Unknown	*6.9*	*J*	*ug/L*		*11.77*		*10/10/17 18:35*	*10/13/17 21:52*	*1*
Unknown	*9.7*	*J*	*ug/L*		*12.18*		*10/10/17 18:35*	*10/13/17 21:52*	*1*
Unknown	*9.8*	*J*	*ug/L*		*13.11*		*10/10/17 18:35*	*10/13/17 21:52*	*1*

Client Sample ID: B-2D

Lab Sample ID: 460-142549-4

Date Collected: 10/06/17 13:35
Date Received: 10/06/17 20:10

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	111	X	51 - 108	10/10/17 18:35	10/13/17 21:52	1
Phenol-d5	41	X	14 - 39	10/10/17 18:35	10/13/17 21:52	1
Terphenyl-d14	87		40 - 148	10/10/17 18:35	10/13/17 21:52	1
2,4,6-Tribromophenol	92		26 - 139	10/10/17 18:35	10/13/17 21:52	1
2-Fluorophenol	56		25 - 58	10/10/17 18:35	10/13/17 21:52	1
2-Fluorobiphenyl	100		45 - 107	10/10/17 18:35	10/13/17 21:52	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	25800		150	92.1	ug/L		10/14/17 21:50	10/17/17 20:39	1
Manganese, Dissolved	5210		15.0	3.1	ug/L		10/14/17 21:50	10/17/17 20:39	1

Client Sample ID: PZ-11-EXT

Lab Sample ID: 460-142549-5

Date Collected: 10/06/17 13:40
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	47		2.0	1.0	ug/L			10/15/17 01:53	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	88		72 - 133		10/15/17 01:53	5
1,2-Dichloroethane-d4 (Surr)	123		71 - 144		10/15/17 01:53	5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	2.2	U	10	2.2	ug/L			10/16/17 18:23	10
Bromomethane	1.8	U	10	1.8	ug/L			10/16/17 18:23	10
Vinyl chloride	0.60	U	10	0.60	ug/L			10/16/17 18:23	10
Chloroethane	3.7	U	10	3.7	ug/L			10/16/17 18:23	10
Methylene Chloride	2.1	U	10	2.1	ug/L			10/16/17 18:23	10
Acetone	11	U	50	11	ug/L			10/16/17 18:23	10
Carbon disulfide	2.2	U	10	2.2	ug/L			10/16/17 18:23	10
1,1-Dichloroethene	3.4	U	10	3.4	ug/L			10/16/17 18:23	10
1,1-Dichloroethane	2.4	U	10	2.4	ug/L			10/16/17 18:23	10
trans-1,2-Dichloroethene	1.8	U	10	1.8	ug/L			10/16/17 18:23	10
cis-1,2-Dichloroethene	2.6	U	10	2.6	ug/L			10/16/17 18:23	10
Chloroform	2.2	U	10	2.2	ug/L			10/16/17 18:23	10
1,2-Dichloroethane	2.5	U	10	2.5	ug/L			10/16/17 18:23	10
2-Butanone	22	U	50	22	ug/L			10/16/17 18:23	10
1,1,1-Trichloroethane	2.8	U	10	2.8	ug/L			10/16/17 18:23	10
Carbon tetrachloride	3.3	U	10	3.3	ug/L			10/16/17 18:23	10
Bromodichloromethane	1.5	U	10	1.5	ug/L			10/16/17 18:23	10
1,2-Dichloropropane	1.8	U	10	1.8	ug/L			10/16/17 18:23	10
cis-1,3-Dichloropropene	1.6	U	10	1.6	ug/L			10/16/17 18:23	10
Trichloroethene	2.2	U	10	2.2	ug/L			10/16/17 18:23	10
Dibromochloromethane	2.2	U	10	2.2	ug/L			10/16/17 18:23	10
1,1,2-Trichloroethane	0.80	U	10	0.80	ug/L			10/16/17 18:23	10
Benzene	230		10	0.90	ug/L			10/16/17 18:23	10
trans-1,3-Dichloropropene	1.9	U	10	1.9	ug/L			10/16/17 18:23	10
Bromoform	1.8	U	10	1.8	ug/L			10/16/17 18:23	10

Client Sample ID: PZ-11-EXT

Lab Sample ID: 460-142549-5

Date Collected: 10/06/17 13:40
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	6.3	U	50	6.3	ug/L			10/16/17 18:23	10
2-Hexanone	7.2	U	50	7.2	ug/L			10/16/17 18:23	10
Tetrachloroethene	1.2	U	10	1.2	ug/L			10/16/17 18:23	10
1,1,2,2-Tetrachloroethane	1.9	U *	10	1.9	ug/L			10/16/17 18:23	10
Toluene	**4.0**	J	10	2.5	ug/L			10/16/17 18:23	10
Chlorobenzene	**66**		10	2.4	ug/L			10/16/17 18:23	10
Ethylbenzene	**410**		10	3.0	ug/L			10/16/17 18:23	10
Styrene	1.7	U	10	1.7	ug/L			10/16/17 18:23	10
Xylenes, Total	**4300**		20	2.8	ug/L			10/16/17 18:23	10
Ethyl ether	1.1	U	10	1.1	ug/L			10/16/17 18:23	10
MTBE	1.3	U	10	1.3	ug/L			10/16/17 18:23	10
Tetrahydrofuran	3.6	U	20	3.6	ug/L			10/16/17 18:23	10
Cyclohexane	**13**		10	2.6	ug/L			10/16/17 18:23	10
1,2,4-Trimethylbenzene	**1900**		10	2.3	ug/L			10/16/17 18:23	10
1,3,5-Trimethylbenzene	**480**		10	2.5	ug/L			10/16/17 18:23	10
Isopropylbenzene	**81**		10	3.2	ug/L			10/16/17 18:23	10
N-Propylbenzene	**240**		10	2.9	ug/L			10/16/17 18:23	10
Methylcyclohexane	**28**		10	2.2	ug/L			10/16/17 18:23	10
Indane	**280**		10	1.2	ug/L			10/16/17 18:23	10
Dichlorofluoromethane	2.1	U	10	2.1	ug/L			10/16/17 18:23	10
1,2,3-Trimethylbenzene	**520**		10	1.1	ug/L			10/16/17 18:23	10

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*520*	*J N*	*ug/L*		*9.68*	*620-14-4*		*10/16/17 18:23*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*74 - 132*		*10/16/17 18:23*	*10*
Bromofluorobenzene	*95*		*77 - 124*		*10/16/17 18:23*	*10*
Toluene-d8 (Surr)	*110*		*80 - 120*		*10/16/17 18:23*	*10*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/16/17 18:23*	*10*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.053	0.019	ug/L		10/10/17 18:35	10/12/17 02:03	1
Benzo[a]pyrene	0.027	U	0.053	0.027	ug/L		10/10/17 18:35	10/12/17 02:03	1
Benzo[b]fluoranthene	0.020	U	0.053	0.020	ug/L		10/10/17 18:35	10/12/17 02:03	1
Hexachlorobenzene	0.0096	U	0.021	0.0096	ug/L		10/10/17 18:35	10/12/17 02:03	1
Pentachlorophenol	0.033	U	0.21	0.033	ug/L		10/10/17 18:35	10/12/17 02:03	1
Bis(2-chloroethyl)ether	**6.8**		0.021	0.017	ug/L		10/10/17 18:35	10/12/17 02:03	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.44	U	11	0.44	ug/L		10/10/17 18:35	10/13/17 22:14	1
2-Chlorophenol	0.79	U	11	0.79	ug/L		10/10/17 18:35	10/13/17 22:14	1
2-Methylphenol	1.4	U	11	1.4	ug/L		10/10/17 18:35	10/13/17 22:14	1
4-Methylphenol	0.93	U	11	0.93	ug/L		10/10/17 18:35	10/13/17 22:14	1
2-Nitrophenol	0.63	U	11	0.63	ug/L		10/10/17 18:35	10/13/17 22:14	1
2,4-Dimethylphenol	**8.8**	J	11	0.97	ug/L		10/10/17 18:35	10/13/17 22:14	1
2,4-Dichlorophenol	0.67	U	11	0.67	ug/L		10/10/17 18:35	10/13/17 22:14	1
4-Chloro-3-methylphenol	0.81	U	11	0.81	ug/L		10/10/17 18:35	10/13/17 22:14	1

Client Sample ID: PZ-11-EXT

Lab Sample ID: 460-142549-5

Date Collected: 10/06/17 13:40
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	0.56	U	11	0.56	ug/L		10/10/17 18:35	10/13/17 22:14	1
2,4,5-Trichlorophenol	0.52	U	11	0.52	ug/L		10/10/17 18:35	10/13/17 22:14	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/10/17 18:35	10/13/17 22:14	1
4-Nitrophenol	4.9	U	21	4.9	ug/L		10/10/17 18:35	10/13/17 22:14	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/10/17 18:35	10/13/17 22:14	1
1,3-Dichlorobenzene	1.2	U	11	1.2	ug/L		10/10/17 18:35	10/13/17 22:14	1
1,4-Dichlorobenzene	**2.3**	**J**	11	0.70	ug/L		10/10/17 18:35	10/13/17 22:14	1
1,2-Dichlorobenzene	**2.9**	**J**	11	0.88	ug/L		10/10/17 18:35	10/13/17 22:14	1
N-Nitrosodi-n-propylamine	0.88	U	1.1	0.88	ug/L		10/10/17 18:35	10/13/17 22:14	1
Hexachloroethane	0.096	U	1.1	0.096	ug/L		10/10/17 18:35	10/13/17 22:14	1
Nitrobenzene	0.52	U	1.1	0.52	ug/L		10/10/17 18:35	10/13/17 22:14	1
Isophorone	0.71	U	11	0.71	ug/L		10/10/17 18:35	10/13/17 22:14	1
Bis(2-chloroethoxy)methane	0.73	U *	11	0.73	ug/L		10/10/17 18:35	10/13/17 22:14	1
1,2,4-Trichlorobenzene	0.65	U	1.1	0.65	ug/L		10/10/17 18:35	10/13/17 22:14	1
Naphthalene	**52**		11	0.85	ug/L		10/10/17 18:35	10/13/17 22:14	1
4-Chloroaniline	0.78	U	11	0.78	ug/L		10/10/17 18:35	10/13/17 22:14	1
Hexachlorobutadiene	0.81	U	1.1	0.81	ug/L		10/10/17 18:35	10/13/17 22:14	1
2-Methylnaphthalene	**2.6**	**J**	11	0.94	ug/L		10/10/17 18:35	10/13/17 22:14	1
Hexachlorocyclopentadiene	0.65	U	11	0.65	ug/L		10/10/17 18:35	10/13/17 22:14	1
2-Chloronaphthalene	0.65	U	11	0.65	ug/L		10/10/17 18:35	10/13/17 22:14	1
2-Nitroaniline	0.69	U	11	0.69	ug/L		10/10/17 18:35	10/13/17 22:14	1
Dimethyl phthalate	1.0	U	11	1.0	ug/L		10/10/17 18:35	10/13/17 22:14	1
Acenaphthylene	0.69	U	11	0.69	ug/L		10/10/17 18:35	10/13/17 22:14	1
2,6-Dinitrotoluene	0.94	U	2.1	0.94	ug/L		10/10/17 18:35	10/13/17 22:14	1
3-Nitroaniline	0.87	U	11	0.87	ug/L		10/10/17 18:35	10/13/17 22:14	1
Acenaphthene	0.94	U	11	0.94	ug/L		10/10/17 18:35	10/13/17 22:14	1
Dibenzofuran	0.90	U	11	0.90	ug/L		10/10/17 18:35	10/13/17 22:14	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/10/17 18:35	10/13/17 22:14	1
Diethyl phthalate	**4.2**	**J**	11	1.1	ug/L		10/10/17 18:35	10/13/17 22:14	1
4-Chlorophenyl phenyl ether	1.0	U	11	1.0	ug/L		10/10/17 18:35	10/13/17 22:14	1
Fluorene	0.85	U	11	0.85	ug/L		10/10/17 18:35	10/13/17 22:14	1
4-Nitroaniline	0.51	U	11	0.51	ug/L		10/10/17 18:35	10/13/17 22:14	1
N-Nitrosodiphenylamine	0.79	U	11	0.79	ug/L		10/10/17 18:35	10/13/17 22:14	1
4-Bromophenyl phenyl ether	1.1	U	11	1.1	ug/L		10/10/17 18:35	10/13/17 22:14	1
Phenanthrene	0.69	U	11	0.69	ug/L		10/10/17 18:35	10/13/17 22:14	1
Anthracene	0.61	U	11	0.61	ug/L		10/10/17 18:35	10/13/17 22:14	1
Carbazole	0.90	U	11	0.90	ug/L		10/10/17 18:35	10/13/17 22:14	1
Di-n-butyl phthalate	**4.2**	**J**	11	0.87	ug/L		10/10/17 18:35	10/13/17 22:14	1
Fluoranthene	0.77	U	11	0.77	ug/L		10/10/17 18:35	10/13/17 22:14	1
Pyrene	0.88	U	11	0.88	ug/L		10/10/17 18:35	10/13/17 22:14	1
Butyl benzyl phthalate	0.64	U	11	0.64	ug/L		10/10/17 18:35	10/13/17 22:14	1
3,3'-Dichlorobenzidine	1.1	U	11	1.1	ug/L		10/10/17 18:35	10/13/17 22:14	1
Chrysene	0.71	U	2.1	0.71	ug/L		10/10/17 18:35	10/13/17 22:14	1
Bis(2-ethylhexyl) phthalate	0.77	U	2.1	0.77	ug/L		10/10/17 18:35	10/13/17 22:14	1
Di-n-octyl phthalate	0.73	U	11	0.73	ug/L		10/10/17 18:35	10/13/17 22:14	1
Benzo[k]fluoranthene	0.19	U	1.1	0.19	ug/L		10/10/17 18:35	10/13/17 22:14	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.1	0.22	ug/L		10/10/17 18:35	10/13/17 22:14	1
Dibenz(a,h)anthracene	0.096	U	1.1	0.096	ug/L		10/10/17 18:35	10/13/17 22:14	1
Benzo[g,h,i]perylene	0.80	U	11	0.80	ug/L		10/10/17 18:35	10/13/17 22:14	1

Client Sample ID: PZ-11-EXT

Lab Sample ID: 460-142549-5

Date Collected: 10/06/17 13:40
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diphenyl ether	42		11	0.53	ug/L		10/10/17 18:35	10/13/17 22:14	1
n,n'-Dimethylaniline	0.81	U	1.1	0.81	ug/L		10/10/17 18:35	10/13/17 22:14	1
Caprolactam	1.1	U	11	1.1	ug/L		10/10/17 18:35	10/13/17 22:14	1
bis (2-chloroisopropyl) ether	0.99	U	11	0.99	ug/L		10/10/17 18:35	10/13/17 22:14	1
Bisphenol-A	95		11	1.1	ug/L		10/10/17 18:35	10/13/17 22:14	1
N-Methylaniline	0.93	~~U~~ UJ	5.3	0.93	ug/L		10/10/17 18:35	10/13/17 22:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, (1-methylethyl)-	*58*	*J N*	*ug/L*		*3.84*	*98-82-8*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, propyl-	*120*	*J N*	*ug/L*		*4.10*	*103-65-1*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1,2,4-trimethyl-	*160*	*J N*	*ug/L*		*4.17*	*95-63-6*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1-ethyl-3-methyl-	*110*	*J N*	*ug/L*		*4.20*	*620-14-4*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1,3,5-trimethyl-	*190*	*J N*	*ug/L*		*4.24*	*108-67-8*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1-ethyl-2-methyl-	*23*	*J N*	*ug/L*		*4.31*	*611-14-3*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Unknown	*34*	*J*	*ug/L*		*4.36*		*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1,2,3-trimethyl-	*470*	*J N*	*ug/L*		*4.46*	*526-73-8*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1-ethyl-3-methyl-	*210*	*J N*	*ug/L*		*4.69*	*620-14-4*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Indane	*140*	*J N*	*ug/L*		*4.80*	*496-11-7*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 2-ethyl-1,4-dimethyl-	*37*	*J N*	*ug/L*		*4.93*	*1758-88-9*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Unknown	*33*	*J*	*ug/L*		*5.07*		*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1,2,4,5-tetramethyl-	*23*	*J N*	*ug/L*		*5.40*	*95-93-2*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Benzene, 1-methyl-4-(2-propenyl)-	*18*	*J N*	*ug/L*		*5.64*	*3333-13-9*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Unknown	*34*	*J*	*ug/L*		*7.38*		*10/10/17 18:35*	*10/13/17 22:14*	*1*
5-Methyl-2,4-diisopropylphenol	*24*	*J N*	*ug/L*		*7.54*	*40625-96-5*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Unknown	*19*	*J*	*ug/L*		*12.14*		*10/10/17 18:35*	*10/13/17 22:14*	*1*
Unknown	*140*	*J*	*ug/L*		*13.11*		*10/10/17 18:35*	*10/13/17 22:14*	*1*
Unknown	*24*	*J*	*ug/L*		*13.37*		*10/10/17 18:35*	*10/13/17 22:14*	*1*
Unknown	*21*	*J*	*ug/L*		*14.54*		*10/10/17 18:35*	*10/13/17 22:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*98*		*51 - 108*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Phenol-d5	*37*		*14 - 39*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
Terphenyl-d14	*71*		*40 - 148*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
2,4,6-Tribromophenol	*87*		*26 - 139*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
2-Fluorophenol	*27*		*25 - 58*	*10/10/17 18:35*	*10/13/17 22:14*	*1*
2-Fluorobiphenyl	*93*		*45 - 107*	*10/10/17 18:35*	*10/13/17 22:14*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	38900		150	92.1	ug/L		10/14/17 21:50	10/17/17 20:43	1
Manganese, Dissolved	139		15.0	3.1	ug/L		10/14/17 21:50	10/17/17 20:43	1

Client Sample ID: B-3D

Lab Sample ID: 460-142549-6

Date Collected: 10/06/17 14:45
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 01:57	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 01:57	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: B-3D

Lab Sample ID: 460-142549-6

Date Collected: 10/06/17 14:45
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 01:57	1
Chloroethane	1.4		1.0	0.37	ug/L			10/16/17 01:57	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 01:57	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 01:57	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 01:57	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 01:57	1
1,1-Dichloroethane	0.59	J	1.0	0.24	ug/L			10/16/17 01:57	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 01:57	1
cis-1,2-Dichloroethene	1.2		1.0	0.26	ug/L			10/16/17 01:57	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 01:57	1
1,2-Dichloroethane	78		1.0	0.25	ug/L			10/16/17 01:57	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 01:57	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 01:57	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 01:57	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 01:57	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 01:57	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 01:57	1
Trichloroethene	1.6		1.0	0.22	ug/L			10/16/17 01:57	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 01:57	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 01:57	1
Benzene	12		1.0	0.090	ug/L			10/16/17 01:57	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 01:57	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 01:57	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 01:57	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 01:57	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 01:57	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 01:57	1
Toluene	0.25	U	1.0	0.25	ug/L			10/16/17 01:57	1
Chlorobenzene	18		1.0	0.24	ug/L			10/16/17 01:57	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/17 01:57	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 01:57	1
Xylenes, Total	4.2		2.0	0.28	ug/L			10/16/17 01:57	1
Ethyl ether	2.1		1.0	0.11	ug/L			10/16/17 01:57	1
MTBE	0.13	U	1.0	0.13	ug/L			10/16/17 01:57	1
Tetrahydrofuran	9.8		2.0	0.36	ug/L			10/16/17 01:57	1
Cyclohexane	1.1		1.0	0.26	ug/L			10/16/17 01:57	1
1,4-Dioxane	730		50	8.7	ug/L			10/16/17 01:57	1
1,2,4-Trimethylbenzene	1.3		1.0	0.23	ug/L			10/16/17 01:57	1
1,3,5-Trimethylbenzene	0.48	J	1.0	0.25	ug/L			10/16/17 01:57	1
Isopropylbenzene	3.5		1.0	0.32	ug/L			10/16/17 01:57	1
N-Propylbenzene	0.84	J	1.0	0.29	ug/L			10/16/17 01:57	1
Methylcyclohexane	1.8		1.0	0.22	ug/L			10/16/17 01:57	1
Indane	8.0		1.0	0.12	ug/L			10/16/17 01:57	1
Dichlorofluoromethane	7.0		1.0	0.21	ug/L			10/16/17 01:57	1
1,2,3-Trimethylbenzene	0.68	J	1.0	0.11	ug/L			10/16/17 01:57	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*6.0*	*J*	*ug/L*		*12.20*			*10/16/17 01:57*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: B-3D

Lab Sample ID: 460-142549-6

Date Collected: 10/06/17 14:45
Date Received: 10/06/17 20:10

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*74 - 132*		*10/16/17 01:57*	*1*
Bromofluorobenzene	*87*		*77 - 124*		*10/16/17 01:57*	*1*
Toluene-d8 (Surr)	*110*		*80 - 120*		*10/16/17 01:57*	*1*
Dibromofluoromethane (Surr)	*111*		*72 - 131*		*10/16/17 01:57*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.051	0.018	ug/L		10/10/17 18:35	10/12/17 02:26	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		10/10/17 18:35	10/12/17 02:26	1
Benzo[b]fluoranthene	0.019	U	0.051	0.019	ug/L		10/10/17 18:35	10/12/17 02:26	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/10/17 18:35	10/12/17 02:26	1
Pentachlorophenol	0.032	U	0.20	0.032	ug/L		10/10/17 18:35	10/12/17 02:26	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/10/17 18:35	10/13/17 22:36	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 22:36	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/10/17 18:35	10/13/17 22:36	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/10/17 18:35	10/13/17 22:36	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/10/17 18:35	10/13/17 22:36	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/10/17 18:35	10/13/17 22:36	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/10/17 18:35	10/13/17 22:36	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/10/17 18:35	10/13/17 22:36	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/10/17 18:35	10/13/17 22:36	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/10/17 18:35	10/13/17 22:36	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/10/17 18:35	10/13/17 22:36	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/10/17 18:35	10/13/17 22:36	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/10/17 18:35	10/13/17 22:36	1
Bis(2-chloroethyl)ether	**86**		1.0	0.12	ug/L		10/10/17 18:35	10/13/17 22:36	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 22:36	1
1,4-Dichlorobenzene	**3.0**	**J**	10	0.67	ug/L		10/10/17 18:35	10/13/17 22:36	1
1,2-Dichlorobenzene	**3.0**	**J**	10	0.85	ug/L		10/10/17 18:35	10/13/17 22:36	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/10/17 18:35	10/13/17 22:36	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/13/17 22:36	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/10/17 18:35	10/13/17 22:36	1
Isophorone	0.68	U	10	0.68	ug/L		10/10/17 18:35	10/13/17 22:36	1
Bis(2-chloroethoxy)methane	0.70	U *	10	0.70	ug/L		10/10/17 18:35	10/13/17 22:36	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/10/17 18:35	10/13/17 22:36	1
Naphthalene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 22:36	1
4-Chloroaniline	0.74	U	10	0.74	ug/L		10/10/17 18:35	10/13/17 22:36	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/13/17 22:36	1
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/13/17 22:36	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/13/17 22:36	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/10/17 18:35	10/13/17 22:36	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 22:36	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 22:36	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 22:36	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/10/17 18:35	10/13/17 22:36	1
3-Nitroaniline	0.84	U	10	0.84	ug/L		10/10/17 18:35	10/13/17 22:36	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/10/17 18:35	10/13/17 22:36	1

Client Sample ID: B-3D

Lab Sample ID: 460-142549-6

Date Collected: 10/06/17 14:45
Date Received: 10/06/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/13/17 22:36	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/10/17 18:35	10/13/17 22:36	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 22:36	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/10/17 18:35	10/13/17 22:36	1
Fluorene	0.82	U	10	0.82	ug/L		10/10/17 18:35	10/13/17 22:36	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/10/17 18:35	10/13/17 22:36	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/10/17 18:35	10/13/17 22:36	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/10/17 18:35	10/13/17 22:36	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/10/17 18:35	10/13/17 22:36	1
Anthracene	0.58	U	10	0.58	ug/L		10/10/17 18:35	10/13/17 22:36	1
Carbazole	0.87	U	10	0.87	ug/L		10/10/17 18:35	10/13/17 22:36	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/17 18:35	10/13/17 22:36	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/10/17 18:35	10/13/17 22:36	1
Pyrene	0.85	U	10	0.85	ug/L		10/10/17 18:35	10/13/17 22:36	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/10/17 18:35	10/13/17 22:36	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 22:36	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/10/17 18:35	10/13/17 22:36	1
Bis(2-ethylhexyl) phthalate	**16**		2.0	0.73	ug/L		10/10/17 18:35	10/13/17 22:36	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/10/17 18:35	10/13/17 22:36	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/10/17 18:35	10/13/17 22:36	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/10/17 18:35	10/13/17 22:36	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/10/17 18:35	10/13/17 22:36	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/10/17 18:35	10/13/17 22:36	1
Diphenyl ether	**4.6**	J	10	0.51	ug/L		10/10/17 18:35	10/13/17 22:36	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/10/17 18:35	10/13/17 22:36	1
Caprolactam	1.1	U	10	1.1	ug/L		10/10/17 18:35	10/13/17 22:36	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/10/17 18:35	10/13/17 22:36	1
Bisphenol-A	**52**	J+	10	1.0	ug/L		10/10/17 18:35	10/13/17 22:36	1
N-Methylaniline	**1.5**	~~J+~~ J-	5.1	0.89	ug/L		10/10/17 18:35	10/13/17 22:36	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*82*	*J*	*ug/L*		*6.33*		*10/10/17 18:35*	*10/13/17 22:36*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	*13*	*J N*	*ug/L*		*6.94*	*827-16-7*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
Unknown	*120*	*J*	*ug/L*		*7.39*		*10/10/17 18:35*	*10/13/17 22:36*	*1*
Unknown	*12*	*J*	*ug/L*		*7.49*		*10/10/17 18:35*	*10/13/17 22:36*	*1*
Unknown	*14*	*J*	*ug/L*		*7.70*		*10/10/17 18:35*	*10/13/17 22:36*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-tri-2-propenyl-	*10*	*J N*	*ug/L*		*8.37*	*1025-15-6*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
Urea, N,N'-dimethyl-N,N'-diphenyl-	*7.2*	*J N*	*ug/L*		*9.25*	*611-92-7*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
Unknown	*11*	*J*	*ug/L*		*12.17*		*10/10/17 18:35*	*10/13/17 22:36*	*1*
Unknown	*7.6*	*J*	*ug/L*		*13.39*		*10/10/17 18:35*	*10/13/17 22:36*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*107*		*51 - 108*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
Phenol-d5	*40*	*X*	*14 - 39*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
Terphenyl-d14	*83*		*40 - 148*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
2,4,6-Tribromophenol	*90*		*26 - 139*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
2-Fluorophenol	*57*		*25 - 58*	*10/10/17 18:35*	*10/13/17 22:36*	*1*
2-Fluorobiphenyl	*100*		*45 - 107*	*10/10/17 18:35*	*10/13/17 22:36*	*1*

Client Sample ID: B-3D

Lab Sample ID: 460-142549-6
Date Collected: 10/06/17 14:45
Matrix: Water
Date Received: 10/06/17 20:10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7750		150	92.1	ug/L		10/14/17 21:50	10/17/17 20:47	1
Manganese, Dissolved	13100		15.0	3.1	ug/L		10/14/17 21:50	10/17/17 20:47	1

Client Sample ID: TBGW_100917

Lab Sample ID: 460-142764-1
Date Collected: 10/09/17 00:00
Matrix: Water
Date Received: 10/09/17 20:10

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/14/17 12:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 133*		*10/14/17 12:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 144*		*10/14/17 12:39*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 00:44	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 00:44	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 00:44	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 00:44	1
Methylene Chloride	0.26	J	1.0	0.21	ug/L			10/16/17 00:44	1
Acetone	7.4		5.0	1.1	ug/L			10/16/17 00:44	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 00:44	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 00:44	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/16/17 00:44	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 00:44	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/17 00:44	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 00:44	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/16/17 00:44	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 00:44	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 00:44	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 00:44	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 00:44	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 00:44	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 00:44	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/16/17 00:44	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 00:44	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 00:44	1
Benzene	0.090	U	1.0	0.090	ug/L			10/16/17 00:44	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 00:44	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 00:44	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 00:44	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 00:44	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 00:44	1
1,1,2,2-Tetrachloroethane	0.19	U-*	1.0	0.19	ug/L			10/16/17 00:44	1
Toluene	0.25	U	1.0	0.25	ug/L			10/16/17 00:44	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/16/17 00:44	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/17 00:44	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 00:44	1

Client Sample ID: TBGW_100917

Lab Sample ID: 460-142764-1

Date Collected: 10/09/17 00:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/16/17 00:44	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/16/17 00:44	1
MTBE	0.13	U	1.0	0.13	ug/L			10/16/17 00:44	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/16/17 00:44	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/16/17 00:44	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/16/17 00:44	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/16/17 00:44	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/16/17 00:44	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/16/17 00:44	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/16/17 00:44	1
Indane	0.12	U	1.0	0.12	ug/L			10/16/17 00:44	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/16/17 00:44	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/16/17 00:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/17 00:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*74 - 132*		*10/16/17 00:44*	*1*
Bromofluorobenzene	*83*		*77 - 124*		*10/16/17 00:44*	*1*
Toluene-d8 (Surr)	*110*		*80 - 120*		*10/16/17 00:44*	*1*
Dibromofluoromethane (Surr)	*116*		*72 - 131*		*10/16/17 00:44*	*1*

Client Sample ID: C-18D

Lab Sample ID: 460-142764-2

Date Collected: 10/09/17 10:20
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	120		2.0	1.0	ug/L			10/16/17 01:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 133*		*10/16/17 01:17*	*5*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 144*		*10/16/17 01:17*	*5*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	2.2	U	10	2.2	ug/L			10/16/17 17:13	10
Bromomethane	1.8	U	10	1.8	ug/L			10/16/17 17:13	10
Vinyl chloride	2.6	J	10	0.60	ug/L			10/16/17 17:13	10
Chloroethane	3.7	U	10	3.7	ug/L			10/16/17 17:13	10
Methylene Chloride	2.1	U	10	2.1	ug/L			10/16/17 17:13	10
Acetone	11	U	50	11	ug/L			10/16/17 17:13	10
Carbon disulfide	2.2	U	10	2.2	ug/L			10/16/17 17:13	10
1,1-Dichloroethene	3.4	U	10	3.4	ug/L			10/16/17 17:13	10
1,1-Dichloroethane	2.4	U	10	2.4	ug/L			10/16/17 17:13	10
trans-1,2-Dichloroethene	1.8	U	10	1.8	ug/L			10/16/17 17:13	10
cis-1,2-Dichloroethene	33		10	2.6	ug/L			10/16/17 17:13	10
Chloroform	2.2	U	10	2.2	ug/L			10/16/17 17:13	10
1,2-Dichloroethane	2.5	U	10	2.5	ug/L			10/16/17 17:13	10
2-Butanone	22	U	50	22	ug/L			10/16/17 17:13	10

Client Sample ID: C-18D

Lab Sample ID: 460-142764-2

Date Collected: 10/09/17 10:20
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.8	U	10	2.8	ug/L			10/16/17 17:13	10
Carbon tetrachloride	3.3	U	10	3.3	ug/L			10/16/17 17:13	10
Bromodichloromethane	1.5	U	10	1.5	ug/L			10/16/17 17:13	10
1,2-Dichloropropane	1.8	U	10	1.8	ug/L			10/16/17 17:13	10
cis-1,3-Dichloropropene	1.6	U	10	1.6	ug/L			10/16/17 17:13	10
Trichloroethene	2.2	U	10	2.2	ug/L			10/16/17 17:13	10
Dibromochloromethane	2.2	U	10	2.2	ug/L			10/16/17 17:13	10
1,1,2-Trichloroethane	0.80	U	10	0.80	ug/L			10/16/17 17:13	10
Benzene	**540**		10	0.90	ug/L			10/16/17 17:13	10
trans-1,3-Dichloropropene	1.9	U	10	1.9	ug/L			10/16/17 17:13	10
Bromoform	1.8	U	10	1.8	ug/L			10/16/17 17:13	10
4-Methyl-2-pentanone	6.3	U	50	6.3	ug/L			10/16/17 17:13	10
2-Hexanone	7.2	U	50	7.2	ug/L			10/16/17 17:13	10
Tetrachloroethene	1.2	U	10	1.2	ug/L			10/16/17 17:13	10
1,1,2,2-Tetrachloroethane	1.9	U *	10	1.9	ug/L			10/16/17 17:13	10
Toluene	**3500**		10	2.5	ug/L			10/16/17 17:13	10
Chlorobenzene	**31**		10	2.4	ug/L			10/16/17 17:13	10
Ethylbenzene	**130**		10	3.0	ug/L			10/16/17 17:13	10
Styrene	1.7	U	10	1.7	ug/L			10/16/17 17:13	10
Xylenes, Total	**450**		20	2.8	ug/L			10/16/17 17:13	10
Ethyl ether	1.1	U	10	1.1	ug/L			10/16/17 17:13	10
MTBE	1.3	U	10	1.3	ug/L			10/16/17 17:13	10
Tetrahydrofuran	3.6	U	20	3.6	ug/L			10/16/17 17:13	10
Cyclohexane	2.6	U	10	2.6	ug/L			10/16/17 17:13	10
1,2,4-Trimethylbenzene	**51**		10	2.3	ug/L			10/16/17 17:13	10
1,3,5-Trimethylbenzene	**17**		10	2.5	ug/L			10/16/17 17:13	10
Isopropylbenzene	**5.8**	J	10	3.2	ug/L			10/16/17 17:13	10
N-Propylbenzene	**10**		10	2.9	ug/L			10/16/17 17:13	10
Methylcyclohexane	**5.8**	J	10	2.2	ug/L			10/16/17 17:13	10
Indane	**36**		10	1.2	ug/L			10/16/17 17:13	10
Dichlorofluoromethane	2.1	U	10	2.1	ug/L			10/16/17 17:13	10
1,2,3-Trimethylbenzene	**20**		10	1.1	ug/L			10/16/17 17:13	10

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/17 17:13*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/16/17 17:13*	*10*
Bromofluorobenzene	*90*		*77 - 124*		*10/16/17 17:13*	*10*
Toluene-d8 (Surr)	*113*		*80 - 120*		*10/16/17 17:13*	*10*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/16/17 17:13*	*10*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 16:21	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 16:21	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 16:21	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 16:21	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 16:21	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: C-18D

Lab Sample ID: 460-142764-2

Date Collected: 10/09/17 10:20
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	8.6	J	10	0.43	ug/L		10/15/17 07:37	10/16/17 13:48	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 13:48	1
2-Methylphenol	55		10	1.3	ug/L		10/15/17 07:37	10/16/17 13:48	1
4-Methylphenol	41		10	0.91	ug/L		10/15/17 07:37	10/16/17 13:48	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 13:48	1
2,4-Dimethylphenol	3.9	J	10	0.95	ug/L		10/15/17 07:37	10/16/17 13:48	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 13:48	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 13:48	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 13:48	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 13:48	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 13:48	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 13:48	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 13:48	1
Bis(2-chloroethyl)ether	18		1.0	0.13	ug/L		10/15/17 07:37	10/16/17 13:48	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 13:48	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 13:48	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 13:48	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 13:48	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 13:48	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 13:48	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 13:48	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 13:48	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 13:48	1
Naphthalene	2.7	J	10	0.83	ug/L		10/15/17 07:37	10/16/17 13:48	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 13:48	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 13:48	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 13:48	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 13:48	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 13:48	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 13:48	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 13:48	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 13:48	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 13:48	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 13:48	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 13:48	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 13:48	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 13:48	1
Diethyl phthalate	12		10	1.0	ug/L		10/15/17 07:37	10/16/17 13:48	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 13:48	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 13:48	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 13:48	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 13:48	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 13:48	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 13:48	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 13:48	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 13:48	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 13:48	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 13:48	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 13:48	1

Client Sample ID: C-18D

Lab Sample ID: 460-142764-2

Date Collected: 10/09/17 10:20
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 13:48	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 13:48	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 13:48	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 13:48	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 13:48	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 13:48	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 13:48	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 13:48	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 13:48	1
Diphenyl ether	**9.1**	J	10	0.52	ug/L		10/15/17 07:37	10/16/17 13:48	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 13:48	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 13:48	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 13:48	1
Bisphenol-A	**110**		10	1.1	ug/L		10/15/17 07:37	10/16/17 13:48	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 13:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*8.4*	*J N*	*ug/L*		*1.75*	*123-91-1*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Benzene, 1,3-dimethyl-	*100*	*J N*	*ug/L*		*3.28*	*108-38-3*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Benzene, 1-ethyl-2-methyl-	*35*	*J N*	*ug/L*		*3.86*	*611-14-3*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
4-Heptanone, 2,6-dimethyl-	*34*	*J N*	*ug/L*		*3.90*	*108-83-8*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Benzene, 1,3,5-trimethyl-	*17*	*J N*	*ug/L*		*3.93*	*108-67-8*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Benzene, 1-ethyl-3-methyl-	*17*	*J N*	*ug/L*		*4.01*	*620-14-4*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Benzene, 1,2,3-trimethyl-	*52*	*J N*	*ug/L*		*4.13*	*526-73-8*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Benzene, 1-ethyl-4-methyl-	*22*	*J N*	*ug/L*		*4.35*	*622-96-8*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Indane	*35*	*J N*	*ug/L*		*4.47*	*496-11-7*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Hexanoic acid, 2-ethyl-	*9.3*	*J N*	*ug/L*		*4.97*	*149-57-5*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Unknown	*19*	*J*	*ug/L*		*5.01*		*10/15/17 07:37*	*10/16/17 13:48*	*1*
Unknown	*11*	*J*	*ug/L*		*5.07*		*10/15/17 07:37*	*10/16/17 13:48*	*1*
Phenol, 2-ethyl-	*16*	*J N*	*ug/L*		*5.12*	*90-00-6*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
2-Isopropoxyphenol	*7.5*	*J N*	*ug/L*		*5.94*	*4812-20-8*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Phenol, p-tert-butyl-	*11*	*J N*	*ug/L*		*6.08*	*98-54-4*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Unknown	*43*	*J*	*ug/L*		*6.95*		*10/15/17 07:37*	*10/16/17 13:48*	*1*
Unknown	*9.0*	*J*	*ug/L*		*7.25*		*10/15/17 07:37*	*10/16/17 13:48*	*1*
Unknown	*14*	*J*	*ug/L*		*11.08*		*10/15/17 07:37*	*10/16/17 13:48*	*1*
Unknown	*16*	*J*	*ug/L*		*12.13*		*10/15/17 07:37*	*10/16/17 13:48*	*1*
Unknown	*64*	*J*	*ug/L*		*12.31*		*10/15/17 07:37*	*10/16/17 13:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*107*		*51 - 108*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Phenol-d5	*36*		*14 - 39*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
Terphenyl-d14	*98*		*40 - 148*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
2,4,6-Tribromophenol	*132*		*26 - 139*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
2-Fluorophenol	*52*		*25 - 58*	*10/15/17 07:37*	*10/16/17 13:48*	*1*
2-Fluorobiphenyl	*92*		*45 - 107*	*10/15/17 07:37*	*10/16/17 13:48*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**39800**		150	92.1	ug/L		10/16/17 09:51	10/17/17 20:29	1
Manganese, Dissolved	**5260**		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 20:29	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: C-30

Lab Sample ID: 460-142764-3

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	200		4.0	2.0	ug/L			10/16/17 01:41	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*106*		*72 - 133*		*10/16/17 01:41*	*10*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 144*		*10/16/17 01:41*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	2.2	U	10	2.2	ug/L			10/16/17 16:49	10
Bromomethane	1.8	U	10	1.8	ug/L			10/16/17 16:49	10
Vinyl chloride	2.7	J	10	0.60	ug/L			10/16/17 16:49	10
Chloroethane	3.7	U	10	3.7	ug/L			10/16/17 16:49	10
Methylene Chloride	2.1	U	10	2.1	ug/L			10/16/17 16:49	10
Acetone	11	U	50	11	ug/L			10/16/17 16:49	10
Carbon disulfide	2.2	U	10	2.2	ug/L			10/16/17 16:49	10
1,1-Dichloroethene	3.4	U	10	3.4	ug/L			10/16/17 16:49	10
1,1-Dichloroethane	3.0	J	10	2.4	ug/L			10/16/17 16:49	10
trans-1,2-Dichloroethene	1.8	U	10	1.8	ug/L			10/16/17 16:49	10
cis-1,2-Dichloroethene	79		10	2.6	ug/L			10/16/17 16:49	10
Chloroform	2.2	U	10	2.2	ug/L			10/16/17 16:49	10
1,2-Dichloroethane	12		10	2.5	ug/L			10/16/17 16:49	10
2-Butanone	22	U	50	22	ug/L			10/16/17 16:49	10
1,1,1-Trichloroethane	2.8	U	10	2.8	ug/L			10/16/17 16:49	10
Carbon tetrachloride	3.3	U	10	3.3	ug/L			10/16/17 16:49	10
Bromodichloromethane	1.5	U	10	1.5	ug/L			10/16/17 16:49	10
1,2-Dichloropropane	1.8	U	10	1.8	ug/L			10/16/17 16:49	10
cis-1,3-Dichloropropene	1.6	U	10	1.6	ug/L			10/16/17 16:49	10
Trichloroethene	2.2	U	10	2.2	ug/L			10/16/17 16:49	10
Dibromochloromethane	2.2	U	10	2.2	ug/L			10/16/17 16:49	10
1,1,2-Trichloroethane	0.80	U	10	0.80	ug/L			10/16/17 16:49	10
Benzene	360		10	0.90	ug/L			10/16/17 16:49	10
trans-1,3-Dichloropropene	1.9	U	10	1.9	ug/L			10/16/17 16:49	10
Bromoform	1.8	U	10	1.8	ug/L			10/16/17 16:49	10
4-Methyl-2-pentanone	6.3	U	50	6.3	ug/L			10/16/17 16:49	10
2-Hexanone	7.2	U	50	7.2	ug/L			10/16/17 16:49	10
Tetrachloroethene	1.2	U	10	1.2	ug/L			10/16/17 16:49	10
1,1,2,2-Tetrachloroethane	1.9	U-*	10	1.9	ug/L			10/16/17 16:49	10
Toluene	2700		10	2.5	ug/L			10/16/17 16:49	10
Chlorobenzene	36		10	2.4	ug/L			10/16/17 16:49	10
Ethylbenzene	63		10	3.0	ug/L			10/16/17 16:49	10
Styrene	1.7	U	10	1.7	ug/L			10/16/17 16:49	10
Xylenes, Total	470		20	2.8	ug/L			10/16/17 16:49	10
Ethyl ether	1.1	U	10	1.1	ug/L			10/16/17 16:49	10
MTBE	1.3	U	10	1.3	ug/L			10/16/17 16:49	10
Tetrahydrofuran	3.6	U	20	3.6	ug/L			10/16/17 16:49	10
Cyclohexane	2.6	U	10	2.6	ug/L			10/16/17 16:49	10
1,2,4-Trimethylbenzene	58		10	2.3	ug/L			10/16/17 16:49	10
1,3,5-Trimethylbenzene	21		10	2.5	ug/L			10/16/17 16:49	10
Isopropylbenzene	3.2	U	10	3.2	ug/L			10/16/17 16:49	10
N-Propylbenzene	5.0	J	10	2.9	ug/L			10/16/17 16:49	10

Client Sample ID: C-30

Lab Sample ID: 460-142764-3

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	2.2	U	10	2.2	ug/L			10/16/17 16:49	10
Indane	15		10	1.2	ug/L			10/16/17 16:49	10
Dichlorofluoromethane	2.1	U	10	2.1	ug/L			10/16/17 16:49	10
1,2,3-Trimethylbenzene	26		10	1.1	ug/L			10/16/17 16:49	10

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*54*	*J N*	*ug/L*		*9.69*	*620-14-4*		*10/16/17 16:49*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*74 - 132*		*10/16/17 16:49*	*10*
Bromofluorobenzene	*91*		*77 - 124*		*10/16/17 16:49*	*10*
Toluene-d8 (Surr)	*109*		*80 - 120*		*10/16/17 16:49*	*10*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/16/17 16:49*	*10*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 16:44	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 16:44	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 16:44	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 16:44	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 16:44	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	4.2	J	10	0.43	ug/L		10/15/17 07:37	10/16/17 14:09	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 14:09	1
2-Methylphenol	19		10	1.3	ug/L		10/15/17 07:37	10/16/17 14:09	1
4-Methylphenol	18		10	0.91	ug/L		10/15/17 07:37	10/16/17 14:09	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 14:09	1
2,4-Dimethylphenol	4.0	J	10	0.95	ug/L		10/15/17 07:37	10/16/17 14:09	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 14:09	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 14:09	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 14:09	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 14:09	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 14:09	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 14:09	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 14:09	1
Bis(2-chloroethyl)ether	12		1.0	0.13	ug/L		10/15/17 07:37	10/16/17 14:09	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 14:09	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 14:09	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 14:09	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 14:09	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 14:09	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 14:09	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 14:09	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 14:09	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 14:09	1
Naphthalene	2.3	J	10	0.83	ug/L		10/15/17 07:37	10/16/17 14:09	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 14:09	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 14:09	1

Client Sample ID: C-30

Lab Sample ID: 460-142764-3

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 14:09	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 14:09	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 14:09	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 14:09	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 14:09	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 14:09	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 14:09	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 14:09	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 14:09	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 14:09	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 14:09	1
Diethyl phthalate	**6.2**	**J**	10	1.0	ug/L		10/15/17 07:37	10/16/17 14:09	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 14:09	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 14:09	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 14:09	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 14:09	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 14:09	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 14:09	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 14:09	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 14:09	1
Di-n-butyl phthalate	**1.1**	**J**	10	0.85	ug/L		10/15/17 07:37	10/16/17 14:09	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 14:09	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 14:09	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 14:09	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 14:09	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 14:09	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 14:09	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 14:09	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 14:09	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 14:09	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 14:09	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 14:09	1
Diphenyl ether	**1.6**	**J**	10	0.52	ug/L		10/15/17 07:37	10/16/17 14:09	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 14:09	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 14:09	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 14:09	1
Bisphenol-A	**69**		10	1.1	ug/L		10/15/17 07:37	10/16/17 14:09	1
N-Methylaniline	0.91	U ~~J~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 14:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*12*	*J N*	*ug/L*		*1.75*	*123-91-1*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Benzene, 1-ethyl-2-methyl-	*35*	*J N*	*ug/L*		*3.86*	*611-14-3*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Benzene, 1,2,4-trimethyl-	*19*	*J N*	*ug/L*		*3.89*	*95-63-6*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Benzene, 1,3,5-trimethyl-	*21*	*J N*	*ug/L*		*3.93*	*108-67-8*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Benzene, 1-ethyl-4-methyl-	*20*	*J N*	*ug/L*		*4.00*	*622-96-8*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Benzene, 1,2,3-trimethyl-	*55*	*J N*	*ug/L*		*4.13*	*526-73-8*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Benzene, 1-ethyl-3-methyl-	*25*	*J N*	*ug/L*		*4.35*	*620-14-4*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Indane	*15*	*J N*	*ug/L*		*4.47*	*496-11-7*	*10/15/17 07:37*	*10/16/17 14:09*	*1*
Unknown	*14*	*J*	*ug/L*		*4.73*		*10/15/17 07:37*	*10/16/17 14:09*	*1*
Unknown	*10*	*J*	*ug/L*		*4.98*		*10/15/17 07:37*	*10/16/17 14:09*	*1*

Client Sample ID: C-30

Lab Sample ID: 460-142764-3

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	27	J	ug/L		5.02		10/15/17 07:37	10/16/17 14:09	1
Unknown	15	J	ug/L		5.08		10/15/17 07:37	10/16/17 14:09	1
Unknown	8.8	J	ug/L		5.10		10/15/17 07:37	10/16/17 14:09	1
3-Methylbenzyl alcohol	15	J N	ug/L		5.14	587-03-1	10/15/17 07:37	10/16/17 14:09	1
Phenol, p-tert-butyl-	12	J N	ug/L		6.08	98-54-4	10/15/17 07:37	10/16/17 14:09	1
Unknown	34	J	ug/L		6.95		10/15/17 07:37	10/16/17 14:09	1
Unknown	19	J	ug/L		7.06		10/15/17 07:37	10/16/17 14:09	1
Unknown	8.4	J	ug/L		7.20		10/15/17 07:37	10/16/17 14:09	1
Unknown	17	J	ug/L		7.25		10/15/17 07:37	10/16/17 14:09	1
Unknown	19	J	ug/L		12.30		10/15/17 07:37	10/16/17 14:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	105		51 - 108	10/15/17 07:37	10/16/17 14:09	1
Phenol-d5	37		14 - 39	10/15/17 07:37	10/16/17 14:09	1
Terphenyl-d14	103		40 - 148	10/15/17 07:37	10/16/17 14:09	1
2,4,6-Tribromophenol	128		26 - 139	10/15/17 07:37	10/16/17 14:09	1
2-Fluorophenol	52		25 - 58	10/15/17 07:37	10/16/17 14:09	1
2-Fluorobiphenyl	86		45 - 107	10/15/17 07:37	10/16/17 14:09	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	47800		150	92.1	ug/L		10/16/17 09:51	10/17/17 19:48	1
Manganese, Dissolved	5270		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 19:48	1

Client Sample ID: DDA-02

Lab Sample ID: 460-142764-4

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	7.5		0.40	0.20	ug/L			10/15/17 01:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	105		72 - 133		10/15/17 01:30	1
1,2-Dichloroethane-d4 (Surr)	110		71 - 144		10/15/17 01:30	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 03:09	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 03:09	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 03:09	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 03:09	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 03:09	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 03:09	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 03:09	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 03:09	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/16/17 03:09	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 03:09	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/17 03:09	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 03:09	1

Client Sample ID: DDA-02

Lab Sample ID: 460-142764-4

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/16/17 03:09	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 03:09	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 03:09	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 03:09	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 03:09	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 03:09	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 03:09	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/16/17 03:09	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 03:09	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 03:09	1
Benzene	0.090	U	1.0	0.090	ug/L			10/16/17 03:09	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 03:09	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 03:09	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 03:09	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 03:09	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 03:09	1
1,1,2,2-Tetrachloroethane	0.19	U*	1.0	0.19	ug/L			10/16/17 03:09	1
Toluene	0.25	U	1.0	0.25	ug/L			10/16/17 03:09	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/16/17 03:09	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/17 03:09	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 03:09	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/16/17 03:09	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/16/17 03:09	1
MTBE	1.2		1.0	0.13	ug/L			10/16/17 03:09	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/16/17 03:09	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/16/17 03:09	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/16/17 03:09	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/16/17 03:09	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/16/17 03:09	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/16/17 03:09	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/16/17 03:09	1
Indane	0.12	U	1.0	0.12	ug/L			10/16/17 03:09	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/16/17 03:09	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/16/17 03:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/17 03:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*74 - 132*		*10/16/17 03:09*	*1*
Bromofluorobenzene	*80*		*77 - 124*		*10/16/17 03:09*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*10/16/17 03:09*	*1*
Dibromofluoromethane (Surr)	*116*		*72 - 131*		*10/16/17 03:09*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/15/17 07:37	10/16/17 17:07	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/15/17 07:37	10/16/17 17:07	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/15/17 07:37	10/16/17 17:07	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/15/17 07:37	10/16/17 17:07	1

Client Sample ID: DDA-02

Lab Sample ID: 460-142764-4

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/15/17 07:37	10/16/17 17:07	1
Bis(2-chloroethyl)ether	0.20		0.020	0.016	ug/L		10/15/17 07:37	10/16/17 17:07	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/15/17 07:37	10/16/17 14:29	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 14:29	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 14:29	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/15/17 07:37	10/16/17 14:29	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 14:29	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 14:29	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 14:29	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 14:29	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/15/17 07:37	10/16/17 14:29	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/15/17 07:37	10/16/17 14:29	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/15/17 07:37	10/16/17 14:29	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/15/17 07:37	10/16/17 14:29	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/15/17 07:37	10/16/17 14:29	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 14:29	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 14:29	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 14:29	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/15/17 07:37	10/16/17 14:29	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 14:29	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/15/17 07:37	10/16/17 14:29	1
Isophorone	0.67	U	10	0.67	ug/L		10/15/17 07:37	10/16/17 14:29	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 14:29	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/15/17 07:37	10/16/17 14:29	1
Naphthalene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 14:29	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/15/17 07:37	10/16/17 14:29	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 14:29	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 14:29	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 14:29	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 14:29	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 14:29	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/15/17 07:37	10/16/17 14:29	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 14:29	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/15/17 07:37	10/16/17 14:29	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 14:29	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 14:29	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 14:29	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/15/17 07:37	10/16/17 14:29	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 14:29	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/15/17 07:37	10/16/17 14:29	1
Fluorene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 14:29	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/15/17 07:37	10/16/17 14:29	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 14:29	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 14:29	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 14:29	1
Anthracene	0.57	U	10	0.57	ug/L		10/15/17 07:37	10/16/17 14:29	1
Carbazole	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 14:29	1

Client Sample ID: DDA-02

Lab Sample ID: 460-142764-4

Date Collected: 10/09/17 10:40
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 14:29	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 14:29	1
Pyrene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 14:29	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/15/17 07:37	10/16/17 14:29	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 14:29	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/15/17 07:37	10/16/17 14:29	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/15/17 07:37	10/16/17 14:29	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 14:29	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/15/17 07:37	10/16/17 14:29	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/15/17 07:37	10/16/17 14:29	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 14:29	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 14:29	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 14:29	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 14:29	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 14:29	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/15/17 07:37	10/16/17 14:29	1
Bisphenol-A	**8.8**	**J**	10	1.0	ug/L		10/15/17 07:37	10/16/17 14:29	1
N-Methylaniline	0.87	~~U~~ UJ	5.0	0.87	ug/L		10/15/17 07:37	10/16/17 14:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/15/17 07:37*	*10/16/17 14:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*108*		*51 - 108*	*10/15/17 07:37*	*10/16/17 14:29*	*1*
Phenol-d5	*36*		*14 - 39*	*10/15/17 07:37*	*10/16/17 14:29*	*1*
Terphenyl-d14	*102*		*40 - 148*	*10/15/17 07:37*	*10/16/17 14:29*	*1*
2,4,6-Tribromophenol	*126*		*26 - 139*	*10/15/17 07:37*	*10/16/17 14:29*	*1*
2-Fluorophenol	*52*		*25 - 58*	*10/15/17 07:37*	*10/16/17 14:29*	*1*
2-Fluorobiphenyl	*91*		*45 - 107*	*10/15/17 07:37*	*10/16/17 14:29*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**18600**		150	92.1	ug/L		10/16/17 09:51	10/17/17 20:33	1
Manganese, Dissolved	**1510**		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 20:33	1

Client Sample ID: C-19D

Lab Sample ID: 460-142764-5

Date Collected: 10/09/17 11:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 03:33	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 03:33	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 03:33	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 03:33	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 03:33	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 03:33	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 03:33	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 03:33	1
1,1-Dichloroethane	**0.25**	**J**	1.0	0.24	ug/L			10/16/17 03:33	1

Client Sample ID: C-19D

Lab Sample ID: 460-142764-5

Date Collected: 10/09/17 11:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 03:33	1
cis-1,2-Dichloroethene	**0.28**	J	1.0	0.26	ug/L			10/16/17 03:33	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 03:33	1
1,2-Dichloroethane	**0.43**	J	1.0	0.25	ug/L			10/16/17 03:33	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 03:33	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 03:33	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 03:33	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 03:33	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 03:33	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 03:33	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/16/17 03:33	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 03:33	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 03:33	1
Benzene	**20**		1.0	0.090	ug/L			10/16/17 03:33	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 03:33	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 03:33	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 03:33	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 03:33	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 03:33	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 03:33	1
Toluene	**0.27**	J	1.0	0.25	ug/L			10/16/17 03:33	1
Chlorobenzene	**6.2**		1.0	0.24	ug/L			10/16/17 03:33	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/17 03:33	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 03:33	1
Xylenes, Total	**1.1**	J	2.0	0.28	ug/L			10/16/17 03:33	1
Ethyl ether	**1.8**		1.0	0.11	ug/L			10/16/17 03:33	1
MTBE	0.13	U	1.0	0.13	ug/L			10/16/17 03:33	1
Tetrahydrofuran	**4.3**		2.0	0.36	ug/L			10/16/17 03:33	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/16/17 03:33	1
1,4-Dioxane	**210**		50	8.7	ug/L			10/16/17 03:33	1
1,2,4-Trimethylbenzene	**0.95**	J	1.0	0.23	ug/L			10/16/17 03:33	1
1,3,5-Trimethylbenzene	**0.46**	J	1.0	0.25	ug/L			10/16/17 03:33	1
Isopropylbenzene	**0.38**	J	1.0	0.32	ug/L			10/16/17 03:33	1
N-Propylbenzene	**0.43**	J	1.0	0.29	ug/L			10/16/17 03:33	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/16/17 03:33	1
Indane	**1.6**		1.0	0.12	ug/L			10/16/17 03:33	1
Dichlorofluoromethane	**0.36**	J	1.0	0.21	ug/L			10/16/17 03:33	1
1,2,3-Trimethylbenzene	**1.3**		1.0	0.11	ug/L			10/16/17 03:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/17 03:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/16/17 03:33*	*1*
Bromofluorobenzene	*80*		*77 - 124*		*10/16/17 03:33*	*1*
Toluene-d8 (Surr)	*110*		*80 - 120*		*10/16/17 03:33*	*1*
Dibromofluoromethane (Surr)	*112*		*72 - 131*		*10/16/17 03:33*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: C-19D

Lab Sample ID: 460-142764-5

Date Collected: 10/09/17 11:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 17:29	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 17:29	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 17:29	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 17:29	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 17:29	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.94	J J+	10	0.43	ug/L		10/15/17 07:37	10/16/17 15:51	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 15:51	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 15:51	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 15:51	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 15:51	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 15:51	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 15:51	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 15:51	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 15:51	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 15:51	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 15:51	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 15:51	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 15:51	1
Bis(2-chloroethyl)ether	17	J+	1.0	0.13	ug/L		10/15/17 07:37	10/16/17 15:51	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 15:51	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 15:51	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 15:51	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 15:51	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 15:51	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 15:51	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 15:51	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 15:51	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 15:51	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 15:51	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 15:51	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 15:51	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 15:51	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 15:51	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 15:51	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 15:51	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 15:51	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 15:51	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 15:51	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 15:51	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 15:51	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 15:51	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 15:51	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 15:51	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 15:51	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 15:51	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 15:51	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 15:51	1

Client Sample ID: C-19D

Lab Sample ID: 460-142764-5

Date Collected: 10/09/17 11:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 15:51	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 15:51	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 15:51	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 15:51	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 15:51	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 15:51	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 15:51	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 15:51	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 15:51	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 15:51	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 15:51	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 15:51	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 15:51	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 15:51	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 15:51	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 15:51	1
Diphenyl ether	**2.6**	**J J+**	10	0.52	ug/L		10/15/17 07:37	10/16/17 15:51	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 15:51	1
Caprolactam	**2.8**	**J J+**	10	1.1	ug/L		10/15/17 07:37	10/16/17 15:51	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 15:51	1
Bisphenol-A	**39**	**J+**	10	1.1	ug/L		10/15/17 07:37	10/16/17 15:51	1
N-Methylaniline	0.91	~~U *~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 15:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1-Hexanol, 2-ethyl-	*10*	*J N*	*ug/L*		*4.36*	*104-76-7*	*10/15/17 07:37*	*10/16/17 15:51*	*1*
Unknown	*46*	*J*	*ug/L*		*6.95*		*10/15/17 07:37*	*10/16/17 15:51*	*1*
Unknown	*58*	*J*	*ug/L*		*7.85*		*10/15/17 07:37*	*10/16/17 15:51*	*1*
Hexanedioic acid, mono(2-ethylhexyl)ester	*9.5*	*J N*	*ug/L*		*8.73*	*4337-65-9*	*10/15/17 07:37*	*10/16/17 15:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*112*	*X*	*51 - 108*	*10/15/17 07:37*	*10/16/17 15:51*	*1*
Phenol-d5	*37*		*14 - 39*	*10/15/17 07:37*	*10/16/17 15:51*	*1*
Terphenyl-d14	*111*		*40 - 148*	*10/15/17 07:37*	*10/16/17 15:51*	*1*
2,4,6-Tribromophenol	*140*	*X*	*26 - 139*	*10/15/17 07:37*	*10/16/17 15:51*	*1*
2-Fluorophenol	*54*		*25 - 58*	*10/15/17 07:37*	*10/16/17 15:51*	*1*
2-Fluorobiphenyl	*96*		*45 - 107*	*10/15/17 07:37*	*10/16/17 15:51*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**34000**		150	92.1	ug/L		10/16/17 09:51	10/17/17 20:37	1
Manganese, Dissolved	**7700**		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 20:37	1

Client Sample ID: BG-1

Lab Sample ID: 460-142764-6

Date Collected: 10/09/17 11:55
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	45		0.40	0.20	ug/L			10/14/17 17:21	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142534-1
SDG: 142534

Client Sample ID: BG-1

Lab Sample ID: 460-142764-6

Date Collected: 10/09/17 11:55
Date Received: 10/09/17 20:10

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	82		72 - 133		10/14/17 17:21	1
1,2-Dichloroethane-d4 (Surr)	129		71 - 144		10/14/17 17:21	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 03:57	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 03:57	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 03:57	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 03:57	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 03:57	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 03:57	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 03:57	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 03:57	1
1,1-Dichloroethane	**0.27**	J	1.0	0.24	ug/L			10/16/17 03:57	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 03:57	1
cis-1,2-Dichloroethene	**0.58**	J	1.0	0.26	ug/L			10/16/17 03:57	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 03:57	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/16/17 03:57	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 03:57	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 03:57	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 03:57	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 03:57	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 03:57	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 03:57	1
Trichloroethene	**0.27**	J	1.0	0.22	ug/L			10/16/17 03:57	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 03:57	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 03:57	1
Benzene	**19**		1.0	0.090	ug/L			10/16/17 03:57	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 03:57	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 03:57	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 03:57	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 03:57	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 03:57	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 03:57	1
Toluene	**19**		1.0	0.25	ug/L			10/16/17 03:57	1
Chlorobenzene	**2.7**		1.0	0.24	ug/L			10/16/17 03:57	1
Ethylbenzene	**3.1**		1.0	0.30	ug/L			10/16/17 03:57	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 03:57	1
Xylenes, Total	**59**		2.0	0.28	ug/L			10/16/17 03:57	1
Ethyl ether	**0.53**	J	1.0	0.11	ug/L			10/16/17 03:57	1
MTBE	**0.50**	J	1.0	0.13	ug/L			10/16/17 03:57	1
Tetrahydrofuran	**6.5**		2.0	0.36	ug/L			10/16/17 03:57	1
Cyclohexane	**5.4**		1.0	0.26	ug/L			10/16/17 03:57	1
1,2,4-Trimethylbenzene	**46**		1.0	0.23	ug/L			10/16/17 03:57	1
1,3,5-Trimethylbenzene	**20**		1.0	0.25	ug/L			10/16/17 03:57	1
Isopropylbenzene	**8.5**		1.0	0.32	ug/L			10/16/17 03:57	1
N-Propylbenzene	**14**		1.0	0.29	ug/L			10/16/17 03:57	1
Methylcyclohexane	**9.2**		1.0	0.22	ug/L			10/16/17 03:57	1
Indane	**12**		1.0	0.12	ug/L			10/16/17 03:57	1
Dichlorofluoromethane	**0.89**	J	1.0	0.21	ug/L			10/16/17 03:57	1

Client Sample ID: BG-1

Lab Sample ID: 460-142764-6

Date Collected: 10/09/17 11:55
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trimethylbenzene	21		1.0	0.11	ug/L			10/16/17 03:57	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*18*	*J N*	*ug/L*		*9.68*	*620-14-4*		*10/16/17 03:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*74 - 132*		*10/16/17 03:57*	*1*
Bromofluorobenzene	*93*		*77 - 124*		*10/16/17 03:57*	*1*
Toluene-d8 (Surr)	*112*		*80 - 120*		*10/16/17 03:57*	*1*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/16/17 03:57*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 17:52	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 17:52	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 17:52	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 17:52	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 17:52	1
Bis(2-chloroethyl)ether	7.1		0.021	0.017	ug/L		10/15/17 07:37	10/16/17 17:52	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 16:31	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 16:31	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 16:31	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 16:31	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 16:31	1
2,4-Dimethylphenol	1.8	J	10	0.95	ug/L		10/15/17 07:37	10/16/17 16:31	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 16:31	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 16:31	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 16:31	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 16:31	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 16:31	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 16:31	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 16:31	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 16:31	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 16:31	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 16:31	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 16:31	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 16:31	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 16:31	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 16:31	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 16:31	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 16:31	1
Naphthalene	0.94	J	10	0.83	ug/L		10/15/17 07:37	10/16/17 16:31	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 16:31	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 16:31	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 16:31	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 16:31	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 16:31	1

Client Sample ID: BG-1

Lab Sample ID: 460-142764-6

Date Collected: 10/09/17 11:55
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 16:31	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 16:31	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 16:31	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 16:31	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 16:31	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 16:31	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 16:31	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 16:31	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 16:31	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 16:31	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 16:31	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 16:31	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 16:31	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 16:31	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 16:31	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 16:31	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 16:31	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 16:31	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 16:31	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 16:31	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 16:31	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 16:31	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 16:31	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 16:31	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 16:31	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 16:31	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 16:31	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 16:31	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 16:31	1
Diphenyl ether	2.2	J	10	0.52	ug/L		10/15/17 07:37	10/16/17 16:31	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 16:31	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 16:31	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 16:31	1
Bisphenol-A	12		10	1.1	ug/L		10/15/17 07:37	10/16/17 16:31	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 16:31	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*11*	*J N*	*ug/L*		*3.86*	*620-14-4*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
Benzene, 1,3,5-trimethyl-	*15*	*J N*	*ug/L*		*3.93*	*108-67-8*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
Benzene, 1,2,4-trimethyl-	*22*	*J N*	*ug/L*		*4.13*	*95-63-6*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
Benzene, 1,2,3-trimethyl-	*16*	*J N*	*ug/L*		*4.35*	*526-73-8*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
Indane	*8.8*	*J N*	*ug/L*		*4.47*	*496-11-7*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
Unknown	*31*	*J*	*ug/L*		*6.95*		*10/15/17 07:37*	*10/16/17 16:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*100*		*51 - 108*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
Phenol-d5	*35*		*14 - 39*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
Terphenyl-d14	*108*		*40 - 148*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
2,4,6-Tribromophenol	*127*		*26 - 139*	*10/15/17 07:37*	*10/16/17 16:31*	*1*
2-Fluorophenol	*50*		*25 - 58*	*10/15/17 07:37*	*10/16/17 16:31*	*1*

Client Sample ID: BG-1

Lab Sample ID: 460-142764-6
Matrix: Water

Date Collected: 10/09/17 11:55
Date Received: 10/09/17 20:10

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*45 - 107*	*10/15/17 07:37*	*10/16/17 16:31*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	51200		150	92.1	ug/L		10/16/17 09:51	10/17/17 20:41	1
Manganese, Dissolved	5330		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 20:41	1

Client Sample ID: C-20D

Lab Sample ID: 460-142764-7
Matrix: Water

Date Collected: 10/09/17 12:10
Date Received: 10/09/17 20:10

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 12:53	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 12:53	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 12:53	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 12:53	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 12:53	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 12:53	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 12:53	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 12:53	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/16/17 12:53	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 12:53	1
cis-1,2-Dichloroethene	0.42	J	1.0	0.26	ug/L			10/16/17 12:53	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 12:53	1
1,2-Dichloroethane	1.3		1.0	0.25	ug/L			10/16/17 12:53	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 12:53	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 12:53	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 12:53	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 12:53	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 12:53	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 12:53	1
Trichloroethene	0.38	J	1.0	0.22	ug/L			10/16/17 12:53	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 12:53	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 12:53	1
Benzene	4.0		1.0	0.090	ug/L			10/16/17 12:53	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 12:53	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 12:53	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 12:53	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 12:53	1
Tetrachloroethene	0.26	J	1.0	0.12	ug/L			10/16/17 12:53	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 12:53	1
Toluene	0.25	U	1.0	0.25	ug/L			10/16/17 12:53	1
Chlorobenzene	7.1		1.0	0.24	ug/L			10/16/17 12:53	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/17 12:53	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 12:53	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/16/17 12:53	1
Ethyl ether	2.7		1.0	0.11	ug/L			10/16/17 12:53	1
MTBE	0.13	U	1.0	0.13	ug/L			10/16/17 12:53	1

Client Sample ID: C-20D

Lab Sample ID: 460-142764-7

Date Collected: 10/09/17 12:10
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/16/17 12:53	1
Cyclohexane	0.52	J	1.0	0.26	ug/L			10/16/17 12:53	1
1,4-Dioxane	410		50	8.7	ug/L			10/16/17 12:53	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/16/17 12:53	1
1,3,5-Trimethylbenzene	0.34	J	1.0	0.25	ug/L			10/16/17 12:53	1
Isopropylbenzene	0.84	J	1.0	0.32	ug/L			10/16/17 12:53	1
N-Propylbenzene	0.79	J	1.0	0.29	ug/L			10/16/17 12:53	1
Methylcyclohexane	0.51	J	1.0	0.22	ug/L			10/16/17 12:53	1
Indane	2.4		1.0	0.12	ug/L			10/16/17 12:53	1
Dichlorofluoromethane	1.0		1.0	0.21	ug/L			10/16/17 12:53	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/16/17 12:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/17 12:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/16/17 12:53*	*1*
Bromofluorobenzene	*86*		*77 - 124*		*10/16/17 12:53*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*10/16/17 12:53*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/16/17 12:53*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/15/17 07:37	10/16/17 18:14	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/15/17 07:37	10/16/17 18:14	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/15/17 07:37	10/16/17 18:14	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/15/17 07:37	10/16/17 18:14	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/15/17 07:37	10/16/17 18:14	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/15/17 07:37	10/16/17 17:32	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 17:32	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 17:32	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/15/17 07:37	10/16/17 17:32	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 17:32	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 17:32	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 17:32	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 17:32	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/15/17 07:37	10/16/17 17:32	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/15/17 07:37	10/16/17 17:32	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/15/17 07:37	10/16/17 17:32	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/15/17 07:37	10/16/17 17:32	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/15/17 07:37	10/16/17 17:32	1
Bis(2-chloroethyl)ether	32		1.0	0.12	ug/L		10/15/17 07:37	10/16/17 17:32	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 17:32	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 17:32	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 17:32	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/15/17 07:37	10/16/17 17:32	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 17:32	1

Client Sample ID: C-20D

Lab Sample ID: 460-142764-7

Date Collected: 10/09/17 12:10
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/15/17 07:37	10/16/17 17:32	1
Isophorone	0.67	U	10	0.67	ug/L		10/15/17 07:37	10/16/17 17:32	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 17:32	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/15/17 07:37	10/16/17 17:32	1
Naphthalene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 17:32	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/15/17 07:37	10/16/17 17:32	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 17:32	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 17:32	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 17:32	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 17:32	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 17:32	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/15/17 07:37	10/16/17 17:32	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 17:32	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/15/17 07:37	10/16/17 17:32	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 17:32	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 17:32	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 17:32	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/15/17 07:37	10/16/17 17:32	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 17:32	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/15/17 07:37	10/16/17 17:32	1
Fluorene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 17:32	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/15/17 07:37	10/16/17 17:32	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 17:32	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 17:32	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 17:32	1
Anthracene	0.57	U	10	0.57	ug/L		10/15/17 07:37	10/16/17 17:32	1
Carbazole	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 17:32	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 17:32	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 17:32	1
Pyrene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 17:32	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/15/17 07:37	10/16/17 17:32	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 17:32	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/15/17 07:37	10/16/17 17:32	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/15/17 07:37	10/16/17 17:32	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 17:32	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/15/17 07:37	10/16/17 17:32	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/15/17 07:37	10/16/17 17:32	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 17:32	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 17:32	1
Diphenyl ether	**1.6**	J	10	0.50	ug/L		10/15/17 07:37	10/16/17 17:32	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 17:32	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 17:32	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/15/17 07:37	10/16/17 17:32	1
Bisphenol-A	**37**		10	1.0	ug/L		10/15/17 07:37	10/16/17 17:32	1
N-Methylaniline	0.87	~~U*~~ UJ	5.0	0.87	ug/L		10/15/17 07:37	10/16/17 17:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Benzenediol, diacetate	*26*	*J N*	*ug/L*		*5.94*	*1205-91-0*	*10/15/17 07:37*	*10/16/17 17:32*	*1*
Unknown	*7.2*	*J*	*ug/L*		*6.10*		*10/15/17 07:37*	*10/16/17 17:32*	*1*
Unknown	*59*	*J*	*ug/L*		*6.95*		*10/15/17 07:37*	*10/16/17 17:32*	*1*

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	103		51 - 108	10/15/17 07:37	10/16/17 17:32	1
Phenol-d5	33		14 - 39	10/15/17 07:37	10/16/17 17:32	1
Terphenyl-d14	96		40 - 148	10/15/17 07:37	10/16/17 17:32	1
2,4,6-Tribromophenol	128		26 - 139	10/15/17 07:37	10/16/17 17:32	1
2-Fluorophenol	49		25 - 58	10/15/17 07:37	10/16/17 17:32	1
2-Fluorobiphenyl	86		45 - 107	10/15/17 07:37	10/16/17 17:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	30400		150	92.1	ug/L		10/16/17 09:51	10/17/17 20:44	1
Manganese, Dissolved	10000		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 20:44	1

Client Sample ID: DDA-06 Lab Sample ID: 460-142764-8

Date Collected: 10/09/17 15:10 Matrix: Water
Date Received: 10/09/17 20:10

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 04:44	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 04:44	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 04:44	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 04:44	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 04:44	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 04:44	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 04:44	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 04:44	1
1,1-Dichloroethane	0.32	J	1.0	0.24	ug/L			10/16/17 04:44	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 04:44	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/17 04:44	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 04:44	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/16/17 04:44	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 04:44	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 04:44	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 04:44	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 04:44	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 04:44	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 04:44	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/16/17 04:44	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 04:44	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 04:44	1
Benzene	18		1.0	0.090	ug/L			10/16/17 04:44	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 04:44	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 04:44	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 04:44	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 04:44	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/16/17 04:44	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 04:44	1
Toluene	0.25	U	1.0	0.25	ug/L			10/16/17 04:44	1
Chlorobenzene	3.9		1.0	0.24	ug/L			10/16/17 04:44	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/17 04:44	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 04:44	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/16/17 04:44	1
Ethyl ether	0.55	J	1.0	0.11	ug/L			10/16/17 04:44	1
MTBE	0.26	J	1.0	0.13	ug/L			10/16/17 04:44	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/16/17 04:44	1

Client Sample ID: DDA-06

Lab Sample ID: 460-142764-8

Date Collected: 10/09/17 15:10
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/16/17 04:44	1
1,4-Dioxane	100		50	8.7	ug/L			10/16/17 04:44	1
1,2,4-Trimethylbenzene	0.68	J	1.0	0.23	ug/L			10/16/17 04:44	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/16/17 04:44	1
Isopropylbenzene	22		1.0	0.32	ug/L			10/16/17 04:44	1
N-Propylbenzene	19		1.0	0.29	ug/L			10/16/17 04:44	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/16/17 04:44	1
Indane	44		1.0	0.12	ug/L			10/16/17 04:44	1
Dichlorofluoromethane	1.3		1.0	0.21	ug/L			10/16/17 04:44	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/16/17 04:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*6.6*	*J*	*ug/L*		*4.49*			*10/16/17 04:44*	*1*
Benzene, 1,2-dichloro-	*5.3*	*J N*	*ug/L*		*10.60*	*95-50-1*		*10/16/17 04:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*74 - 132*		*10/16/17 04:44*	*1*
Bromofluorobenzene	*86*		*77 - 124*		*10/16/17 04:44*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/16/17 04:44*	*1*
Dibromofluoromethane (Surr)	*112*		*72 - 131*		*10/16/17 04:44*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/17/17 19:07	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/17/17 19:07	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/17/17 19:07	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/17/17 19:07	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/17/17 19:07	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 17:53	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 17:53	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 17:53	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 17:53	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 17:53	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 17:53	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 17:53	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 17:53	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 17:53	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 17:53	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 17:53	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 17:53	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 17:53	1
Bis(2-chloroethyl)ether	18		1.0	0.13	ug/L		10/15/17 07:37	10/16/17 17:53	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 17:53	1
1,4-Dichlorobenzene	0.97	J	10	0.69	ug/L		10/15/17 07:37	10/16/17 17:53	1
1,2-Dichlorobenzene	2.9	J	10	0.86	ug/L		10/15/17 07:37	10/16/17 17:53	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 17:53	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 17:53	1

Client Sample ID: DDA-06

Lab Sample ID: 460-142764-8

Date Collected: 10/09/17 15:10
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 17:53	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 17:53	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 17:53	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 17:53	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 17:53	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 17:53	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 17:53	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 17:53	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 17:53	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 17:53	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 17:53	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 17:53	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 17:53	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 17:53	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 17:53	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 17:53	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 17:53	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 17:53	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 17:53	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 17:53	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 17:53	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 17:53	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 17:53	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 17:53	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 17:53	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 17:53	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 17:53	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 17:53	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 17:53	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 17:53	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 17:53	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 17:53	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 17:53	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 17:53	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 17:53	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 17:53	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 17:53	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 17:53	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 17:53	1
Diphenyl ether	**6.8**	J	10	0.52	ug/L		10/15/17 07:37	10/16/17 17:53	1
n,n'-Dimethylaniline	**1.0**		1.0	0.79	ug/L		10/15/17 07:37	10/16/17 17:53	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 17:53	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 17:53	1
Bisphenol-A	**15**		10	1.1	ug/L		10/15/17 07:37	10/16/17 17:53	1
N-Methylaniline	0.91	~~U~~ * UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 17:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, (1-methylethyl)-	*11*	*J N*	*ug/L*		*3.54*	*98-82-8*	*10/15/17 07:37*	*10/16/17 17:53*	*1*
Benzene, propyl-	*12*	*J N*	*ug/L*		*3.80*	*103-65-1*	*10/15/17 07:37*	*10/16/17 17:53*	*1*
Indane	*32*	*J N*	*ug/L*		*4.47*	*496-11-7*	*10/15/17 07:37*	*10/16/17 17:53*	*1*

Client Sample ID: DDA-06

Lab Sample ID: 460-142764-8

Date Collected: 10/09/17 15:10
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
1,4-Benzenediol, diacetate	27	J N	ug/L		5.94	1205-91-0	10/15/17 07:37	10/16/17 17:53	1
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	26	J N	ug/L		6.52	827-16-7	10/15/17 07:37	10/16/17 17:53	1
Unknown	130	J	ug/L		6.95		10/15/17 07:37	10/16/17 17:53	1
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-tri-2-propenyl-	23	J N	ug/L		7.90	1025-15-6	10/15/17 07:37	10/16/17 17:53	1
Urea, N,N'-dimethyl-N,N'-diphenyl-	8.3	J N	ug/L		8.73	611-92-7	10/15/17 07:37	10/16/17 17:53	1
Unknown	9.0	J	ug/L		12.13		10/15/17 07:37	10/16/17 17:53	1
Unknown	9.0	J	ug/L		12.30		10/15/17 07:37	10/16/17 17:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	98		51 - 108	10/15/17 07:37	10/16/17 17:53	1
Phenol-d5	33		14 - 39	10/15/17 07:37	10/16/17 17:53	1
Terphenyl-d14	100		40 - 148	10/15/17 07:37	10/16/17 17:53	1
2,4,6-Tribromophenol	124		26 - 139	10/15/17 07:37	10/16/17 17:53	1
2-Fluorophenol	49		25 - 58	10/15/17 07:37	10/16/17 17:53	1
2-Fluorobiphenyl	88		45 - 107	10/15/17 07:37	10/16/17 17:53	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2060		150	92.1	ug/L		10/16/17 09:51	10/17/17 20:48	1
Manganese, Dissolved	344		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 20:48	1

Client Sample ID: PW-1(U) Discharge

Lab Sample ID: 460-142764-9

Date Collected: 10/09/17 15:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 12:29	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/16/17 12:29	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/16/17 12:29	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/16/17 12:29	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/16/17 12:29	1
Acetone	1.1	U	5.0	1.1	ug/L			10/16/17 12:29	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/16/17 12:29	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/16/17 12:29	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/16/17 12:29	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/16/17 12:29	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/17 12:29	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/16/17 12:29	1
1,2-Dichloroethane	0.30	J	1.0	0.25	ug/L			10/16/17 12:29	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/16/17 12:29	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/16/17 12:29	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/16/17 12:29	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/16/17 12:29	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/16/17 12:29	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/16/17 12:29	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/16/17 12:29	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/16/17 12:29	1

Client Sample ID: PW-1(U) Discharge

Lab Sample ID: 460-142764-9

Date Collected: 10/09/17 15:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/16/17 12:29	1
Benzene	14		1.0	0.090	ug/L			10/16/17 12:29	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/16/17 12:29	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/16/17 12:29	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/16/17 12:29	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/16/17 12:29	1
Tetrachloroethene	1.6		1.0	0.12	ug/L			10/16/17 12:29	1
1,1,2,2-Tetrachloroethane	0.19	U *	1.0	0.19	ug/L			10/16/17 12:29	1
Toluene	0.25	U	1.0	0.25	ug/L			10/16/17 12:29	1
Chlorobenzene	2.1		1.0	0.24	ug/L			10/16/17 12:29	1
Ethylbenzene	2.3		1.0	0.30	ug/L			10/16/17 12:29	1
Styrene	0.17	U	1.0	0.17	ug/L			10/16/17 12:29	1
Xylenes, Total	11		2.0	0.28	ug/L			10/16/17 12:29	1
Ethyl ether	0.98	J	1.0	0.11	ug/L			10/16/17 12:29	1
MTBE	0.36	J	1.0	0.13	ug/L			10/16/17 12:29	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/16/17 12:29	1
Cyclohexane	0.70	J	1.0	0.26	ug/L			10/16/17 12:29	1
1,4-Dioxane	100		50	8.7	ug/L			10/16/17 12:29	1
1,2,4-Trimethylbenzene	9.5		1.0	0.23	ug/L			10/16/17 12:29	1
1,3,5-Trimethylbenzene	2.5		1.0	0.25	ug/L			10/16/17 12:29	1
Isopropylbenzene	1.5		1.0	0.32	ug/L			10/16/17 12:29	1
N-Propylbenzene	1.9		1.0	0.29	ug/L			10/16/17 12:29	1
Methylcyclohexane	1.6		1.0	0.22	ug/L			10/16/17 12:29	1
Indane	3.6		1.0	0.12	ug/L			10/16/17 12:29	1
Dichlorofluoromethane	0.47	J	1.0	0.21	ug/L			10/16/17 12:29	1
1,2,3-Trimethylbenzene	2.3		1.0	0.11	ug/L			10/16/17 12:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/17 12:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/16/17 12:29*	*1*
Bromofluorobenzene	*85*		*77 - 124*		*10/16/17 12:29*	*1*
Toluene-d8 (Surr)	*109*		*80 - 120*		*10/16/17 12:29*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/16/17 12:29*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/17/17 19:30	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/17/17 19:30	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/17/17 19:30	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/17/17 19:30	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/17/17 19:30	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 18:13	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 18:13	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 18:13	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 18:13	1

Client Sample ID: PW-1(U) Discharge

Lab Sample ID: 460-142764-9

Date Collected: 10/09/17 15:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 18:13	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 18:13	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 18:13	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 18:13	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 18:13	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 18:13	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 18:13	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 18:13	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 18:13	1
Bis(2-chloroethyl)ether	**10**		1.0	0.13	ug/L		10/15/17 07:37	10/16/17 18:13	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 18:13	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 18:13	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 18:13	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 18:13	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 18:13	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 18:13	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 18:13	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 18:13	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 18:13	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 18:13	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 18:13	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 18:13	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 18:13	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 18:13	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 18:13	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 18:13	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 18:13	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 18:13	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 18:13	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 18:13	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 18:13	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 18:13	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 18:13	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 18:13	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 18:13	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 18:13	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 18:13	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 18:13	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 18:13	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 18:13	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 18:13	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 18:13	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 18:13	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 18:13	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 18:13	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 18:13	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 18:13	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 18:13	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 18:13	1

Client Sample ID: PW-1(U) Discharge

Lab Sample ID: 460-142764-9

Date Collected: 10/09/17 15:00
Date Received: 10/09/17 20:10

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 18:13	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 18:13	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 18:13	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 18:13	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 18:13	1
Diphenyl ether	**0.52**	J	10	0.52	ug/L		10/15/17 07:37	10/16/17 18:13	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 18:13	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 18:13	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 18:13	1
Bisphenol-A	**14**	J+	10	1.1	ug/L		10/15/17 07:37	10/16/17 18:13	1
N-Methylaniline	0.91	~~U *~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 18:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1,2,4-trimethyl-	*7.5*	*J N*	*ug/L*		*4.13*	*95-63-6*	*10/15/17 07:37*	*10/16/17 18:13*	*1*
Unknown	*12*	*J*	*ug/L*		*6.95*		*10/15/17 07:37*	*10/16/17 18:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*107*		*51 - 108*	*10/15/17 07:37*	*10/16/17 18:13*	*1*
Phenol-d5	*40*	*X*	*14 - 39*	*10/15/17 07:37*	*10/16/17 18:13*	*1*
Terphenyl-d14	*107*		*40 - 148*	*10/15/17 07:37*	*10/16/17 18:13*	*1*
2,4,6-Tribromophenol	*123*		*26 - 139*	*10/15/17 07:37*	*10/16/17 18:13*	*1*
2-Fluorophenol	*56*		*25 - 58*	*10/15/17 07:37*	*10/16/17 18:13*	*1*
2-Fluorobiphenyl	*92*		*45 - 107*	*10/15/17 07:37*	*10/16/17 18:13*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**28100**		150	92.1	ug/L		10/16/17 09:51	10/17/17 20:52	1
Manganese, Dissolved	**2280**		15.0	3.1	ug/L		10/16/17 09:51	10/17/17 20:52	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: TBGW_101017

Lab Sample ID: 460-142922-1
Matrix: Water

Date Collected: 10/10/17 00:00
Date Received: 10/10/17 20:35

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/16/17 22:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 133*		*10/16/17 22:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*71 - 144*		*10/16/17 22:19*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 13:32	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 13:32	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 13:32	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 13:32	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 13:32	1
Acetone	6.2		5.0	1.1	ug/L			10/21/17 13:32	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 13:32	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 13:32	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 13:32	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 13:32	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/21/17 13:32	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 13:32	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 13:32	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 13:32	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 13:32	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 13:32	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 13:32	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 13:32	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 13:32	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 13:32	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 13:32	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 13:32	1
Benzene	0.090	U	1.0	0.090	ug/L			10/21/17 13:32	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 13:32	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 13:32	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 13:32	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 13:32	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 13:32	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 13:32	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 13:32	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/21/17 13:32	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 13:32	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 13:32	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 13:32	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/21/17 13:32	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 13:32	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/21/17 13:32	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 13:32	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 13:32	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 13:32	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 13:32	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 13:32	1

Client Sample ID: TBGW_101017

Lab Sample ID: 460-142922-1

Date Collected: 10/10/17 00:00
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 13:32	1
Indane	0.12	U	1.0	0.12	ug/L			10/21/17 13:32	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/21/17 13:32	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 13:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 13:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*74 - 132*		*10/21/17 13:32*	*1*
Bromofluorobenzene	*90*		*77 - 124*		*10/21/17 13:32*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/21/17 13:32*	*1*
Dibromofluoromethane (Surr)	*116*		*72 - 131*		*10/21/17 13:32*	*1*

Client Sample ID: PZ-6N

Lab Sample ID: 460-142922-2

Date Collected: 10/10/17 10:10
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 15:19	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 15:19	1
Vinyl chloride	**1.1**		1.0	0.060	ug/L			10/21/17 15:19	1
Chloroethane	**2.7**		1.0	0.37	ug/L			10/21/17 15:19	1
Methylene Chloride	**0.43**	J	1.0	0.21	ug/L			10/21/17 15:19	1
Acetone	1.1	U	5.0	1.1	ug/L			10/21/17 15:19	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 15:19	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 15:19	1
1,1-Dichloroethane	**2.3**		1.0	0.24	ug/L			10/21/17 15:19	1
trans-1,2-Dichloroethene	**0.39**	J	1.0	0.18	ug/L			10/21/17 15:19	1
cis-1,2-Dichloroethene	**7.6**		1.0	0.26	ug/L			10/21/17 15:19	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 15:19	1
1,2-Dichloroethane	**8.2**		1.0	0.25	ug/L			10/21/17 15:19	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 15:19	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 15:19	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 15:19	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 15:19	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 15:19	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 15:19	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 15:19	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 15:19	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 15:19	1
Benzene	**2.6**		1.0	0.090	ug/L			10/21/17 15:19	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 15:19	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 15:19	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 15:19	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 15:19	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 15:19	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 15:19	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 15:19	1

Client Sample ID: PZ-6N

Lab Sample ID: 460-142922-2

Date Collected: 10/10/17 10:10
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	30		1.0	0.24	ug/L			10/21/17 15:19	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 15:19	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 15:19	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 15:19	1
Ethyl ether	5.1		1.0	0.11	ug/L			10/21/17 15:19	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 15:19	1
Tetrahydrofuran	83		2.0	0.36	ug/L			10/21/17 15:19	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 15:19	1
1,4-Dioxane	450		50	8.7	ug/L			10/21/17 15:19	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 15:19	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 15:19	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 15:19	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 15:19	1
Methylcyclohexane	0.31	J	1.0	0.22	ug/L			10/21/17 15:19	1
Indane	1.3		1.0	0.12	ug/L			10/21/17 15:19	1
Dichlorofluoromethane	0.84	J	1.0	0.21	ug/L			10/21/17 15:19	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 15:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 15:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*74 - 132*		*10/21/17 15:19*	*1*
Bromofluorobenzene	*92*		*77 - 124*		*10/21/17 15:19*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/21/17 15:19*	*1*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/21/17 15:19*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 13:44	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 13:44	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 13:44	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 13:44	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 13:44	1
Bis(2-chloroethyl)ether	7.1		0.021	0.017	ug/L		10/15/17 07:37	10/16/17 13:44	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 18:33	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 18:33	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 18:33	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 18:33	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 18:33	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 18:33	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 18:33	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 18:33	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 18:33	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 18:33	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 18:33	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 18:33	1

Client Sample ID: PZ-6N

Lab Sample ID: 460-142922-2

Date Collected: 10/10/17 10:10
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 18:33	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 18:33	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 18:33	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 18:33	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 18:33	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 18:33	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 18:33	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 18:33	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 18:33	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 18:33	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 18:33	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 18:33	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 18:33	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 18:33	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 18:33	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 18:33	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 18:33	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 18:33	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 18:33	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 18:33	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 18:33	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 18:33	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 18:33	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 18:33	1
Diethyl phthalate	**1.3**	**J**	10	1.0	ug/L		10/15/17 07:37	10/16/17 18:33	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 18:33	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 18:33	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 18:33	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 18:33	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 18:33	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 18:33	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 18:33	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 18:33	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 18:33	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 18:33	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 18:33	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 18:33	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 18:33	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 18:33	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 18:33	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 18:33	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 18:33	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 18:33	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 18:33	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 18:33	1
Diphenyl ether	**0.53**	**J**	10	0.52	ug/L		10/15/17 07:37	10/16/17 18:33	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 18:33	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 18:33	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 18:33	1

Client Sample ID: PZ-6N

Lab Sample ID: 460-142922-2

Date Collected: 10/10/17 10:10
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	88		10	1.1	ug/L		10/15/17 07:37	10/16/17 18:33	1
N-Methylaniline	0.91	~~U-*~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 18:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*24*	*J N*	*ug/L*		*1.76*	*123-91-1*	*10/15/17 07:37*	*10/16/17 18:33*	*1*
Unknown	*11*	*J*	*ug/L*		*5.68*		*10/15/17 07:37*	*10/16/17 18:33*	*1*
Unknown	*12*	*J*	*ug/L*		*5.74*		*10/15/17 07:37*	*10/16/17 18:33*	*1*
Unknown	*16*	*J*	*ug/L*		*5.80*		*10/15/17 07:37*	*10/16/17 18:33*	*1*
Unknown	*9.8*	*J*	*ug/L*		*5.94*		*10/15/17 07:37*	*10/16/17 18:33*	*1*
Unknown	*32*	*J*	*ug/L*		*6.95*		*10/15/17 07:37*	*10/16/17 18:33*	*1*
Phenol, p-tert-butyl-	*12*	*J N*	*ug/L*		*7.42*	*98-54-4*	*10/15/17 07:37*	*10/16/17 18:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*94*		*51 - 108*	*10/15/17 07:37*	*10/16/17 18:33*	*1*
Phenol-d5	*33*		*14 - 39*	*10/15/17 07:37*	*10/16/17 18:33*	*1*
Terphenyl-d14	*81*		*40 - 148*	*10/15/17 07:37*	*10/16/17 18:33*	*1*
2,4,6-Tribromophenol	*117*		*26 - 139*	*10/15/17 07:37*	*10/16/17 18:33*	*1*
2-Fluorophenol	*46*		*25 - 58*	*10/15/17 07:37*	*10/16/17 18:33*	*1*
2-Fluorobiphenyl	*80*		*45 - 107*	*10/15/17 07:37*	*10/16/17 18:33*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	6600		300	184	ug/L		10/20/17 10:15	10/22/17 12:34	2
Manganese, Dissolved	22500		30.0	6.2	ug/L		10/20/17 10:15	10/22/17 12:34	2

Client Sample ID: PZ-6S

Lab Sample ID: 460-142922-3

Date Collected: 10/10/17 10:50
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.6	J	4.0	2.0	ug/L			10/17/17 22:18	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*72 - 133*		*10/17/17 22:18*	*10*
1,2-Dichloroethane-d4 (Surr)	*157*	*X*	*71 - 144*		*10/17/17 22:18*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	11	U	50	11	ug/L			10/21/17 15:45	50
Bromomethane	9.0	U	50	9.0	ug/L			10/21/17 15:45	50
Vinyl chloride	3.0	U	50	3.0	ug/L			10/21/17 15:45	50
Chloroethane	19	U	50	19	ug/L			10/21/17 15:45	50
Methylene Chloride	11	U	50	11	ug/L			10/21/17 15:45	50
Acetone	54	U	250	54	ug/L			10/21/17 15:45	50
Carbon disulfide	11	U	50	11	ug/L			10/21/17 15:45	50
1,1-Dichloroethene	17	U	50	17	ug/L			10/21/17 15:45	50
1,1-Dichloroethane	13	J J+	50	12	ug/L			10/21/17 15:45	50
trans-1,2-Dichloroethene	9.0	U	50	9.0	ug/L			10/21/17 15:45	50
cis-1,2-Dichloroethene	1400	J+	50	13	ug/L			10/21/17 15:45	50
Chloroform	11	U	50	11	ug/L			10/21/17 15:45	50

Client Sample ID: PZ-6S

Lab Sample ID: 460-142922-3

Date Collected: 10/10/17 10:50
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	21	J J+	50	13	ug/L			10/21/17 15:45	50
2-Butanone	110	U	250	110	ug/L			10/21/17 15:45	50
1,1,1-Trichloroethane	15	J J+	50	14	ug/L			10/21/17 15:45	50
Carbon tetrachloride	17	U	50	17	ug/L			10/21/17 15:45	50
Bromodichloromethane	7.5	U	50	7.5	ug/L			10/21/17 15:45	50
1,2-Dichloropropane	9.0	U	50	9.0	ug/L			10/21/17 15:45	50
cis-1,3-Dichloropropene	8.0	U	50	8.0	ug/L			10/21/17 15:45	50
Trichloroethene	11	U	50	11	ug/L			10/21/17 15:45	50
Dibromochloromethane	11	U	50	11	ug/L			10/21/17 15:45	50
1,1,2-Trichloroethane	4.0	U	50	4.0	ug/L			10/21/17 15:45	50
Benzene	3000	J+	50	4.5	ug/L			10/21/17 15:45	50
trans-1,3-Dichloropropene	9.5	U	50	9.5	ug/L			10/21/17 15:45	50
Bromoform	9.0	U	50	9.0	ug/L			10/21/17 15:45	50
4-Methyl-2-pentanone	32	U	250	32	ug/L			10/21/17 15:45	50
2-Hexanone	36	U	250	36	ug/L			10/21/17 15:45	50
Tetrachloroethene	9.3	J J+	50	6.0	ug/L			10/21/17 15:45	50
1,1,2,2-Tetrachloroethane	9.5	U	50	9.5	ug/L			10/21/17 15:45	50
Toluene	24000	J+	50	13	ug/L			10/21/17 15:45	50
Chlorobenzene	230	J+	50	12	ug/L			10/21/17 15:45	50
Ethylbenzene	1000	J+	50	15	ug/L			10/21/17 15:45	50
Styrene	8.5	U	50	8.5	ug/L			10/21/17 15:45	50
Xylenes, Total	4100	J+	100	14	ug/L			10/21/17 15:45	50
Ethyl ether	5.5	U	50	5.5	ug/L			10/21/17 15:45	50
MTBE	6.5	U	50	6.5	ug/L			10/21/17 15:45	50
Tetrahydrofuran	18	U	100	18	ug/L			10/21/17 15:45	50
Cyclohexane	38	J J+	50	13	ug/L			10/21/17 15:45	50
1,2,4-Trimethylbenzene	580	J+	50	12	ug/L			10/21/17 15:45	50
1,3,5-Trimethylbenzene	200	J+	50	13	ug/L			10/21/17 15:45	50
Isopropylbenzene	34	J J+	50	16	ug/L			10/21/17 15:45	50
N-Propylbenzene	90	J+	50	15	ug/L			10/21/17 15:45	50
Methylcyclohexane	76	J+	50	11	ug/L			10/21/17 15:45	50
Indane	98	J+	50	6.0	ug/L			10/21/17 15:45	50
Dichlorofluoromethane	11	U	50	11	ug/L			10/21/17 15:45	50
1,2,3-Trimethylbenzene	210	J+	50	5.5	ug/L			10/21/17 15:45	50

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*480*	*J N*	*ug/L*		*10.11*	*620-14-4*		*10/21/17 15:45*	*50*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/21/17 15:45*	*50*
Bromofluorobenzene	*90*		*77 - 124*		*10/21/17 15:45*	*50*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/21/17 15:45*	*50*
Dibromofluoromethane (Surr)	*105*		*72 - 131*		*10/21/17 15:45*	*50*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 14:29	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 14:29	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 14:29	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 14:29	1

Client Sample ID: PZ-6S

Lab Sample ID: 460-142922-3

Date Collected: 10/10/17 10:50
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.18	J	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 14:29	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/15/17 07:37	10/16/17 14:29	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	11		10	0.43	ug/L		10/15/17 07:37	10/18/17 13:42	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/18/17 13:42	1
2-Methylphenol	26		10	1.3	ug/L		10/15/17 07:37	10/18/17 13:42	1
4-Methylphenol	41		10	0.91	ug/L		10/15/17 07:37	10/18/17 13:42	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/18/17 13:42	1
2,4-Dimethylphenol	4.7	J	10	0.95	ug/L		10/15/17 07:37	10/18/17 13:42	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/18/17 13:42	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/18/17 13:42	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/18/17 13:42	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/18/17 13:42	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/18/17 13:42	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/18/17 13:42	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/18/17 13:42	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/18/17 13:42	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/18/17 13:42	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/18/17 13:42	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/18/17 13:42	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/18/17 13:42	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/18/17 13:42	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/18/17 13:42	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/18/17 13:42	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/18/17 13:42	1
Naphthalene	9.6	J	10	0.83	ug/L		10/15/17 07:37	10/18/17 13:42	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/18/17 13:42	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/18/17 13:42	1
2-Methylnaphthalene	1.8	J	10	0.92	ug/L		10/15/17 07:37	10/18/17 13:42	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/18/17 13:42	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/18/17 13:42	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/18/17 13:42	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/18/17 13:42	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/18/17 13:42	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/18/17 13:42	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/18/17 13:42	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/18/17 13:42	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/18/17 13:42	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/18/17 13:42	1
Diethyl phthalate	29		10	1.0	ug/L		10/15/17 07:37	10/18/17 13:42	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/18/17 13:42	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/18/17 13:42	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/18/17 13:42	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/18/17 13:42	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/18/17 13:42	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/18/17 13:42	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/18/17 13:42	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/18/17 13:42	1

Client Sample ID: PZ-6S

Lab Sample ID: 460-142922-3

Date Collected: 10/10/17 10:50
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	3.2	J	10	0.85	ug/L		10/15/17 07:37	10/18/17 13:42	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/18/17 13:42	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/18/17 13:42	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/18/17 13:42	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/18/17 13:42	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/18/17 13:42	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/18/17 13:42	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/18/17 13:42	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/18/17 13:42	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/18/17 13:42	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/18/17 13:42	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/18/17 13:42	1
Diphenyl ether	5.0	J	10	0.52	ug/L		10/15/17 07:37	10/18/17 13:42	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/18/17 13:42	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/18/17 13:42	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/18/17 13:42	1
Bisphenol-A	97		10	1.1	ug/L		10/15/17 07:37	10/18/17 13:42	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/18/17 13:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*62*	*J*	*ug/L*		*2.45*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, chloro-	*72*	*J N*	*ug/L*		*2.87*	*108-90-7*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, propyl-	*55*	*J N*	*ug/L*		*3.84*	*103-65-1*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, 1-ethyl-4-methyl-	*150*	*J N*	*ug/L*		*3.91*	*622-96-8*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, (1-methylethyl)-	*120*	*J N*	*ug/L*		*3.93*	*98-82-8*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, 1-ethyl-3-methyl-	*98*	*J N*	*ug/L*		*3.98*	*620-14-4*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, 1-ethyl-2-methyl-	*97*	*J N*	*ug/L*		*4.06*	*611-14-3*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, 1,2,4-trimethyl-	*230*	*J N*	*ug/L*		*4.20*	*95-63-6*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Hexanoic acid	*200*	*J N*	*ug/L*		*4.32*	*142-62-1*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, 1,2,3-trimethyl-	*110*	*J N*	*ug/L*		*4.42*	*526-73-8*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Indane	*64*	*J N*	*ug/L*		*4.54*	*496-11-7*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Benzene, 1-ethyl-3,5-dimethyl-	*40*	*J N*	*ug/L*		*4.68*	*934-74-7*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*46*	*J*	*ug/L*		*4.97*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*57*	*J*	*ug/L*		*7.19*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*53*	*J*	*ug/L*		*7.57*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*34*	*J*	*ug/L*		*7.72*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*45*	*J*	*ug/L*		*8.40*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*35*	*J*	*ug/L*		*8.43*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*90*	*J*	*ug/L*		*10.40*		*10/15/17 07:37*	*10/18/17 13:42*	*1*
Unknown	*140*	*J*	*ug/L*		*12.77*		*10/15/17 07:37*	*10/18/17 13:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*80*		*51 - 108*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Phenol-d5	*38*		*14 - 39*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
Terphenyl-d14	*90*		*40 - 148*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
2,4,6-Tribromophenol	*136*		*26 - 139*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
2-Fluorophenol	*28*		*25 - 58*	*10/15/17 07:37*	*10/18/17 13:42*	*1*
2-Fluorobiphenyl	*82*		*45 - 107*	*10/15/17 07:37*	*10/18/17 13:42*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: PZ-6S

Lab Sample ID: 460-142922-3
Matrix: Water

Date Collected: 10/10/17 10:50
Date Received: 10/10/17 20:35

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	46300		150	92.1	ug/L		10/20/17 10:15	10/22/17 12:38	1
Manganese, Dissolved	1730		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 12:38	1

Client Sample ID: C-3D

Lab Sample ID: 460-142922-4
Matrix: Water

Date Collected: 10/10/17 11:25
Date Received: 10/10/17 20:35

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.9		0.40	0.20	ug/L			10/17/17 09:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/17/17 09:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*121*		*71 - 144*		*10/17/17 09:36*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 14:52	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 14:52	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 14:52	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 14:52	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 14:52	1
Acetone	5.0 ~~1.6~~	J U	5.0	1.1	ug/L			10/21/17 14:52	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 14:52	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 14:52	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 14:52	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 14:52	1
cis-1,2-Dichloroethene	0.32	J	1.0	0.26	ug/L			10/21/17 14:52	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 14:52	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 14:52	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 14:52	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 14:52	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 14:52	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 14:52	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 14:52	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 14:52	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 14:52	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 14:52	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 14:52	1
Benzene	0.092	J	1.0	0.090	ug/L			10/21/17 14:52	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 14:52	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 14:52	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 14:52	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 14:52	1
Tetrachloroethene	0.14	J	1.0	0.12	ug/L			10/21/17 14:52	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 14:52	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 14:52	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/21/17 14:52	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 14:52	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 14:52	1

Client Sample ID: C-3D

Lab Sample ID: 460-142922-4

Date Collected: 10/10/17 11:25
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 14:52	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/21/17 14:52	1
MTBE	**0.33**	J	1.0	0.13	ug/L			10/21/17 14:52	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/21/17 14:52	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 14:52	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 14:52	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 14:52	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 14:52	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 14:52	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 14:52	1
Indane	**0.15**	J	1.0	0.12	ug/L			10/21/17 14:52	1
Dichlorofluoromethane	**0.29**	J	1.0	0.21	ug/L			10/21/17 14:52	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 14:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 14:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/21/17 14:52*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/21/17 14:52*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/21/17 14:52*	*1*
Dibromofluoromethane (Surr)	*118*		*72 - 131*		*10/21/17 14:52*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 13:21	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 13:21	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 13:21	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 13:21	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 13:21	1
Bis(2-chloroethyl)ether	**0.28**		0.021	0.017	ug/L		10/15/17 07:37	10/16/17 13:21	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 12:47	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 12:47	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 12:47	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 12:47	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 12:47	1
2,4-Dimethylphenol	0.95	U ~~F1~~	10	0.95	ug/L		10/15/17 07:37	10/16/17 12:47	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 12:47	1
4-Chloro-3-methylphenol	0.79	U ~~F1~~	10	0.79	ug/L		10/15/17 07:37	10/16/17 12:47	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 12:47	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 12:47	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 12:47	1
4-Nitrophenol	4.8	U ~~F1~~	21	4.8	ug/L		10/15/17 07:37	10/16/17 12:47	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 12:47	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 12:47	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 12:47	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 12:47	1

Client Sample ID: C-3D

Lab Sample ID: 460-142922-4

Date Collected: 10/10/17 11:25
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 12:47	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 12:47	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 12:47	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 12:47	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 12:47	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 12:47	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 12:47	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 12:47	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 12:47	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 12:47	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 12:47	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 12:47	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 12:47	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 12:47	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 12:47	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 12:47	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 12:47	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 12:47	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 12:47	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 12:47	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 12:47	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 12:47	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 12:47	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 12:47	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 12:47	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 12:47	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 12:47	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 12:47	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 12:47	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 12:47	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 12:47	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 12:47	1
Butyl benzyl phthalate	0.63	U ~~F1~~	10	0.63	ug/L		10/15/17 07:37	10/16/17 12:47	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 12:47	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 12:47	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 12:47	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 12:47	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 12:47	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 12:47	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 12:47	1
Benzo[g,h,i]perylene	0.78	U ~~F1~~	10	0.78	ug/L		10/15/17 07:37	10/16/17 12:47	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/15/17 07:37	10/16/17 12:47	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 12:47	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 12:47	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 12:47	1
Bisphenol-A	**8.4**	**J**	10	1.1	ug/L		10/15/17 07:37	10/16/17 12:47	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 12:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/15/17 07:37*	*10/16/17 12:47*	*1*

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	98		51 - 108	10/15/17 07:37	10/16/17 12:47	1
Phenol-d5	35		14 - 39	10/15/17 07:37	10/16/17 12:47	1
Terphenyl-d14	85		40 - 148	10/15/17 07:37	10/16/17 12:47	1
2,4,6-Tribromophenol	116		26 - 139	10/15/17 07:37	10/16/17 12:47	1
2-Fluorophenol	48		25 - 58	10/15/17 07:37	10/16/17 12:47	1
2-Fluorobiphenyl	83		45 - 107	10/15/17 07:37	10/16/17 12:47	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	48200		150	92.1	ug/L		10/20/17 10:15	10/20/17 16:31	1
Manganese, Dissolved	4470		15.0	3.1	ug/L		10/20/17 10:15	10/20/17 16:31	1

Client Sample ID: DGC-7S — Lab Sample ID: 460-142922-5

Date Collected: 10/10/17 13:35 — Matrix: Water
Date Received: 10/10/17 20:35

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	11		0.40	0.20	ug/L			10/17/17 05:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	103		72 - 133		10/17/17 05:00	1
1,2-Dichloroethane-d4 (Surr)	113		71 - 144		10/17/17 05:00	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 02:16	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/22/17 02:16	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/22/17 02:16	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/22/17 02:16	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/22/17 02:16	1
Acetone	1.1	U	5.0	1.1	ug/L			10/22/17 02:16	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/22/17 02:16	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/22/17 02:16	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/22/17 02:16	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/22/17 02:16	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/17 02:16	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/22/17 02:16	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/22/17 02:16	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/22/17 02:16	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/22/17 02:16	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/22/17 02:16	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/22/17 02:16	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/22/17 02:16	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/22/17 02:16	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/22/17 02:16	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 02:16	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/22/17 02:16	1
Benzene	0.090	U	1.0	0.090	ug/L			10/22/17 02:16	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/22/17 02:16	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/22/17 02:16	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/22/17 02:16	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/22/17 02:16	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/22/17 02:16	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/22/17 02:16	1

Client Sample ID: DGC-7S

Lab Sample ID: 460-142922-5

Date Collected: 10/10/17 13:35
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.25	U	1.0	0.25	ug/L			10/22/17 02:16	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/22/17 02:16	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/17 02:16	1
Styrene	0.17	U	1.0	0.17	ug/L			10/22/17 02:16	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/22/17 02:16	1
Ethyl ether	**0.25**	J	1.0	0.11	ug/L			10/22/17 02:16	1
MTBE	**0.52**	J	1.0	0.13	ug/L			10/22/17 02:16	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/22/17 02:16	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/22/17 02:16	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/22/17 02:16	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/22/17 02:16	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/22/17 02:16	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/22/17 02:16	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/22/17 02:16	1
Indane	**0.16**	J	1.0	0.12	ug/L			10/22/17 02:16	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/22/17 02:16	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/22/17 02:16	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/22/17 02:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/22/17 02:16*	*1*
Bromofluorobenzene	*92*		*77 - 124*		*10/22/17 02:16*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/22/17 02:16*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/22/17 02:16*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 14:51	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 14:51	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 14:51	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 14:51	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 14:51	1
Bis(2-chloroethyl)ether	**1.1**		0.021	0.017	ug/L		10/15/17 07:37	10/16/17 14:51	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 19:14	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 19:14	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 19:14	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 19:14	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 19:14	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 19:14	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 19:14	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 19:14	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 19:14	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 19:14	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 19:14	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 19:14	1

Client Sample ID: DGC-7S

Lab Sample ID: 460-142922-5

Date Collected: 10/10/17 13:35
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 19:14	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 19:14	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 19:14	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 19:14	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 19:14	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 19:14	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 19:14	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 19:14	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 19:14	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 19:14	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 19:14	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 19:14	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 19:14	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 19:14	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 19:14	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 19:14	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:14	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:14	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:14	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 19:14	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 19:14	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 19:14	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 19:14	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 19:14	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:14	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:14	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 19:14	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 19:14	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 19:14	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:14	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:14	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 19:14	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 19:14	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 19:14	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 19:14	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 19:14	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 19:14	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:14	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 19:14	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 19:14	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 19:14	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 19:14	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 19:14	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 19:14	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 19:14	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/15/17 07:37	10/16/17 19:14	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 19:14	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:14	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 19:14	1

Client Sample ID: DGC-7S

Lab Sample ID: 460-142922-5

Date Collected: 10/10/17 13:35
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	9.7	J	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:14	1
N-Methylaniline	0.91	~~U~~ UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 19:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/15/17 07:37*	*10/16/17 19:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*105*		*51 - 108*	*10/15/17 07:37*	*10/16/17 19:14*	*1*
Phenol-d5	*37*		*14 - 39*	*10/15/17 07:37*	*10/16/17 19:14*	*1*
Terphenyl-d14	*93*		*40 - 148*	*10/15/17 07:37*	*10/16/17 19:14*	*1*
2,4,6-Tribromophenol	*122*		*26 - 139*	*10/15/17 07:37*	*10/16/17 19:14*	*1*
2-Fluorophenol	*53*		*25 - 58*	*10/15/17 07:37*	*10/16/17 19:14*	*1*
2-Fluorobiphenyl	*87*		*45 - 107*	*10/15/17 07:37*	*10/16/17 19:14*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	42100		150	92.1	ug/L		10/20/17 10:15	10/22/17 12:54	1
Manganese, Dissolved	1690		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 12:54	1

Client Sample ID: C-22S

Lab Sample ID: 460-142922-6

Date Collected: 10/10/17 13:35
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 18:26	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 18:26	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 18:26	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 18:26	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 18:26	1
Acetone	5.0 ~~4.8~~	~~J~~ U	5.0	1.1	ug/L			10/21/17 18:26	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 18:26	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 18:26	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 18:26	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 18:26	1
cis-1,2-Dichloroethene	0.65	J	1.0	0.26	ug/L			10/21/17 18:26	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 18:26	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 18:26	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 18:26	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 18:26	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 18:26	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 18:26	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 18:26	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 18:26	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 18:26	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 18:26	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 18:26	1
Benzene	0.34	J	1.0	0.090	ug/L			10/21/17 18:26	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 18:26	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 18:26	1

Client Sample ID: C-22S

Lab Sample ID: 460-142922-6

Date Collected: 10/10/17 13:35
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 18:26	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 18:26	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 18:26	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 18:26	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 18:26	1
Chlorobenzene	**1.0**		1.0	0.24	ug/L			10/21/17 18:26	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 18:26	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 18:26	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 18:26	1
Ethyl ether	**0.31**	J	1.0	0.11	ug/L			10/21/17 18:26	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 18:26	1
Tetrahydrofuran	**5.0**		2.0	0.36	ug/L			10/21/17 18:26	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 18:26	1
1,4-Dioxane	**200**		50	8.7	ug/L			10/21/17 18:26	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 18:26	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 18:26	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 18:26	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 18:26	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 18:26	1
Indane	**1.1**		1.0	0.12	ug/L			10/21/17 18:26	1
Dichlorofluoromethane	**1.0**		1.0	0.21	ug/L			10/21/17 18:26	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 18:26	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 18:26*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/21/17 18:26*	*1*
Bromofluorobenzene	*92*		*77 - 124*		*10/21/17 18:26*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/21/17 18:26*	*1*
Dibromofluoromethane (Surr)	*119*		*72 - 131*		*10/21/17 18:26*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 15:14	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 15:14	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 15:14	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 15:14	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 15:14	1
Bis(2-chloroethyl)ether	**5.3**		0.021	0.017	ug/L		10/15/17 07:37	10/16/17 15:14	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 19:34	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 19:34	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 19:34	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 19:34	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 19:34	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 19:34	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 19:34	1

Client Sample ID: C-22S

Lab Sample ID: 460-142922-6

Date Collected: 10/10/17 13:35
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 19:34	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 19:34	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 19:34	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 19:34	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 19:34	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 19:34	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 19:34	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 19:34	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 19:34	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 19:34	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 19:34	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 19:34	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 19:34	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 19:34	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 19:34	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 19:34	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 19:34	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 19:34	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 19:34	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 19:34	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 19:34	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:34	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:34	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:34	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 19:34	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 19:34	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 19:34	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 19:34	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 19:34	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:34	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:34	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 19:34	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 19:34	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 19:34	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:34	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:34	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 19:34	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 19:34	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 19:34	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 19:34	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 19:34	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 19:34	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:34	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 19:34	1
Bis(2-ethylhexyl) phthalate	1.3	J	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 19:34	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 19:34	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 19:34	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 19:34	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 19:34	1

Client Sample ID: C-22S

Lab Sample ID: 460-142922-6

Date Collected: 10/10/17 13:35
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 19:34	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/15/17 07:37	10/16/17 19:34	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 19:34	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:34	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 19:34	1
Bisphenol-A	**59**		10	1.1	ug/L		10/15/17 07:37	10/16/17 19:34	1
N-Methylaniline	**1.2**	~~J+~~ J-	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 19:34	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Urea, tetramethyl-	*8.8*	*J N*	*ug/L*		*4.05*	*632-22-4*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
1,4-Benzenediol, diacetate	*13*	*J N*	*ug/L*		*5.94*	*1205-91-0*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*19*	*J*	*ug/L*		*6.10*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	*14*	*J N*	*ug/L*		*6.52*	*827-16-7*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*280*	*J*	*ug/L*		*6.96*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*7.0*	*J*	*ug/L*		*7.06*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*8.7*	*J*	*ug/L*		*7.72*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Urea, N,N'-dimethyl-N,N'-diphenyl-	*8.3*	*J N*	*ug/L*		*8.73*	*611-92-7*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*17*	*J*	*ug/L*		*10.35*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*9.7*	*J*	*ug/L*		*11.23*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*24*	*J*	*ug/L*		*14.05*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*22*	*J*	*ug/L*		*14.67*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*42*	*J*	*ug/L*		*15.33*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*11*	*J*	*ug/L*		*15.45*		*10/15/17 07:37*	*10/16/17 19:34*	*1*
Unknown	*8.4*	*J*	*ug/L*		*15.99*		*10/15/17 07:37*	*10/16/17 19:34*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*103*		*51 - 108*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
Phenol-d5	*36*		*14 - 39*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
Terphenyl-d14	*83*		*40 - 148*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
2,4,6-Tribromophenol	*135*		*26 - 139*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
2-Fluorophenol	*51*		*25 - 58*	*10/15/17 07:37*	*10/16/17 19:34*	*1*
2-Fluorobiphenyl	*90*		*45 - 107*	*10/15/17 07:37*	*10/16/17 19:34*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**51300**		150	92.1	ug/L		10/20/17 10:15	10/22/17 12:58	1
Manganese, Dissolved	**4160**		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 12:58	1

Client Sample ID: FDGW_101017

Lab Sample ID: 460-142922-7

Date Collected: 10/10/17 00:00
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 03:09	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/22/17 03:09	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/22/17 03:09	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/22/17 03:09	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/22/17 03:09	1
Acetone	5.0 ~~2.3~~	~~J~~ U	5.0	1.1	ug/L			10/22/17 03:09	1

Client Sample ID: FDGW_101017

Lab Sample ID: 460-142922-7

Date Collected: 10/10/17 00:00
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/22/17 03:09	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/22/17 03:09	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/22/17 03:09	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/22/17 03:09	1
cis-1,2-Dichloroethene	**0.46**	J	1.0	0.26	ug/L			10/22/17 03:09	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/22/17 03:09	1
1,2-Dichloroethane	**0.61**	J	1.0	0.25	ug/L			10/22/17 03:09	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/22/17 03:09	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/22/17 03:09	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/22/17 03:09	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/22/17 03:09	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/22/17 03:09	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/22/17 03:09	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/22/17 03:09	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 03:09	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/22/17 03:09	1
Benzene	**0.45**	J	1.0	0.090	ug/L			10/22/17 03:09	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/22/17 03:09	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/22/17 03:09	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/22/17 03:09	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/22/17 03:09	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/22/17 03:09	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/22/17 03:09	1
Toluene	0.25	U	1.0	0.25	ug/L			10/22/17 03:09	1
Chlorobenzene	**1.1**		1.0	0.24	ug/L			10/22/17 03:09	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/17 03:09	1
Styrene	0.17	U	1.0	0.17	ug/L			10/22/17 03:09	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/22/17 03:09	1
Ethyl ether	**0.40**	J	1.0	0.11	ug/L			10/22/17 03:09	1
MTBE	0.13	U	1.0	0.13	ug/L			10/22/17 03:09	1
Tetrahydrofuran	**6.0**		2.0	0.36	ug/L			10/22/17 03:09	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/22/17 03:09	1
1,4-Dioxane	**210**		50	8.7	ug/L			10/22/17 03:09	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/22/17 03:09	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/22/17 03:09	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/22/17 03:09	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/22/17 03:09	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/22/17 03:09	1
Indane	**1.4**		1.0	0.12	ug/L			10/22/17 03:09	1
Dichlorofluoromethane	**0.75**	J	1.0	0.21	ug/L			10/22/17 03:09	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/22/17 03:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/22/17 03:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/22/17 03:09*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/22/17 03:09*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/22/17 03:09*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/22/17 03:09*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/16/17 15:36	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/16/17 15:36	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/16/17 15:36	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/16/17 15:36	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/16/17 15:36	1
Bis(2-chloroethyl)ether	5.6		0.021	0.017	ug/L		10/15/17 07:37	10/16/17 15:36	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 19:54	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 19:54	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 19:54	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 19:54	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 19:54	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 19:54	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 19:54	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 19:54	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 19:54	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 19:54	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 19:54	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 19:54	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 19:54	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 19:54	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 19:54	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 19:54	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 19:54	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 19:54	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 19:54	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 19:54	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 19:54	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 19:54	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 19:54	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 19:54	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 19:54	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 19:54	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 19:54	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 19:54	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:54	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:54	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:54	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 19:54	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 19:54	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 19:54	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 19:54	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 19:54	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:54	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 19:54	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 19:54	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 19:54	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 19:54	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:54	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 19:54	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 19:54	1

Client Sample ID: FDGW_101017

Lab Sample ID: 460-142922-7

Date Collected: 10/10/17 00:00
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 19:54	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 19:54	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 19:54	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 19:54	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 19:54	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:54	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 19:54	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 19:54	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 19:54	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 19:54	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 19:54	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 19:54	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 19:54	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/15/17 07:37	10/16/17 19:54	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 19:54	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 19:54	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 19:54	1
Bisphenol-A	**66**		10	1.1	ug/L		10/15/17 07:37	10/16/17 19:54	1
N-Methylaniline	**1.6**	~~J+~~ J-	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 19:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Urea, tetramethyl-	*9.6*	*J N*	*ug/L*		*4.05*	*632-22-4*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
1,4-Benzenediol, diacetate	*14*	*J N*	*ug/L*		*5.94*	*1205-91-0*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*20*	*J*	*ug/L*		*6.10*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	*18*	*J N*	*ug/L*		*6.52*	*827-16-7*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*270*	*J*	*ug/L*		*6.96*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*7.5*	*J*	*ug/L*		*7.06*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*8.4*	*J*	*ug/L*		*7.72*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Urea, N,N'-dimethyl-N,N'-diphenyl-	*8.2*	*J N*	*ug/L*		*8.73*	*611-92-7*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*17*	*J*	*ug/L*		*10.35*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*11*	*J*	*ug/L*		*11.24*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*15*	*J*	*ug/L*		*12.25*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*11*	*J*	*ug/L*		*13.77*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*20*	*J*	*ug/L*		*14.03*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*23*	*J*	*ug/L*		*14.68*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*48*	*J*	*ug/L*		*15.33*		*10/15/17 07:37*	*10/16/17 19:54*	*1*
Unknown	*11*	*J*	*ug/L*		*15.37*		*10/15/17 07:37*	*10/16/17 19:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*102*		*51 - 108*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
Phenol-d5	*38*		*14 - 39*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
Terphenyl-d14	*84*		*40 - 148*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
2,4,6-Tribromophenol	*135*		*26 - 139*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
2-Fluorophenol	*52*		*25 - 58*	*10/15/17 07:37*	*10/16/17 19:54*	*1*
2-Fluorobiphenyl	*90*		*45 - 107*	*10/15/17 07:37*	*10/16/17 19:54*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**50800**		150	92.1	ug/L		10/20/17 10:15	10/22/17 13:02	1

Client Sample ID: FDGW_101017

Lab Sample ID: 460-142922-7

Date Collected: 10/10/17 00:00
Date Received: 10/10/17 20:35

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	4150		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 13:02	1

Client Sample ID: MHW-1D

Lab Sample ID: 460-142922-8

Date Collected: 10/10/17 15:25
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	6.0		0.40	0.20	ug/L			10/17/17 10:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*72 - 133*		*10/17/17 10:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*119*		*71 - 144*		*10/17/17 10:00*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 18:52	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 18:52	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 18:52	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 18:52	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 18:52	1
Acetone	1.1	U	5.0	1.1	ug/L			10/21/17 18:52	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 18:52	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 18:52	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 18:52	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 18:52	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/21/17 18:52	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 18:52	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 18:52	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 18:52	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 18:52	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 18:52	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 18:52	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 18:52	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 18:52	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 18:52	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 18:52	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 18:52	1
Benzene	0.090	U	1.0	0.090	ug/L			10/21/17 18:52	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 18:52	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 18:52	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 18:52	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 18:52	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 18:52	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 18:52	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 18:52	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/21/17 18:52	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 18:52	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 18:52	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 18:52	1

Client Sample ID: MHW-1D

Lab Sample ID: 460-142922-8

Date Collected: 10/10/17 15:25
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/21/17 18:52	1
MTBE	0.14	J	1.0	0.13	ug/L			10/21/17 18:52	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/21/17 18:52	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 18:52	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 18:52	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 18:52	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 18:52	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 18:52	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 18:52	1
Indane	0.12	U	1.0	0.12	ug/L			10/21/17 18:52	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/21/17 18:52	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 18:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 18:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/21/17 18:52*	*1*
Bromofluorobenzene	*89*		*77 - 124*		*10/21/17 18:52*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/21/17 18:52*	*1*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/21/17 18:52*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/15/17 07:37	10/16/17 15:59	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/15/17 07:37	10/16/17 15:59	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/15/17 07:37	10/16/17 15:59	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/15/17 07:37	10/16/17 15:59	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/15/17 07:37	10/16/17 15:59	1
Bis(2-chloroethyl)ether	0.15		0.020	0.016	ug/L		10/15/17 07:37	10/16/17 15:59	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/15/17 07:37	10/16/17 20:15	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 20:15	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 20:15	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/15/17 07:37	10/16/17 20:15	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 20:15	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 20:15	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 20:15	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 20:15	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/15/17 07:37	10/16/17 20:15	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/15/17 07:37	10/16/17 20:15	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/15/17 07:37	10/16/17 20:15	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/15/17 07:37	10/16/17 20:15	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/15/17 07:37	10/16/17 20:15	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:15	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 20:15	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 20:15	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/15/17 07:37	10/16/17 20:15	1

Client Sample ID: MHW-1D

Lab Sample ID: 460-142922-8

Date Collected: 10/10/17 15:25
Date Received: 10/10/17 20:35

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 20:15	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/15/17 07:37	10/16/17 20:15	1
Isophorone	0.67	U	10	0.67	ug/L		10/15/17 07:37	10/16/17 20:15	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 20:15	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/15/17 07:37	10/16/17 20:15	1
Naphthalene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 20:15	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/15/17 07:37	10/16/17 20:15	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 20:15	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 20:15	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 20:15	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 20:15	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 20:15	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/15/17 07:37	10/16/17 20:15	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 20:15	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/15/17 07:37	10/16/17 20:15	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 20:15	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 20:15	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 20:15	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/15/17 07:37	10/16/17 20:15	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:15	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/15/17 07:37	10/16/17 20:15	1
Fluorene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 20:15	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/15/17 07:37	10/16/17 20:15	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 20:15	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:15	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 20:15	1
Anthracene	0.57	U	10	0.57	ug/L		10/15/17 07:37	10/16/17 20:15	1
Carbazole	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 20:15	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 20:15	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 20:15	1
Pyrene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 20:15	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/15/17 07:37	10/16/17 20:15	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:15	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/15/17 07:37	10/16/17 20:15	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/15/17 07:37	10/16/17 20:15	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 20:15	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/15/17 07:37	10/16/17 20:15	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/15/17 07:37	10/16/17 20:15	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 20:15	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 20:15	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 20:15	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 20:15	1
Caprolactam	2.1	J	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:15	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/15/17 07:37	10/16/17 20:15	1
Bisphenol-A	8.0	J	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:15	1
N-Methylaniline	0.87	~~U~~ UJ	5.0	0.87	ug/L		10/15/17 07:37	10/16/17 20:15	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*10*	*J*	*ug/L*		*12.46*		*10/15/17 07:37*	*10/16/17 20:15*	*1*

Client Sample ID: MHW-1D

Lab Sample ID: 460-142922-8

Date Collected: 10/10/17 15:25
Date Received: 10/10/17 20:35

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	105		51 - 108	10/15/17 07:37	10/16/17 20:15	1
Phenol-d5	34		14 - 39	10/15/17 07:37	10/16/17 20:15	1
Terphenyl-d14	92		40 - 148	10/15/17 07:37	10/16/17 20:15	1
2,4,6-Tribromophenol	117		26 - 139	10/15/17 07:37	10/16/17 20:15	1
2-Fluorophenol	50		25 - 58	10/15/17 07:37	10/16/17 20:15	1
2-Fluorobiphenyl	89		45 - 107	10/15/17 07:37	10/16/17 20:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	19500		150	92.1	ug/L		10/20/17 10:15	10/22/17 13:06	1
Manganese, Dissolved	3210		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 13:06	1

Client Sample ID: TBGW_101117

Lab Sample ID: 460-142955-1

Date Collected: 10/11/17 00:00
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/16/17 22:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	111		72 - 133		10/16/17 22:42	1
1,2-Dichloroethane-d4 (Surr)	111		71 - 144		10/16/17 22:42	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 13:58	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 13:58	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 13:58	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 13:58	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 13:58	1
Acetone	1.6	J	5.0	1.1	ug/L			10/21/17 13:58	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 13:58	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 13:58	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 13:58	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 13:58	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/21/17 13:58	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 13:58	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 13:58	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 13:58	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 13:58	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 13:58	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 13:58	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 13:58	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 13:58	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 13:58	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 13:58	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 13:58	1
Benzene	0.090	U	1.0	0.090	ug/L			10/21/17 13:58	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 13:58	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 13:58	1

Client Sample ID: TBGW_101117

Lab Sample ID: 460-142955-1

Date Collected: 10/11/17 00:00
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 13:58	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 13:58	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 13:58	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 13:58	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 13:58	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/21/17 13:58	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 13:58	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 13:58	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 13:58	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/21/17 13:58	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 13:58	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/21/17 13:58	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 13:58	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 13:58	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 13:58	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 13:58	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 13:58	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 13:58	1
Indane	0.12	U	1.0	0.12	ug/L			10/21/17 13:58	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/21/17 13:58	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 13:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 13:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*74 - 132*		*10/21/17 13:58*	*1*
Bromofluorobenzene	*92*		*77 - 124*		*10/21/17 13:58*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/21/17 13:58*	*1*
Dibromofluoromethane (Surr)	*120*		*72 - 131*		*10/21/17 13:58*	*1*

Client Sample ID: RBGW_101117

Lab Sample ID: 460-142955-2

Date Collected: 10/11/17 11:30
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/16/17 23:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*72 - 133*		*10/16/17 23:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*71 - 144*		*10/16/17 23:06*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 14:25	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 14:25	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 14:25	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 14:25	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 14:25	1
Acetone	3.0	J	5.0	1.1	ug/L			10/21/17 14:25	1

Client Sample ID: RBGW_101117

Lab Sample ID: 460-142955-2

Date Collected: 10/11/17 11:30
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 14:25	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 14:25	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 14:25	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 14:25	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/21/17 14:25	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 14:25	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 14:25	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 14:25	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 14:25	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 14:25	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 14:25	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 14:25	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 14:25	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 14:25	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 14:25	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 14:25	1
Benzene	0.090	U	1.0	0.090	ug/L			10/21/17 14:25	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 14:25	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 14:25	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 14:25	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 14:25	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 14:25	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 14:25	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 14:25	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/21/17 14:25	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 14:25	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 14:25	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 14:25	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/21/17 14:25	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 14:25	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/21/17 14:25	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 14:25	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 14:25	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 14:25	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 14:25	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 14:25	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 14:25	1
Indane	0.12	U	1.0	0.12	ug/L			10/21/17 14:25	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/21/17 14:25	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 14:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 14:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*74 - 132*		*10/21/17 14:25*	*1*
Bromofluorobenzene	*90*		*77 - 124*		*10/21/17 14:25*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/21/17 14:25*	*1*
Dibromofluoromethane (Surr)	*117*		*72 - 131*		*10/21/17 14:25*	*1*

Client Sample ID: RBGW_101117

Lab Sample ID: 460-142955-2

Date Collected: 10/11/17 11:30
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/17/17 18:00	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/17/17 18:00	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/17/17 18:00	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/17/17 18:00	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/17/17 18:00	1
Bis(2-chloroethyl)ether	0.017	U	0.021	0.017	ug/L		10/15/17 07:37	10/17/17 18:00	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/15/17 07:37	10/16/17 20:35	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 20:35	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 20:35	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 20:35	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 20:35	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/15/17 07:37	10/16/17 20:35	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 20:35	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 20:35	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 20:35	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 20:35	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 20:35	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 20:35	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 20:35	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 20:35	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 20:35	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 20:35	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 20:35	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 20:35	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 20:35	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 20:35	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 20:35	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 20:35	1
Naphthalene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 20:35	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 20:35	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 20:35	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 20:35	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 20:35	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 20:35	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 20:35	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:35	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 20:35	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 20:35	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 20:35	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 20:35	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 20:35	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 20:35	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:35	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:35	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 20:35	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 20:35	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 20:35	1

Client Sample ID: RBGW_101117

Lab Sample ID: 460-142955-2

Date Collected: 10/11/17 11:30
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:35	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 20:35	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 20:35	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 20:35	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 20:35	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 20:35	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 20:35	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 20:35	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:35	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 20:35	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 20:35	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 20:35	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 20:35	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 20:35	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 20:35	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 20:35	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/15/17 07:37	10/16/17 20:35	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 20:35	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:35	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 20:35	1
Bisphenol-A	8.2	J	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:35	1
N-Methylaniline	0.91	U *	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 20:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/15/17 07:37*	*10/16/17 20:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*102*		*51 - 108*	*10/15/17 07:37*	*10/16/17 20:35*	*1*
Phenol-d5	*36*		*14 - 39*	*10/15/17 07:37*	*10/16/17 20:35*	*1*
Terphenyl-d14	*97*		*40 - 148*	*10/15/17 07:37*	*10/16/17 20:35*	*1*
2,4,6-Tribromophenol	*104*		*26 - 139*	*10/15/17 07:37*	*10/16/17 20:35*	*1*
2-Fluorophenol	*51*		*25 - 58*	*10/15/17 07:37*	*10/16/17 20:35*	*1*
2-Fluorobiphenyl	*87*		*45 - 107*	*10/15/17 07:37*	*10/16/17 20:35*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	92.1	U	150	92.1	ug/L		10/20/17 10:15	10/22/17 13:10	1
Manganese, Dissolved	3.1	U	15.0	3.1	ug/L		10/20/17 10:15	10/22/17 13:10	1

Client Sample ID: DGC-7C

Lab Sample ID: 460-142955-3

Date Collected: 10/11/17 09:30
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.32	J	0.40	0.20	ug/L			10/17/17 10:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*72 - 133*		*10/17/17 10:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*122*		*71 - 144*		*10/17/17 10:23*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: DGC-7C

Lab Sample ID: 460-142955-3

Date Collected: 10/11/17 09:30
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 19:19	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 19:19	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 19:19	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 19:19	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 19:19	1
Acetone	25		5.0	1.1	ug/L			10/21/17 19:19	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 19:19	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 19:19	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 19:19	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 19:19	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/21/17 19:19	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 19:19	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 19:19	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 19:19	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 19:19	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 19:19	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 19:19	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 19:19	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 19:19	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 19:19	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 19:19	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 19:19	1
Benzene	0.34	J	1.0	0.090	ug/L			10/21/17 19:19	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 19:19	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 19:19	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 19:19	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 19:19	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 19:19	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 19:19	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 19:19	1
Chlorobenzene	3.7		1.0	0.24	ug/L			10/21/17 19:19	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 19:19	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 19:19	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 19:19	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/21/17 19:19	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 19:19	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/21/17 19:19	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 19:19	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 19:19	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 19:19	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 19:19	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 19:19	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 19:19	1
Indane	0.12	U	1.0	0.12	ug/L			10/21/17 19:19	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/21/17 19:19	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 19:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 19:19*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: DGC-7C

Lab Sample ID: 460-142955-3

Date Collected: 10/11/17 09:30
Date Received: 10/11/17 21:05

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/21/17 19:19*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/21/17 19:19*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/21/17 19:19*	*1*
Dibromofluoromethane (Surr)	*118*		*72 - 131*		*10/21/17 19:19*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/15/17 07:37	10/17/17 18:22	1
Benzo[a]pyrene	0.029	J	0.050	0.025	ug/L		10/15/17 07:37	10/17/17 18:22	1
Benzo[b]fluoranthene	0.072		0.050	0.019	ug/L		10/15/17 07:37	10/17/17 18:22	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/15/17 07:37	10/17/17 18:22	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/15/17 07:37	10/17/17 18:22	1
Bis(2-chloroethyl)ether	0.016	U	0.020	0.016	ug/L		10/15/17 07:37	10/17/17 18:22	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/15/17 07:37	10/16/17 20:56	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 20:56	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 20:56	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/15/17 07:37	10/16/17 20:56	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 20:56	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 20:56	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 20:56	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 20:56	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/15/17 07:37	10/16/17 20:56	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/15/17 07:37	10/16/17 20:56	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/15/17 07:37	10/16/17 20:56	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/15/17 07:37	10/16/17 20:56	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/15/17 07:37	10/16/17 20:56	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:56	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 20:56	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 20:56	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/15/17 07:37	10/16/17 20:56	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 20:56	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/15/17 07:37	10/16/17 20:56	1
Isophorone	0.67	U	10	0.67	ug/L		10/15/17 07:37	10/16/17 20:56	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 20:56	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/15/17 07:37	10/16/17 20:56	1
Naphthalene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 20:56	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/15/17 07:37	10/16/17 20:56	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 20:56	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 20:56	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 20:56	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 20:56	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 20:56	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/15/17 07:37	10/16/17 20:56	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 20:56	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/15/17 07:37	10/16/17 20:56	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 20:56	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/15/17 07:37	10/16/17 20:56	1

Client Sample ID: DGC-7C

Lab Sample ID: 460-142955-3

Date Collected: 10/11/17 09:30
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 20:56	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/15/17 07:37	10/16/17 20:56	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:56	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/15/17 07:37	10/16/17 20:56	1
Fluorene	0.80	U	10	0.80	ug/L		10/15/17 07:37	10/16/17 20:56	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/15/17 07:37	10/16/17 20:56	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/15/17 07:37	10/16/17 20:56	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:56	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/15/17 07:37	10/16/17 20:56	1
Anthracene	0.57	U	10	0.57	ug/L		10/15/17 07:37	10/16/17 20:56	1
Carbazole	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 20:56	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/15/17 07:37	10/16/17 20:56	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 20:56	1
Pyrene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 20:56	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/15/17 07:37	10/16/17 20:56	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:56	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/15/17 07:37	10/16/17 20:56	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/15/17 07:37	10/16/17 20:56	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/15/17 07:37	10/16/17 20:56	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/15/17 07:37	10/16/17 20:56	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/15/17 07:37	10/16/17 20:56	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/15/17 07:37	10/16/17 20:56	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 20:56	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 20:56	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/15/17 07:37	10/16/17 20:56	1
Caprolactam	2.9	J	10	1.1	ug/L		10/15/17 07:37	10/16/17 20:56	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/15/17 07:37	10/16/17 20:56	1
Bisphenol-A	10 ~~7.9~~	~~J~~ U	10	1.0	ug/L		10/15/17 07:37	10/16/17 20:56	1
N-Methylaniline	0.87	~~U~~ UJ	5.0	0.87	ug/L		10/15/17 07:37	10/16/17 20:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/15/17 07:37*	*10/16/17 20:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*96*		*51 - 108*	*10/15/17 07:37*	*10/16/17 20:56*	*1*
Phenol-d5	*32*		*14 - 39*	*10/15/17 07:37*	*10/16/17 20:56*	*1*
Terphenyl-d14	*80*		*40 - 148*	*10/15/17 07:37*	*10/16/17 20:56*	*1*
2,4,6-Tribromophenol	*113*		*26 - 139*	*10/15/17 07:37*	*10/16/17 20:56*	*1*
2-Fluorophenol	*47*		*25 - 58*	*10/15/17 07:37*	*10/16/17 20:56*	*1*
2-Fluorobiphenyl	*83*		*45 - 107*	*10/15/17 07:37*	*10/16/17 20:56*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	95100		150	92.1	ug/L		10/20/17 10:15	10/22/17 13:14	1
Manganese, Dissolved	1170		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 13:14	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: DDA-05

Lab Sample ID: 460-142955-4

Date Collected: 10/11/17 10:45
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 03:36	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/22/17 03:36	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/22/17 03:36	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/22/17 03:36	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/22/17 03:36	1
Acetone	5.0 ~~3.8~~	J U	5.0	1.1	ug/L			10/22/17 03:36	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/22/17 03:36	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/22/17 03:36	1
1,1-Dichloroethane	0.86	J	1.0	0.24	ug/L			10/22/17 03:36	1
trans-1,2-Dichloroethene	0.29	J	1.0	0.18	ug/L			10/22/17 03:36	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/17 03:36	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/22/17 03:36	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/22/17 03:36	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/22/17 03:36	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/22/17 03:36	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/22/17 03:36	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/22/17 03:36	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/22/17 03:36	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/22/17 03:36	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/22/17 03:36	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 03:36	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/22/17 03:36	1
Benzene	110		1.0	0.090	ug/L			10/22/17 03:36	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/22/17 03:36	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/22/17 03:36	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/22/17 03:36	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/22/17 03:36	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/22/17 03:36	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/22/17 03:36	1
Toluene	1.1		1.0	0.25	ug/L			10/22/17 03:36	1
Chlorobenzene	51		1.0	0.24	ug/L			10/22/17 03:36	1
Ethylbenzene	2.5		1.0	0.30	ug/L			10/22/17 03:36	1
Styrene	0.17	U	1.0	0.17	ug/L			10/22/17 03:36	1
Xylenes, Total	290		2.0	0.28	ug/L			10/22/17 03:36	1
Ethyl ether	0.44	J	1.0	0.11	ug/L			10/22/17 03:36	1
MTBE	0.13	U	1.0	0.13	ug/L			10/22/17 03:36	1
Tetrahydrofuran	20		2.0	0.36	ug/L			10/22/17 03:36	1
Cyclohexane	3.0		1.0	0.26	ug/L			10/22/17 03:36	1
1,4-Dioxane	82		50	8.7	ug/L			10/22/17 03:36	1
1,2,4-Trimethylbenzene	210		1.0	0.23	ug/L			10/22/17 03:36	1
1,3,5-Trimethylbenzene	60		1.0	0.25	ug/L			10/22/17 03:36	1
Isopropylbenzene	24		1.0	0.32	ug/L			10/22/17 03:36	1
N-Propylbenzene	28		1.0	0.29	ug/L			10/22/17 03:36	1
Methylcyclohexane	3.6		1.0	0.22	ug/L			10/22/17 03:36	1
Indane	98		1.0	0.12	ug/L			10/22/17 03:36	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/22/17 03:36	1
1,2,3-Trimethylbenzene	76		1.0	0.11	ug/L			10/22/17 03:36	1

Client Sample ID: DDA-05

Lab Sample ID: 460-142955-4

Date Collected: 10/11/17 10:45
Date Received: 10/11/17 21:05

Matrix: Water

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
.pi. -Cyclopentadienyl-dicarbonyl-ethylis onitril-trichlorgerm	12	J N	ug/L		1.15	1000288-00-1		10/22/17 03:36	1
Benzene, 1-ethyl-2-methyl-	38	J N	ug/L		10.11	611-14-3		10/22/17 03:36	1
Benzene, 1-ethyl-4-methyl-	74	J N	ug/L		10.35	622-96-8		10/22/17 03:36	1
Benzene, 1-methyl-3-(1-methylethyl)-	10	J N	ug/L		10.99	535-77-3		10/22/17 03:36	1
Benzene, 2-ethyl-1,4-dimethyl-	8.0	J N	ug/L		11.16	1758-88-9		10/22/17 03:36	1
Benzene, 1-ethyl-2,4-dimethyl-	17	J N	ug/L		11.23	874-41-9		10/22/17 03:36	1
Benzene, 1,2,4,5-tetramethyl-	9.2	J N	ug/L		11.47	95-93-2		10/22/17 03:36	1
Benzene, 1,2,3,4-tetramethyl-	17	J N	ug/L		11.50	488-23-3		10/22/17 03:36	1
2,4-Dimethylstyrene	16	J N	ug/L		11.76	2234-20-0		10/22/17 03:36	1
Naphthalene	8.1	J N	ug/L		12.17	91-20-3		10/22/17 03:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		74 - 132		10/22/17 03:36	1
Bromofluorobenzene	97		77 - 124		10/22/17 03:36	1
Toluene-d8 (Surr)	104		80 - 120		10/22/17 03:36	1
Dibromofluoromethane (Surr)	106		72 - 131		10/22/17 03:36	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/15/17 07:37	10/17/17 18:45	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/15/17 07:37	10/17/17 18:45	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/15/17 07:37	10/17/17 18:45	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/15/17 07:37	10/17/17 18:45	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/15/17 07:37	10/17/17 18:45	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	1.0	J	10	0.43	ug/L		10/15/17 07:37	10/16/17 21:16	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 21:16	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/15/17 07:37	10/16/17 21:16	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/15/17 07:37	10/16/17 21:16	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/15/17 07:37	10/16/17 21:16	1
2,4-Dimethylphenol	2.1	J	10	0.95	ug/L		10/15/17 07:37	10/16/17 21:16	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/15/17 07:37	10/16/17 21:16	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/15/17 07:37	10/16/17 21:16	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/15/17 07:37	10/16/17 21:16	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/15/17 07:37	10/16/17 21:16	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/15/17 07:37	10/16/17 21:16	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/15/17 07:37	10/16/17 21:16	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/15/17 07:37	10/16/17 21:16	1
Bis(2-chloroethyl)ether	24		1.0	0.13	ug/L		10/15/17 07:37	10/16/17 21:16	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/15/17 07:37	10/16/17 21:16	1
1,4-Dichlorobenzene	2.8	J	10	0.69	ug/L		10/15/17 07:37	10/16/17 21:16	1
1,2-Dichlorobenzene	1.2	J	10	0.86	ug/L		10/15/17 07:37	10/16/17 21:16	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/15/17 07:37	10/16/17 21:16	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 21:16	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/15/17 07:37	10/16/17 21:16	1
Isophorone	0.70	U	10	0.70	ug/L		10/15/17 07:37	10/16/17 21:16	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 21:16	1

Client Sample ID: DDA-05

Lab Sample ID: 460-142955-4

Date Collected: 10/11/17 10:45
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/15/17 07:37	10/16/17 21:16	1
Naphthalene	8.4	J	10	0.83	ug/L		10/15/17 07:37	10/16/17 21:16	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/15/17 07:37	10/16/17 21:16	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 21:16	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 21:16	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 21:16	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/15/17 07:37	10/16/17 21:16	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 21:16	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 21:16	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 21:16	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/15/17 07:37	10/16/17 21:16	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 21:16	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/15/17 07:37	10/16/17 21:16	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 21:16	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/15/17 07:37	10/16/17 21:16	1
Diethyl phthalate	8.0	J	10	1.0	ug/L		10/15/17 07:37	10/16/17 21:16	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/15/17 07:37	10/16/17 21:16	1
Fluorene	0.83	U	10	0.83	ug/L		10/15/17 07:37	10/16/17 21:16	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/15/17 07:37	10/16/17 21:16	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/15/17 07:37	10/16/17 21:16	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 21:16	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/15/17 07:37	10/16/17 21:16	1
Anthracene	0.59	U	10	0.59	ug/L		10/15/17 07:37	10/16/17 21:16	1
Carbazole	0.89	U	10	0.89	ug/L		10/15/17 07:37	10/16/17 21:16	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/15/17 07:37	10/16/17 21:16	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/15/17 07:37	10/16/17 21:16	1
Pyrene	0.86	U	10	0.86	ug/L		10/15/17 07:37	10/16/17 21:16	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/15/17 07:37	10/16/17 21:16	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 21:16	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/15/17 07:37	10/16/17 21:16	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/15/17 07:37	10/16/17 21:16	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/15/17 07:37	10/16/17 21:16	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/15/17 07:37	10/16/17 21:16	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/15/17 07:37	10/16/17 21:16	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/15/17 07:37	10/16/17 21:16	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/15/17 07:37	10/16/17 21:16	1
Diphenyl ether	10		10	0.52	ug/L		10/15/17 07:37	10/16/17 21:16	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/15/17 07:37	10/16/17 21:16	1
Caprolactam	1.1	U	10	1.1	ug/L		10/15/17 07:37	10/16/17 21:16	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/15/17 07:37	10/16/17 21:16	1
Bisphenol-A	120		10	1.1	ug/L		10/15/17 07:37	10/16/17 21:16	1
N-Methylaniline	0.91	~~U~~ * UJ	5.2	0.91	ug/L		10/15/17 07:37	10/16/17 21:16	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, chloro-	*26*	*J N*	*ug/L*		*2.86*	*108-90-7*	*10/15/17 07:37*	*10/16/17 21:16*	*1*
Benzene, 1,3-dimethyl-	*230*	*J N*	*ug/L*		*3.06*	*108-38-3*	*10/15/17 07:37*	*10/16/17 21:16*	*1*
Benzene, (1-methylethyl)-	*19*	*J N*	*ug/L*		*3.55*	*98-82-8*	*10/15/17 07:37*	*10/16/17 21:16*	*1*
Benzene, propyl-	*23*	*J N*	*ug/L*		*3.80*	*103-65-1*	*10/15/17 07:37*	*10/16/17 21:16*	*1*
Benzene, 1-ethyl-3-methyl-	*33*	*J N*	*ug/L*		*3.86*	*620-14-4*	*10/15/17 07:37*	*10/16/17 21:16*	*1*
Benzene, 1,3,5-trimethyl-	*49*	*J N*	*ug/L*		*3.93*	*108-67-8*	*10/15/17 07:37*	*10/16/17 21:16*	*1*

Client Sample ID: DDA-05

Lab Sample ID: 460-142955-4

Date Collected: 10/11/17 10:45
Matrix: Water
Date Received: 10/11/17 21:05

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Benzene, 1-ethyl-2-methyl-	57	J N	ug/L		4.01	611-14-3	10/15/17 07:37	10/16/17 21:16	1
Benzene, 1,2,4-trimethyl-	160	J N	ug/L		4.13	95-63-6	10/15/17 07:37	10/16/17 21:16	1
Benzene, 1,2,3-trimethyl-	60	J N	ug/L		4.35	526-73-8	10/15/17 07:37	10/16/17 21:16	1
Indane	72	J N	ug/L		4.47	496-11-7	10/15/17 07:37	10/16/17 21:16	1
Unknown	15	J	ug/L		5.27		10/15/17 07:37	10/16/17 21:16	1
Unknown	20	J	ug/L		5.81		10/15/17 07:37	10/16/17 21:16	1
Unknown	35	J	ug/L		6.95		10/15/17 07:37	10/16/17 21:16	1
5-Methyl-2,4-diisopropylphenol	15	J N	ug/L		7.10	40625-96-5	10/15/17 07:37	10/16/17 21:16	1
Hexadecanoic acid, butyl ester	32	J N	ug/L		9.96	111-06-8	10/15/17 07:37	10/16/17 21:16	1
Octadecanoic acid, butyl ester	22	J N	ug/L		10.66	123-95-5	10/15/17 07:37	10/16/17 21:16	1
Unknown	12	J	ug/L		11.07		10/15/17 07:37	10/16/17 21:16	1
Unknown	13	J	ug/L		11.97		10/15/17 07:37	10/16/17 21:16	1
Unknown	40	J	ug/L		12.13		10/15/17 07:37	10/16/17 21:16	1
Unknown	50	J	ug/L		12.30		10/15/17 07:37	10/16/17 21:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	106		51 - 108	10/15/17 07:37	10/16/17 21:16	1
Phenol-d5	36		14 - 39	10/15/17 07:37	10/16/17 21:16	1
Terphenyl-d14	89		40 - 148	10/15/17 07:37	10/16/17 21:16	1
2,4,6-Tribromophenol	127		26 - 139	10/15/17 07:37	10/16/17 21:16	1
2-Fluorophenol	52		25 - 58	10/15/17 07:37	10/16/17 21:16	1
2-Fluorobiphenyl	89		45 - 107	10/15/17 07:37	10/16/17 21:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**46100**		150	92.1	ug/L		10/20/17 10:15	10/22/17 13:18	1
Manganese, Dissolved	**1340**		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 13:18	1

Client Sample ID: MHW-1S

Lab Sample ID: 460-142955-5

Date Collected: 10/11/17 11:25
Matrix: Water
Date Received: 10/11/17 21:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 19:46	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 19:46	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 19:46	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 19:46	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 19:46	1
Acetone	**13**		5.0	1.1	ug/L			10/21/17 19:46	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 19:46	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 19:46	1
1,1-Dichloroethane	**1.0**		1.0	0.24	ug/L			10/21/17 19:46	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 19:46	1
cis-1,2-Dichloroethene	**0.45**	J	1.0	0.26	ug/L			10/21/17 19:46	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 19:46	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 19:46	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 19:46	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 19:46	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 19:46	1

Client Sample ID: MHW-1S

Lab Sample ID: 460-142955-5

Date Collected: 10/11/17 11:25
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 19:46	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 19:46	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 19:46	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 19:46	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 19:46	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 19:46	1
Benzene	**19**		1.0	0.090	ug/L			10/21/17 19:46	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 19:46	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 19:46	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 19:46	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 19:46	1
Tetrachloroethene	**0.23**	J	1.0	0.12	ug/L			10/21/17 19:46	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 19:46	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 19:46	1
Chlorobenzene	**13**		1.0	0.24	ug/L			10/21/17 19:46	1
Ethylbenzene	**1.0**		1.0	0.30	ug/L			10/21/17 19:46	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 19:46	1
Xylenes, Total	**6.4**		2.0	0.28	ug/L			10/21/17 19:46	1
Ethyl ether	**5.9**		1.0	0.11	ug/L			10/21/17 19:46	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 19:46	1
Tetrahydrofuran	**57**		2.0	0.36	ug/L			10/21/17 19:46	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 19:46	1
1,4-Dioxane	**940**		50	8.7	ug/L			10/21/17 19:46	1
1,2,4-Trimethylbenzene	**1.4**		1.0	0.23	ug/L			10/21/17 19:46	1
1,3,5-Trimethylbenzene	**0.55**	J	1.0	0.25	ug/L			10/21/17 19:46	1
Isopropylbenzene	**1.4**		1.0	0.32	ug/L			10/21/17 19:46	1
N-Propylbenzene	**0.83**	J	1.0	0.29	ug/L			10/21/17 19:46	1
Methylcyclohexane	**0.23**	J	1.0	0.22	ug/L			10/21/17 19:46	1
Indane	**4.8**		1.0	0.12	ug/L			10/21/17 19:46	1
Dichlorofluoromethane	**0.39**	J	1.0	0.21	ug/L			10/21/17 19:46	1
1,2,3-Trimethylbenzene	**0.52**	J	1.0	0.11	ug/L			10/21/17 19:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*7.1*	*J*	*ug/L*		*1.29*			*10/21/17 19:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/21/17 19:46*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/21/17 19:46*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/21/17 19:46*	*1*
Dibromofluoromethane (Surr)	*111*		*72 - 131*		*10/21/17 19:46*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/18/17 19:58	10/23/17 08:12	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/18/17 19:58	10/23/17 08:12	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/18/17 19:58	10/23/17 08:12	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/18/17 19:58	10/23/17 08:12	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/18/17 19:58	10/23/17 08:12	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: MHW-1S

Lab Sample ID: 460-142955-5

Date Collected: 10/11/17 11:25
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.43	U	10	0.43	ug/L		10/18/17 19:58	10/20/17 15:51	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/18/17 19:58	10/20/17 15:51	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/18/17 19:58	10/20/17 15:51	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/18/17 19:58	10/20/17 15:51	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/20/17 15:51	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/18/17 19:58	10/20/17 15:51	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 15:51	1
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/18/17 19:58	10/20/17 15:51	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/18/17 19:58	10/20/17 15:51	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/18/17 19:58	10/20/17 15:51	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/18/17 19:58	10/20/17 15:51	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/18/17 19:58	10/20/17 15:51	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/18/17 19:58	10/20/17 15:51	1
Bis(2-chloroethyl)ether	39		1.0	0.13	ug/L		10/18/17 19:58	10/20/17 15:51	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/18/17 19:58	10/20/17 15:51	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/18/17 19:58	10/20/17 15:51	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/18/17 19:58	10/20/17 15:51	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/18/17 19:58	10/20/17 15:51	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/18/17 19:58	10/20/17 15:51	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/18/17 19:58	10/20/17 15:51	1
Isophorone	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/20/17 15:51	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/18/17 19:58	10/20/17 15:51	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/18/17 19:58	10/20/17 15:51	1
Naphthalene	0.83	U	10	0.83	ug/L		10/18/17 19:58	10/20/17 15:51	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/20/17 15:51	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/18/17 19:58	10/20/17 15:51	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/18/17 19:58	10/20/17 15:51	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/18/17 19:58	10/20/17 15:51	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/18/17 19:58	10/20/17 15:51	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/20/17 15:51	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 15:51	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/20/17 15:51	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/18/17 19:58	10/20/17 15:51	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 15:51	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/18/17 19:58	10/20/17 15:51	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/18/17 19:58	10/20/17 15:51	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/18/17 19:58	10/20/17 15:51	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 15:51	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 15:51	1
Fluorene	0.83	U	10	0.83	ug/L		10/18/17 19:58	10/20/17 15:51	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/18/17 19:58	10/20/17 15:51	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/18/17 19:58	10/20/17 15:51	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 15:51	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/20/17 15:51	1
Anthracene	0.59	U *	10	0.59	ug/L		10/18/17 19:58	10/20/17 15:51	1
Carbazole	0.89	U	10	0.89	ug/L		10/18/17 19:58	10/20/17 15:51	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 15:51	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/18/17 19:58	10/20/17 15:51	1
Pyrene	0.86	U	10	0.86	ug/L		10/18/17 19:58	10/20/17 15:51	1

Client Sample ID: MHW-1S

Lab Sample ID: 460-142955-5

Date Collected: 10/11/17 11:25
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/18/17 19:58	10/20/17 15:51	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 15:51	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/18/17 19:58	10/20/17 15:51	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/18/17 19:58	10/20/17 15:51	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/18/17 19:58	10/20/17 15:51	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/18/17 19:58	10/20/17 15:51	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/18/17 19:58	10/20/17 15:51	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/18/17 19:58	10/20/17 15:51	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/18/17 19:58	10/20/17 15:51	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/18/17 19:58	10/20/17 15:51	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/18/17 19:58	10/20/17 15:51	1
Caprolactam	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 15:51	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/18/17 19:58	10/20/17 15:51	1
Bisphenol-A	**61**		10	1.1	ug/L		10/18/17 19:58	10/20/17 15:51	1
N-Methylaniline	**1.2**	J	5.2	0.91	ug/L		10/18/17 19:58	10/20/17 15:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*56*	*J N*	*ug/L*		*1.70*	*123-91-1*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
1,4-Oxathiane	*32*	*J N*	*ug/L*		*3.21*	*15980-15-1*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*53*	*J*	*ug/L*		*6.25*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*11*	*J*	*ug/L*		*6.28*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*11*	*J*	*ug/L*		*6.41*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*23*	*J*	*ug/L*		*6.50*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Propanoic acid, 2-phenoxy-	*10*	*J N*	*ug/L*		*6.81*	*940-31-8*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*550*	*J*	*ug/L*		*7.16*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*16*	*J*	*ug/L*		*7.20*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*39*	*J*	*ug/L*		*7.26*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*50*	*J*	*ug/L*		*7.35*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*33*	*J*	*ug/L*		*7.45*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*12*	*J*	*ug/L*		*7.97*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*15*	*J*	*ug/L*		*8.29*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*13*	*J*	*ug/L*		*8.67*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*14*	*J*	*ug/L*		*8.92*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Urea, N,N'-dimethyl-N,N'-diphenyl-	*10*	*J N*	*ug/L*		*8.98*	*611-92-7*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*75*	*J*	*ug/L*		*11.56*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*12*	*J*	*ug/L*		*13.49*		*10/18/17 19:58*	*10/20/17 15:51*	*1*
Unknown	*11*	*J*	*ug/L*		*13.58*		*10/18/17 19:58*	*10/20/17 15:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*82*		*51 - 108*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
Phenol-d5	*39*		*14 - 39*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
Terphenyl-d14	*96*		*40 - 148*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
2,4,6-Tribromophenol	*132*		*26 - 139*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
2-Fluorophenol	*47*		*25 - 58*	*10/18/17 19:58*	*10/20/17 15:51*	*1*
2-Fluorobiphenyl	*83*		*45 - 107*	*10/18/17 19:58*	*10/20/17 15:51*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**36900**		450	276	ug/L		10/20/17 10:15	10/22/17 13:22	3
Manganese, Dissolved	**38100**		45.0	9.4	ug/L		10/20/17 10:15	10/22/17 13:22	3

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: DDA-01

Lab Sample ID: 460-142955-6

Date Collected: 10/11/17 12:10
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.5		0.40	0.20	ug/L			10/17/17 21:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*72 - 133*		*10/17/17 21:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 144*		*10/17/17 21:54*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 02:42	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/22/17 02:42	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/22/17 02:42	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/22/17 02:42	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/22/17 02:42	1
Acetone	1.1	U	5.0	1.1	ug/L			10/22/17 02:42	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/22/17 02:42	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/22/17 02:42	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/22/17 02:42	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/22/17 02:42	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/17 02:42	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/22/17 02:42	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/22/17 02:42	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/22/17 02:42	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/22/17 02:42	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/22/17 02:42	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/22/17 02:42	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/22/17 02:42	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/22/17 02:42	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/22/17 02:42	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 02:42	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/22/17 02:42	1
Benzene	0.090	U	1.0	0.090	ug/L			10/22/17 02:42	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/22/17 02:42	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/22/17 02:42	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/22/17 02:42	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/22/17 02:42	1
Tetrachloroethene	**2.3**		1.0	0.12	ug/L			10/22/17 02:42	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/22/17 02:42	1
Toluene	0.25	U	1.0	0.25	ug/L			10/22/17 02:42	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/22/17 02:42	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/17 02:42	1
Styrene	0.17	U	1.0	0.17	ug/L			10/22/17 02:42	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/22/17 02:42	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/22/17 02:42	1
MTBE	**0.33**	J	1.0	0.13	ug/L			10/22/17 02:42	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/22/17 02:42	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/22/17 02:42	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/22/17 02:42	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/22/17 02:42	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/22/17 02:42	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/22/17 02:42	1

Client Sample ID: DDA-01

Lab Sample ID: 460-142955-6

Date Collected: 10/11/17 12:10
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/22/17 02:42	1
Indane	0.12	U	1.0	0.12	ug/L			10/22/17 02:42	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/22/17 02:42	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/22/17 02:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/22/17 02:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/22/17 02:42*	*1*
Bromofluorobenzene	*92*		*77 - 124*		*10/22/17 02:42*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/22/17 02:42*	*1*
Dibromofluoromethane (Surr)	*112*		*72 - 131*		*10/22/17 02:42*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.051	0.018	ug/L		10/18/17 19:58	10/23/17 08:35	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		10/18/17 19:58	10/23/17 08:35	1
Benzo[b]fluoranthene	0.019	U	0.051	0.019	ug/L		10/18/17 19:58	10/23/17 08:35	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/18/17 19:58	10/23/17 08:35	1
Pentachlorophenol	0.032	U	0.20	0.032	ug/L		10/18/17 19:58	10/23/17 08:35	1
Bis(2-chloroethyl)ether	0.52		0.020	0.016	ug/L		10/18/17 19:58	10/23/17 08:35	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/18/17 19:58	10/20/17 16:13	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/20/17 16:13	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/18/17 19:58	10/20/17 16:13	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/18/17 19:58	10/20/17 16:13	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/18/17 19:58	10/20/17 16:13	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/18/17 19:58	10/20/17 16:13	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/18/17 19:58	10/20/17 16:13	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/18/17 19:58	10/20/17 16:13	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/18/17 19:58	10/20/17 16:13	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/18/17 19:58	10/20/17 16:13	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/18/17 19:58	10/20/17 16:13	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/18/17 19:58	10/20/17 16:13	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/18/17 19:58	10/20/17 16:13	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 16:13	1
1,4-Dichlorobenzene	0.67	U	10	0.67	ug/L		10/18/17 19:58	10/20/17 16:13	1
1,2-Dichlorobenzene	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 16:13	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/18/17 19:58	10/20/17 16:13	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/18/17 19:58	10/20/17 16:13	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/18/17 19:58	10/20/17 16:13	1
Isophorone	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/20/17 16:13	1
Bis(2-chloroethoxy)methane	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/20/17 16:13	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/18/17 19:58	10/20/17 16:13	1
Naphthalene	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/20/17 16:13	1
4-Chloroaniline	0.74	U	10	0.74	ug/L		10/18/17 19:58	10/20/17 16:13	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/18/17 19:58	10/20/17 16:13	1

Client Sample ID: DDA-01

Lab Sample ID: 460-142955-6

Date Collected: 10/11/17 12:10
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/18/17 19:58	10/20/17 16:13	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/18/17 19:58	10/20/17 16:13	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/18/17 19:58	10/20/17 16:13	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 16:13	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:13	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 16:13	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/18/17 19:58	10/20/17 16:13	1
3-Nitroaniline	0.84	U	10	0.84	ug/L		10/18/17 19:58	10/20/17 16:13	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/18/17 19:58	10/20/17 16:13	1
Dibenzofuran	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/20/17 16:13	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/18/17 19:58	10/20/17 16:13	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:13	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/18/17 19:58	10/20/17 16:13	1
Fluorene	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/20/17 16:13	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/18/17 19:58	10/20/17 16:13	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/20/17 16:13	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:13	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 16:13	1
Anthracene	0.58	U ±	10	0.58	ug/L		10/18/17 19:58	10/20/17 16:13	1
Carbazole	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/20/17 16:13	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/18/17 19:58	10/20/17 16:13	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/18/17 19:58	10/20/17 16:13	1
Pyrene	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 16:13	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/20/17 16:13	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 16:13	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/18/17 19:58	10/20/17 16:13	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/18/17 19:58	10/20/17 16:13	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/20/17 16:13	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/18/17 19:58	10/20/17 16:13	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/18/17 19:58	10/20/17 16:13	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/18/17 19:58	10/20/17 16:13	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/18/17 19:58	10/20/17 16:13	1
Diphenyl ether	0.51	U	10	0.51	ug/L		10/18/17 19:58	10/20/17 16:13	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/18/17 19:58	10/20/17 16:13	1
Caprolactam	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 16:13	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/18/17 19:58	10/20/17 16:13	1
Bisphenol-A	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:13	1
N-Methylaniline	0.89	U	5.1	0.89	ug/L		10/18/17 19:58	10/20/17 16:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/18/17 19:58*	*10/20/17 16:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*90*		*51 - 108*	*10/18/17 19:58*	*10/20/17 16:13*	*1*
Phenol-d5	*41*	*X*	*14 - 39*	*10/18/17 19:58*	*10/20/17 16:13*	*1*
Terphenyl-d14	*99*		*40 - 148*	*10/18/17 19:58*	*10/20/17 16:13*	*1*
2,4,6-Tribromophenol	*130*		*26 - 139*	*10/18/17 19:58*	*10/20/17 16:13*	*1*
2-Fluorophenol	*53*		*25 - 58*	*10/18/17 19:58*	*10/20/17 16:13*	*1*
2-Fluorobiphenyl	*74*		*45 - 107*	*10/18/17 19:58*	*10/20/17 16:13*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: DDA-01

Lab Sample ID: 460-142955-6
Matrix: Water

Date Collected: 10/11/17 12:10
Date Received: 10/11/17 21:05

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	21700		150	92.1	ug/L		10/20/17 10:15	10/22/17 13:26	1
Manganese, Dissolved	1240		15.0	3.1	ug/L		10/20/17 10:15	10/22/17 13:26	1

Client Sample ID: DDA-10-US

Lab Sample ID: 460-142955-7
Matrix: Water

Date Collected: 10/11/17 14:20
Date Received: 10/11/17 21:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 20:39	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 20:39	1
Vinyl chloride	0.58	J	1.0	0.060	ug/L			10/21/17 20:39	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 20:39	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 20:39	1
Acetone	5.0 ~~1.1~~	~~J~~ U	5.0	1.1	ug/L			10/21/17 20:39	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 20:39	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 20:39	1
1,1-Dichloroethane	0.41	J	1.0	0.24	ug/L			10/21/17 20:39	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 20:39	1
cis-1,2-Dichloroethene	0.93	J	1.0	0.26	ug/L			10/21/17 20:39	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 20:39	1
1,2-Dichloroethane	0.36	J	1.0	0.25	ug/L			10/21/17 20:39	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 20:39	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 20:39	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 20:39	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 20:39	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 20:39	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 20:39	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 20:39	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 20:39	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 20:39	1
Benzene	74		1.0	0.090	ug/L			10/21/17 20:39	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 20:39	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 20:39	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 20:39	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 20:39	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 20:39	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 20:39	1
Toluene	0.66	J	1.0	0.25	ug/L			10/21/17 20:39	1
Chlorobenzene	1.6		1.0	0.24	ug/L			10/21/17 20:39	1
Ethylbenzene	29		1.0	0.30	ug/L			10/21/17 20:39	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 20:39	1
Xylenes, Total	38		2.0	0.28	ug/L			10/21/17 20:39	1
Ethyl ether	2.2		1.0	0.11	ug/L			10/21/17 20:39	1
MTBE	0.33	J	1.0	0.13	ug/L			10/21/17 20:39	1
Tetrahydrofuran	2.5		2.0	0.36	ug/L			10/21/17 20:39	1
Cyclohexane	6.0		1.0	0.26	ug/L			10/21/17 20:39	1
1,4-Dioxane	90		50	8.7	ug/L			10/21/17 20:39	1
1,2,4-Trimethylbenzene	9.9		1.0	0.23	ug/L			10/21/17 20:39	1
1,3,5-Trimethylbenzene	2.6		1.0	0.25	ug/L			10/21/17 20:39	1

Client Sample ID: DDA-10-US

Lab Sample ID: 460-142955-7

Date Collected: 10/11/17 14:20
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	4.5		1.0	0.32	ug/L			10/21/17 20:39	1
N-Propylbenzene	3.9		1.0	0.29	ug/L			10/21/17 20:39	1
Methylcyclohexane	7.3		1.0	0.22	ug/L			10/21/17 20:39	1
Indane	5.0		1.0	0.12	ug/L			10/21/17 20:39	1
Dichlorofluoromethane	10		1.0	0.21	ug/L			10/21/17 20:39	1
1,2,3-Trimethylbenzene	2.1		1.0	0.11	ug/L			10/21/17 20:39	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*5.8*	*J N*	*ug/L*		*10.11*	*620-14-4*		*10/21/17 20:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*74 - 132*		*10/21/17 20:39*	*1*
Bromofluorobenzene	*94*		*77 - 124*		*10/21/17 20:39*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/21/17 20:39*	*1*
Dibromofluoromethane (Surr)	*107*		*72 - 131*		*10/21/17 20:39*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/18/17 19:58	10/23/17 08:57	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/18/17 19:58	10/23/17 08:57	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/18/17 19:58	10/23/17 08:57	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/18/17 19:58	10/23/17 08:57	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/18/17 19:58	10/23/17 08:57	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/18/17 19:58	10/20/17 16:35	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/18/17 19:58	10/20/17 16:35	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/18/17 19:58	10/20/17 16:35	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/20/17 16:35	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/18/17 19:58	10/20/17 16:35	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/18/17 19:58	10/20/17 16:35	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/18/17 19:58	10/20/17 16:35	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/20/17 16:35	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/18/17 19:58	10/20/17 16:35	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/18/17 19:58	10/20/17 16:35	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/18/17 19:58	10/20/17 16:35	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/18/17 19:58	10/20/17 16:35	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/18/17 19:58	10/20/17 16:35	1
Bis(2-chloroethyl)ether	33		1.0	0.12	ug/L		10/18/17 19:58	10/20/17 16:35	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 16:35	1
1,4-Dichlorobenzene	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 16:35	1
1,2-Dichlorobenzene	0.83	U	10	0.83	ug/L		10/18/17 19:58	10/20/17 16:35	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/18/17 19:58	10/20/17 16:35	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/18/17 19:58	10/20/17 16:35	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/18/17 19:58	10/20/17 16:35	1
Isophorone	0.67	U	10	0.67	ug/L		10/18/17 19:58	10/20/17 16:35	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/18/17 19:58	10/20/17 16:35	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/18/17 19:58	10/20/17 16:35	1
Naphthalene	0.80	U	10	0.80	ug/L		10/18/17 19:58	10/20/17 16:35	1

Client Sample ID: DDA-10-US

Lab Sample ID: 460-142955-7

Date Collected: 10/11/17 14:20
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/18/17 19:58	10/20/17 16:35	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/18/17 19:58	10/20/17 16:35	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/18/17 19:58	10/20/17 16:35	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/20/17 16:35	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/20/17 16:35	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/18/17 19:58	10/20/17 16:35	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/18/17 19:58	10/20/17 16:35	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/18/17 19:58	10/20/17 16:35	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/18/17 19:58	10/20/17 16:35	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/20/17 16:35	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/18/17 19:58	10/20/17 16:35	1
Dibenzofuran	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 16:35	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/18/17 19:58	10/20/17 16:35	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:35	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/18/17 19:58	10/20/17 16:35	1
Fluorene	0.80	U	10	0.80	ug/L		10/18/17 19:58	10/20/17 16:35	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/18/17 19:58	10/20/17 16:35	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/18/17 19:58	10/20/17 16:35	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:35	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/18/17 19:58	10/20/17 16:35	1
Anthracene	0.57	U *	10	0.57	ug/L		10/18/17 19:58	10/20/17 16:35	1
Carbazole	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 16:35	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/20/17 16:35	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/18/17 19:58	10/20/17 16:35	1
Pyrene	0.83	U	10	0.83	ug/L		10/18/17 19:58	10/20/17 16:35	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/18/17 19:58	10/20/17 16:35	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:35	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/18/17 19:58	10/20/17 16:35	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/18/17 19:58	10/20/17 16:35	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/18/17 19:58	10/20/17 16:35	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/18/17 19:58	10/20/17 16:35	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/18/17 19:58	10/20/17 16:35	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/18/17 19:58	10/20/17 16:35	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/18/17 19:58	10/20/17 16:35	1
Diphenyl ether	0.50	U	10	0.50	ug/L		10/18/17 19:58	10/20/17 16:35	1
n,n'-Dimethylaniline	0.76	U	1.0	0.76	ug/L		10/18/17 19:58	10/20/17 16:35	1
Caprolactam	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 16:35	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/18/17 19:58	10/20/17 16:35	1
Bisphenol-A	10 ~~8.4~~	~~J~~ UJ	10	1.0	ug/L		10/18/17 19:58	10/20/17 16:35	1
N-Methylaniline	0.87	U	5.0	0.87	ug/L		10/18/17 19:58	10/20/17 16:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*9.6*	*J N*	*ug/L*		*1.71*	*123-91-1*	*10/18/17 19:58*	*10/20/17 16:35*	*1*
Urethane	*12*	*J N*	*ug/L*		*2.62*	*51-79-6*	*10/18/17 19:58*	*10/20/17 16:35*	*1*
Urea, tetramethyl-	*30*	*J N*	*ug/L*		*4.10*	*632-22-4*	*10/18/17 19:58*	*10/20/17 16:35*	*1*
2-Isopropoxyphenol	*39*	*J N*	*ug/L*		*5.47*	*4812-20-8*	*10/18/17 19:58*	*10/20/17 16:35*	*1*
2-Propanone, 1-phenoxy-	*7.3*	*J N*	*ug/L*		*5.75*	*621-87-4*	*10/18/17 19:58*	*10/20/17 16:35*	*1*
1-Propanol, 3-phenoxy-	*18*	*J N*	*ug/L*		*5.95*	*6180-61-6*	*10/18/17 19:58*	*10/20/17 16:35*	*1*
Unknown	*12*	*J*	*ug/L*		*6.39*		*10/18/17 19:58*	*10/20/17 16:35*	*1*
Unknown	*17*	*J*	*ug/L*		*6.49*		*10/18/17 19:58*	*10/20/17 16:35*	*1*

Client Sample ID: DDA-10-US

Lab Sample ID: 460-142955-7

Date Collected: 10/11/17 14:20
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	58	J	ug/L		7.13		10/18/17 19:58	10/20/17 16:35	1
Unknown	18	J	ug/L		7.43		10/18/17 19:58	10/20/17 16:35	1
Unknown	7.2	J	ug/L		7.88		10/18/17 19:58	10/20/17 16:35	1
Unknown	7.9	J	ug/L		7.96		10/18/17 19:58	10/20/17 16:35	1
Unknown	8.7	J	ug/L		11.85		10/18/17 19:58	10/20/17 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	86		51 - 108	10/18/17 19:58	10/20/17 16:35	1
Phenol-d5	42	X	14 - 39	10/18/17 19:58	10/20/17 16:35	1
Terphenyl-d14	78		40 - 148	10/18/17 19:58	10/20/17 16:35	1
2,4,6-Tribromophenol	129		26 - 139	10/18/17 19:58	10/20/17 16:35	1
2-Fluorophenol	50		25 - 58	10/18/17 19:58	10/20/17 16:35	1
2-Fluorobiphenyl	78		45 - 107	10/18/17 19:58	10/20/17 16:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	58800		150	92.1	ug/L		10/21/17 23:35	10/22/17 16:26	1
Manganese, Dissolved	4970		15.0	3.1	ug/L		10/21/17 23:35	10/22/17 16:26	1

Client Sample ID: MHW-1M

Lab Sample ID: 460-142955-8

Date Collected: 10/11/17 14:00
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 21:06	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 21:06	1
Vinyl chloride	0.29	J	1.0	0.060	ug/L			10/21/17 21:06	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 21:06	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 21:06	1
Acetone	1.1	U	5.0	1.1	ug/L			10/21/17 21:06	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 21:06	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 21:06	1
1,1-Dichloroethane	0.36	J	1.0	0.24	ug/L			10/21/17 21:06	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 21:06	1
cis-1,2-Dichloroethene	0.32	J	1.0	0.26	ug/L			10/21/17 21:06	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 21:06	1
1,2-Dichloroethane	0.50	J	1.0	0.25	ug/L			10/21/17 21:06	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 21:06	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 21:06	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 21:06	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 21:06	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 21:06	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 21:06	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 21:06	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 21:06	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 21:06	1
Benzene	73		1.0	0.090	ug/L			10/21/17 21:06	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 21:06	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 21:06	1

Client Sample ID: MHW-1M

Lab Sample ID: 460-142955-8

Date Collected: 10/11/17 14:00
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 21:06	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 21:06	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 21:06	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 21:06	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 21:06	1
Chlorobenzene	**5.3**		1.0	0.24	ug/L			10/21/17 21:06	1
Ethylbenzene	**0.44**	J	1.0	0.30	ug/L			10/21/17 21:06	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 21:06	1
Xylenes, Total	**1.1**	J	2.0	0.28	ug/L			10/21/17 21:06	1
Ethyl ether	**21**		1.0	0.11	ug/L			10/21/17 21:06	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 21:06	1
Tetrahydrofuran	**6.9**		2.0	0.36	ug/L			10/21/17 21:06	1
Cyclohexane	**0.40**	J	1.0	0.26	ug/L			10/21/17 21:06	1
1,4-Dioxane	**1200**		50	8.7	ug/L			10/21/17 21:06	1
1,2,4-Trimethylbenzene	**0.58**	J	1.0	0.23	ug/L			10/21/17 21:06	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 21:06	1
Isopropylbenzene	**2.9**		1.0	0.32	ug/L			10/21/17 21:06	1
N-Propylbenzene	**0.68**	J	1.0	0.29	ug/L			10/21/17 21:06	1
Methylcyclohexane	**0.40**	J	1.0	0.22	ug/L			10/21/17 21:06	1
Indane	**1.1**		1.0	0.12	ug/L			10/21/17 21:06	1
Dichlorofluoromethane	**4.6**		1.0	0.21	ug/L			10/21/17 21:06	1
1,2,3-Trimethylbenzene	**0.17**	J	1.0	0.11	ug/L			10/21/17 21:06	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 21:06*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*74 - 132*		*10/21/17 21:06*	*1*
Bromofluorobenzene	*93*		*77 - 124*		*10/21/17 21:06*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/21/17 21:06*	*1*
Dibromofluoromethane (Surr)	*112*		*72 - 131*		*10/21/17 21:06*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.019	U	0.052	0.019	ug/L		10/18/17 19:58	10/23/17 09:20	1
Benzo[a]pyrene	0.026	U	0.052	0.026	ug/L		10/18/17 19:58	10/23/17 09:20	1
Benzo[b]fluoranthene	0.020	U	0.052	0.020	ug/L		10/18/17 19:58	10/23/17 09:20	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		10/18/17 19:58	10/23/17 09:20	1
Pentachlorophenol	0.032	U	0.21	0.032	ug/L		10/18/17 19:58	10/23/17 09:20	1
Bis(2-chloroethyl)ether	**4.9**		0.021	0.017	ug/L		10/18/17 19:58	10/23/17 09:20	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**1.2**	J J+	10	0.43	ug/L		10/18/17 19:58	10/23/17 12:52	1
2-Chlorophenol	0.77	U	10	0.77	ug/L		10/18/17 19:58	10/23/17 12:52	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/18/17 19:58	10/23/17 12:52	1
4-Methylphenol	0.91	U	10	0.91	ug/L		10/18/17 19:58	10/23/17 12:52	1
2-Nitrophenol	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/23/17 12:52	1
2,4-Dimethylphenol	0.95	U	10	0.95	ug/L		10/18/17 19:58	10/23/17 12:52	1
2,4-Dichlorophenol	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/23/17 12:52	1

Client Sample ID: MHW-1M

Lab Sample ID: 460-142955-8

Date Collected: 10/11/17 14:00
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	0.79	U	10	0.79	ug/L		10/18/17 19:58	10/23/17 12:52	1
2,4,6-Trichlorophenol	0.55	U	10	0.55	ug/L		10/18/17 19:58	10/23/17 12:52	1
2,4,5-Trichlorophenol	0.51	U	10	0.51	ug/L		10/18/17 19:58	10/23/17 12:52	1
2,4-Dinitrophenol	2.5	U	21	2.5	ug/L		10/18/17 19:58	10/23/17 12:52	1
4-Nitrophenol	4.8	U	21	4.8	ug/L		10/18/17 19:58	10/23/17 12:52	1
4,6-Dinitro-2-methylphenol	2.1	U	21	2.1	ug/L		10/18/17 19:58	10/23/17 12:52	1
1,3-Dichlorobenzene	1.2	U	10	1.2	ug/L		10/18/17 19:58	10/23/17 12:52	1
1,4-Dichlorobenzene	0.69	U	10	0.69	ug/L		10/18/17 19:58	10/23/17 12:52	1
1,2-Dichlorobenzene	0.86	U	10	0.86	ug/L		10/18/17 19:58	10/23/17 12:52	1
N-Nitrosodi-n-propylamine	0.86	U	1.0	0.86	ug/L		10/18/17 19:58	10/23/17 12:52	1
Hexachloroethane	0.094	U	1.0	0.094	ug/L		10/18/17 19:58	10/23/17 12:52	1
Nitrobenzene	0.51	U	1.0	0.51	ug/L		10/18/17 19:58	10/23/17 12:52	1
Isophorone	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/23/17 12:52	1
Bis(2-chloroethoxy)methane	0.72	U	10	0.72	ug/L		10/18/17 19:58	10/23/17 12:52	1
1,2,4-Trichlorobenzene	0.64	U	1.0	0.64	ug/L		10/18/17 19:58	10/23/17 12:52	1
Naphthalene	0.83	U	10	0.83	ug/L		10/18/17 19:58	10/23/17 12:52	1
4-Chloroaniline	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/23/17 12:52	1
Hexachlorobutadiene	0.79	U	1.0	0.79	ug/L		10/18/17 19:58	10/23/17 12:52	1
2-Methylnaphthalene	0.92	U	10	0.92	ug/L		10/18/17 19:58	10/23/17 12:52	1
Hexachlorocyclopentadiene	0.64	U	10	0.64	ug/L		10/18/17 19:58	10/23/17 12:52	1
2-Chloronaphthalene	0.64	U	10	0.64	ug/L		10/18/17 19:58	10/23/17 12:52	1
2-Nitroaniline	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/23/17 12:52	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/23/17 12:52	1
Acenaphthylene	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/23/17 12:52	1
2,6-Dinitrotoluene	0.92	U	2.1	0.92	ug/L		10/18/17 19:58	10/23/17 12:52	1
3-Nitroaniline	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/23/17 12:52	1
Acenaphthene	0.92	U	10	0.92	ug/L		10/18/17 19:58	10/23/17 12:52	1
Dibenzofuran	0.89	U	10	0.89	ug/L		10/18/17 19:58	10/23/17 12:52	1
2,4-Dinitrotoluene	1.1	U	2.1	1.1	ug/L		10/18/17 19:58	10/23/17 12:52	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/23/17 12:52	1
4-Chlorophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/23/17 12:52	1
Fluorene	0.83	U	10	0.83	ug/L		10/18/17 19:58	10/23/17 12:52	1
4-Nitroaniline	0.50	U	10	0.50	ug/L		10/18/17 19:58	10/23/17 12:52	1
N-Nitrosodiphenylamine	0.77	U	10	0.77	ug/L		10/18/17 19:58	10/23/17 12:52	1
4-Bromophenyl phenyl ether	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/23/17 12:52	1
Phenanthrene	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/23/17 12:52	1
Anthracene	0.59	U *	10	0.59	ug/L		10/18/17 19:58	10/23/17 12:52	1
Carbazole	0.89	U	10	0.89	ug/L		10/18/17 19:58	10/23/17 12:52	1
Di-n-butyl phthalate	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/23/17 12:52	1
Fluoranthene	0.75	U	10	0.75	ug/L		10/18/17 19:58	10/23/17 12:52	1
Pyrene	0.86	U	10	0.86	ug/L		10/18/17 19:58	10/23/17 12:52	1
Butyl benzyl phthalate	0.63	U	10	0.63	ug/L		10/18/17 19:58	10/23/17 12:52	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/23/17 12:52	1
Chrysene	0.70	U	2.1	0.70	ug/L		10/18/17 19:58	10/23/17 12:52	1
Bis(2-ethylhexyl) phthalate	0.75	U	2.1	0.75	ug/L		10/18/17 19:58	10/23/17 12:52	1
Di-n-octyl phthalate	0.72	U	10	0.72	ug/L		10/18/17 19:58	10/23/17 12:52	1
Benzo[k]fluoranthene	0.19	U	1.0	0.19	ug/L		10/18/17 19:58	10/23/17 12:52	1
Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22	ug/L		10/18/17 19:58	10/23/17 12:52	1
Dibenz(a,h)anthracene	0.094	U	1.0	0.094	ug/L		10/18/17 19:58	10/23/17 12:52	1

Client Sample ID: MHW-1M

Lab Sample ID: 460-142955-8

Date Collected: 10/11/17 14:00
Date Received: 10/11/17 21:05

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		10/18/17 19:58	10/23/17 12:52	1
Diphenyl ether	0.52	U	10	0.52	ug/L		10/18/17 19:58	10/23/17 12:52	1
n,n'-Dimethylaniline	0.79	U	1.0	0.79	ug/L		10/18/17 19:58	10/23/17 12:52	1
Caprolactam	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/23/17 12:52	1
bis (2-chloroisopropyl) ether	0.97	U	10	0.97	ug/L		10/18/17 19:58	10/23/17 12:52	1
Bisphenol-A	10 ~~8.3~~	~~J~~ UJ	10	1.1	ug/L		10/18/17 19:58	10/23/17 12:52	1
N-Methylaniline	0.91	U	5.2	0.91	ug/L		10/18/17 19:58	10/23/17 12:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*100*	*J N*	*ug/L*		*1.97*	*123-91-1*	*10/18/17 19:58*	*10/23/17 12:52*	*1*
Unknown	*9.4*	*J*	*ug/L*		*7.18*		*10/18/17 19:58*	*10/23/17 12:52*	*1*
Hexadecanoic acid, butyl ester	*12*	*J N*	*ug/L*		*10.19*	*111-06-8*	*10/18/17 19:58*	*10/23/17 12:52*	*1*
Octadecanoic acid, butyl ester	*6.9*	*J N*	*ug/L*		*10.92*	*123-95-5*	*10/18/17 19:58*	*10/23/17 12:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*99*		*51 - 108*	*10/18/17 19:58*	*10/23/17 12:52*	*1*
Phenol-d5	*40*	*X*	*14 - 39*	*10/18/17 19:58*	*10/23/17 12:52*	*1*
Terphenyl-d14	*99*		*40 - 148*	*10/18/17 19:58*	*10/23/17 12:52*	*1*
2,4,6-Tribromophenol	*120*		*26 - 139*	*10/18/17 19:58*	*10/23/17 12:52*	*1*
2-Fluorophenol	*56*		*25 - 58*	*10/18/17 19:58*	*10/23/17 12:52*	*1*
2-Fluorobiphenyl	*93*		*45 - 107*	*10/18/17 19:58*	*10/23/17 12:52*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**6880**		150	92.1	ug/L		10/21/17 23:35	10/22/17 16:29	1
Manganese, Dissolved	**1210**		15.0	3.1	ug/L		10/21/17 23:35	10/22/17 16:29	1

Client Sample ID: TBGW_101217

Lab Sample ID: 460-142975-1

Date Collected: 10/12/17 00:00
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/21/17 23:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*10/21/17 23:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 144*		*10/21/17 23:49*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 17:59	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/21/17 17:59	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/21/17 17:59	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/21/17 17:59	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/21/17 17:59	1
Acetone	1.1	U	5.0	1.1	ug/L			10/21/17 17:59	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/21/17 17:59	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/21/17 17:59	1
1,1-Dichloroethane	0.24	U	1.0	0.24	ug/L			10/21/17 17:59	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/21/17 17:59	1

Client Sample ID: TBGW_101217

Lab Sample ID: 460-142975-1

Date Collected: 10/12/17 00:00
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/21/17 17:59	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/21/17 17:59	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/21/17 17:59	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/21/17 17:59	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/21/17 17:59	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/21/17 17:59	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/21/17 17:59	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/21/17 17:59	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/21/17 17:59	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/21/17 17:59	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/21/17 17:59	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/21/17 17:59	1
Benzene	0.090	U	1.0	0.090	ug/L			10/21/17 17:59	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/21/17 17:59	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/21/17 17:59	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/21/17 17:59	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/21/17 17:59	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/21/17 17:59	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/21/17 17:59	1
Toluene	0.25	U	1.0	0.25	ug/L			10/21/17 17:59	1
Chlorobenzene	0.24	U	1.0	0.24	ug/L			10/21/17 17:59	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/21/17 17:59	1
Styrene	0.17	U	1.0	0.17	ug/L			10/21/17 17:59	1
Xylenes, Total	0.28	U	2.0	0.28	ug/L			10/21/17 17:59	1
Ethyl ether	0.11	U	1.0	0.11	ug/L			10/21/17 17:59	1
MTBE	0.13	U	1.0	0.13	ug/L			10/21/17 17:59	1
Tetrahydrofuran	0.36	U	2.0	0.36	ug/L			10/21/17 17:59	1
Cyclohexane	0.26	U	1.0	0.26	ug/L			10/21/17 17:59	1
1,2,4-Trimethylbenzene	0.23	U	1.0	0.23	ug/L			10/21/17 17:59	1
1,3,5-Trimethylbenzene	0.25	U	1.0	0.25	ug/L			10/21/17 17:59	1
Isopropylbenzene	0.32	U	1.0	0.32	ug/L			10/21/17 17:59	1
N-Propylbenzene	0.29	U	1.0	0.29	ug/L			10/21/17 17:59	1
Methylcyclohexane	0.22	U	1.0	0.22	ug/L			10/21/17 17:59	1
Indane	0.12	U	1.0	0.12	ug/L			10/21/17 17:59	1
Dichlorofluoromethane	0.21	U	1.0	0.21	ug/L			10/21/17 17:59	1
1,2,3-Trimethylbenzene	0.11	U	1.0	0.11	ug/L			10/21/17 17:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/21/17 17:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*74 - 132*		*10/21/17 17:59*	*1*
Bromofluorobenzene	*91*		*77 - 124*		*10/21/17 17:59*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/21/17 17:59*	*1*
Dibromofluoromethane (Surr)	*119*		*72 - 131*		*10/21/17 17:59*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Delaware Sand & Gravel

TestAmerica Job ID: 460-142922-1
SDG: 142922

Client Sample ID: C-2D

Lab Sample ID: 460-142975-2

Date Collected: 10/12/17 10:50
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/23/17 15:32	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/23/17 15:32	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/23/17 15:32	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/23/17 15:32	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/23/17 15:32	1
Acetone	**8.3**		5.0	1.1	ug/L			10/23/17 15:32	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/23/17 15:32	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/23/17 15:32	1
1,1-Dichloroethane	**0.51**	J	1.0	0.24	ug/L			10/23/17 15:32	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/23/17 15:32	1
cis-1,2-Dichloroethene	**0.31**	J	1.0	0.26	ug/L			10/23/17 15:32	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/23/17 15:32	1
1,2-Dichloroethane	**0.47**	J	1.0	0.25	ug/L			10/23/17 15:32	1
2-Butanone	**2.2**	J	5.0	2.2	ug/L			10/23/17 15:32	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/23/17 15:32	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/23/17 15:32	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/23/17 15:32	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/23/17 15:32	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/23/17 15:32	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/23/17 15:32	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/23/17 15:32	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/23/17 15:32	1
Benzene	**2.9**		1.0	0.090	ug/L			10/23/17 15:32	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/23/17 15:32	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/23/17 15:32	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/23/17 15:32	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/23/17 15:32	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/23/17 15:32	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/23/17 15:32	1
Toluene	**2.2**		1.0	0.25	ug/L			10/23/17 15:32	1
Chlorobenzene	**19**		1.0	0.24	ug/L			10/23/17 15:32	1
Ethylbenzene	**0.71**	J	1.0	0.30	ug/L			10/23/17 15:32	1
Styrene	0.17	U	1.0	0.17	ug/L			10/23/17 15:32	1
Xylenes, Total	**5.0**		2.0	0.28	ug/L			10/23/17 15:32	1
Ethyl ether	**0.73**	J	1.0	0.11	ug/L			10/23/17 15:32	1
MTBE	0.13	U	1.0	0.13	ug/L			10/23/17 15:32	1
Tetrahydrofuran	**16**	* J+	2.0	0.36	ug/L			10/23/17 15:32	1
Cyclohexane	**1.2**		1.0	0.26	ug/L			10/23/17 15:32	1
1,4-Dioxane	**150**		50	8.7	ug/L			10/23/17 15:32	1
1,2,4-Trimethylbenzene	**1.3**		1.0	0.23	ug/L			10/23/17 15:32	1
1,3,5-Trimethylbenzene	**6.2**		1.0	0.25	ug/L			10/23/17 15:32	1
Isopropylbenzene	**0.67**	J	1.0	0.32	ug/L			10/23/17 15:32	1
N-Propylbenzene	**0.74**	J	1.0	0.29	ug/L			10/23/17 15:32	1
Methylcyclohexane	**0.72**	J	1.0	0.22	ug/L			10/23/17 15:32	1
Indane	**21**		1.0	0.12	ug/L			10/23/17 15:32	1
Dichlorofluoromethane	**2.0**		1.0	0.21	ug/L			10/23/17 15:32	1
1,2,3-Trimethylbenzene	**5.5**		1.0	0.11	ug/L			10/23/17 15:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-2-methyl-	*5.6*	*J N*	*ug/L*		*10.36*	*611-14-3*		*10/23/17 15:32*	*1*

Client Sample ID: C-2D

Lab Sample ID: 460-142975-2

Date Collected: 10/12/17 10:50
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
1,4-Benzenediol, diacetate	33	J N	ug/L		12.49	1205-91-0		10/23/17 15:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		74 - 132		10/23/17 15:32	1
Bromofluorobenzene	91		77 - 124		10/23/17 15:32	1
Toluene-d8 (Surr)	99		80 - 120		10/23/17 15:32	1
Dibromofluoromethane (Surr)	113		72 - 131		10/23/17 15:32	1

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.051	0.018	ug/L		10/18/17 19:58	10/23/17 09:42	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		10/18/17 19:58	10/23/17 09:42	1
Benzo[b]fluoranthene	0.019	U	0.051	0.019	ug/L		10/18/17 19:58	10/23/17 09:42	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/18/17 19:58	10/23/17 09:42	1
Pentachlorophenol	0.032	U	0.20	0.032	ug/L		10/18/17 19:58	10/23/17 09:42	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/18/17 19:58	10/20/17 17:20	1
2-Chlorophenol	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/20/17 17:20	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/18/17 19:58	10/20/17 17:20	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/18/17 19:58	10/20/17 17:20	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/18/17 19:58	10/20/17 17:20	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/18/17 19:58	10/20/17 17:20	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/18/17 19:58	10/20/17 17:20	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/18/17 19:58	10/20/17 17:20	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/18/17 19:58	10/20/17 17:20	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/18/17 19:58	10/20/17 17:20	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/18/17 19:58	10/20/17 17:20	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/18/17 19:58	10/20/17 17:20	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/18/17 19:58	10/20/17 17:20	1
Bis(2-chloroethyl)ether	16		1.0	0.12	ug/L		10/18/17 19:58	10/20/17 17:20	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 17:20	1
1,4-Dichlorobenzene	0.67	U	10	0.67	ug/L		10/18/17 19:58	10/20/17 17:20	1
1,2-Dichlorobenzene	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 17:20	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/18/17 19:58	10/20/17 17:20	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/18/17 19:58	10/20/17 17:20	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/18/17 19:58	10/20/17 17:20	1
Isophorone	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/20/17 17:20	1
Bis(2-chloroethoxy)methane	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/20/17 17:20	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/18/17 19:58	10/20/17 17:20	1
Naphthalene	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/20/17 17:20	1
4-Chloroaniline	0.74	U	10	0.74	ug/L		10/18/17 19:58	10/20/17 17:20	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/18/17 19:58	10/20/17 17:20	1
2-Methylnaphthalene	0.90	U	10	0.90	ug/L		10/18/17 19:58	10/20/17 17:20	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/18/17 19:58	10/20/17 17:20	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/18/17 19:58	10/20/17 17:20	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 17:20	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 17:20	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 17:20	1

Client Sample ID: C-2D

Lab Sample ID: 460-142975-2

Date Collected: 10/12/17 10:50
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/18/17 19:58	10/20/17 17:20	1
3-Nitroaniline	0.84	U	10	0.84	ug/L		10/18/17 19:58	10/20/17 17:20	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/18/17 19:58	10/20/17 17:20	1
Dibenzofuran	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/20/17 17:20	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/18/17 19:58	10/20/17 17:20	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 17:20	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/18/17 19:58	10/20/17 17:20	1
Fluorene	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/20/17 17:20	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/18/17 19:58	10/20/17 17:20	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/20/17 17:20	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 17:20	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 17:20	1
Anthracene	0.58	U-*	10	0.58	ug/L		10/18/17 19:58	10/20/17 17:20	1
Carbazole	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/20/17 17:20	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/18/17 19:58	10/20/17 17:20	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/18/17 19:58	10/20/17 17:20	1
Pyrene	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 17:20	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/20/17 17:20	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 17:20	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/18/17 19:58	10/20/17 17:20	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/18/17 19:58	10/20/17 17:20	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/20/17 17:20	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/18/17 19:58	10/20/17 17:20	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/18/17 19:58	10/20/17 17:20	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/18/17 19:58	10/20/17 17:20	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/18/17 19:58	10/20/17 17:20	1
Diphenyl ether	**4.6**	J	10	0.51	ug/L		10/18/17 19:58	10/20/17 17:20	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/18/17 19:58	10/20/17 17:20	1
Caprolactam	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 17:20	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/18/17 19:58	10/20/17 17:20	1
Bisphenol-A	**18**	J+	10	1.0	ug/L		10/18/17 19:58	10/20/17 17:20	1
N-Methylaniline	0.89	U	5.1	0.89	ug/L		10/18/17 19:58	10/20/17 17:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*13*	*J N*	*ug/L*		*1.70*	*123-91-1*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
1-Hexanol, 2-ethyl-	*20*	*J N*	*ug/L*		*4.41*	*104-76-7*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
Indane	*10*	*J N*	*ug/L*		*4.52*	*496-11-7*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
Unknown	*72*	*J*	*ug/L*		*6.07*		*10/18/17 19:58*	*10/20/17 17:20*	*1*
1H-Inden-1-one, 2,3-dihydro-	*8.8*	*J N*	*ug/L*		*6.21*	*83-33-0*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
Unknown	*57*	*J*	*ug/L*		*7.13*		*10/18/17 19:58*	*10/20/17 17:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*92*		*51 - 108*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
Phenol-d5	*46*	*X*	*14 - 39*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
Terphenyl-d14	*96*		*40 - 148*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
2,4,6-Tribromophenol	*133*		*26 - 139*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
2-Fluorophenol	*56*		*25 - 58*	*10/18/17 19:58*	*10/20/17 17:20*	*1*
2-Fluorobiphenyl	*75*		*45 - 107*	*10/18/17 19:58*	*10/20/17 17:20*	*1*

Client Sample ID: C-2D

Lab Sample ID: 460-142975-2
Matrix: Water

Date Collected: 10/12/17 10:50
Date Received: 10/12/17 19:30

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	10300		150	92.1	ug/L		10/21/17 23:35	10/22/17 16:33	1
Manganese, Dissolved	4430		15.0	3.1	ug/L		10/21/17 23:35	10/22/17 16:33	1

Client Sample ID: B-4DR

Lab Sample ID: 460-142975-3
Matrix: Water

Date Collected: 10/12/17 13:05
Date Received: 10/12/17 19:30

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	30		0.40	0.20	ug/L			10/22/17 07:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*55*	*X*	*72 - 133*		*10/22/17 07:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*138*		*71 - 144*		*10/22/17 07:15*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	2.2	U UJ	10	2.2	ug/L			10/22/17 14:08	10
Bromomethane	1.8	U UJ	10	1.8	ug/L			10/22/17 14:08	10
Vinyl chloride	0.60	U UJ	10	0.60	ug/L			10/22/17 14:08	10
Chloroethane	3.7	U UJ	10	3.7	ug/L			10/22/17 14:08	10
Methylene Chloride	2.1	U UJ	10	2.1	ug/L			10/22/17 14:08	10
Acetone	11	U UJ	50	11	ug/L			10/22/17 14:08	10
Carbon disulfide	2.2	U UJ	10	2.2	ug/L			10/22/17 14:08	10
1,1-Dichloroethene	3.4	U UJ	10	3.4	ug/L			10/22/17 14:08	10
1,1-Dichloroethane	2.4	U UJ	10	2.4	ug/L			10/22/17 14:08	10
trans-1,2-Dichloroethene	1.8	U UJ	10	1.8	ug/L			10/22/17 14:08	10
cis-1,2-Dichloroethene	2.6	U UJ	10	2.6	ug/L			10/22/17 14:08	10
Chloroform	2.2	U UJ	10	2.2	ug/L			10/22/17 14:08	10
1,2-Dichloroethane	2.6	J J-	10	2.5	ug/L			10/22/17 14:08	10
2-Butanone	22	U UJ	50	22	ug/L			10/22/17 14:08	10
1,1,1-Trichloroethane	2.8	U UJ	10	2.8	ug/L			10/22/17 14:08	10
Carbon tetrachloride	3.3	U UJ	10	3.3	ug/L			10/22/17 14:08	10
Bromodichloromethane	1.5	U UJ	10	1.5	ug/L			10/22/17 14:08	10
1,2-Dichloropropane	1.8	U UJ	10	1.8	ug/L			10/22/17 14:08	10
cis-1,3-Dichloropropene	1.6	U UJ	10	1.6	ug/L			10/22/17 14:08	10
Trichloroethene	2.2	U UJ	10	2.2	ug/L			10/22/17 14:08	10
Dibromochloromethane	2.2	U UJ	10	2.2	ug/L			10/22/17 14:08	10
1,1,2-Trichloroethane	0.80	U UJ	10	0.80	ug/L			10/22/17 14:08	10
Benzene	3.1	J J-	10	0.90	ug/L			10/22/17 14:08	10
trans-1,3-Dichloropropene	1.9	U UJ	10	1.9	ug/L			10/22/17 14:08	10
Bromoform	1.8	U UJ	10	1.8	ug/L			10/22/17 14:08	10
4-Methyl-2-pentanone	6.3	U UJ	50	6.3	ug/L			10/22/17 14:08	10
2-Hexanone	7.2	U UJ	50	7.2	ug/L			10/22/17 14:08	10
Tetrachloroethene	1.2	U UJ	10	1.2	ug/L			10/22/17 14:08	10
1,1,2,2-Tetrachloroethane	1.9	U UJ	10	1.9	ug/L			10/22/17 14:08	10
Toluene	2.8	J J-	10	2.5	ug/L			10/22/17 14:08	10
Chlorobenzene	2000	J-	10	2.4	ug/L			10/22/17 14:08	10
Ethylbenzene	9.4	J J-	10	3.0	ug/L			10/22/17 14:08	10
Styrene	1.7	U UJ	10	1.7	ug/L			10/22/17 14:08	10

Client Sample ID: B-4DR

Lab Sample ID: 460-142975-3

Date Collected: 10/12/17 13:05
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	170	J-	20	2.8	ug/L			10/22/17 14:08	10
Ethyl ether	1.1	U UJ	10	1.1	ug/L			10/22/17 14:08	10
MTBE	1.3	U UJ	10	1.3	ug/L			10/22/17 14:08	10
Tetrahydrofuran	3.6	U UJ	20	3.6	ug/L			10/22/17 14:08	10
Cyclohexane	4.6	J J-	10	2.6	ug/L			10/22/17 14:08	10
1,2,4-Trimethylbenzene	38	J-	10	2.3	ug/L			10/22/17 14:08	10
1,3,5-Trimethylbenzene	170	J-	10	2.5	ug/L			10/22/17 14:08	10
Isopropylbenzene	6.8	J J-	10	3.2	ug/L			10/22/17 14:08	10
N-Propylbenzene	6.7	J J-	10	2.9	ug/L			10/22/17 14:08	10
Methylcyclohexane	9.2	J J-	10	2.2	ug/L			10/22/17 14:08	10
Indane	110	J-	10	1.2	ug/L			10/22/17 14:08	10
Dichlorofluoromethane	2.1	U UJ	10	2.1	ug/L			10/22/17 14:08	10
1,2,3-Trimethylbenzene	120	J-	10	1.1	ug/L			10/22/17 14:08	10

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-2-methyl-	*130*	*J N*	*ug/L*		*10.35*	*611-14-3*		*10/22/17 14:08*	*10*
1,4-Benzenediol, diacetate	*2000*	*J N*	*ug/L*		*12.46*	*1205-91-0*		*10/22/17 14:08*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/22/17 14:08*	*10*
Bromofluorobenzene	*90*		*77 - 124*		*10/22/17 14:08*	*10*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/22/17 14:08*	*10*
Dibromofluoromethane (Surr)	*107*		*72 - 131*		*10/22/17 14:08*	*10*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.051	0.018	ug/L		10/18/17 19:58	10/23/17 10:05	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		10/18/17 19:58	10/23/17 10:05	1
Benzo[b]fluoranthene	0.019	U	0.051	0.019	ug/L		10/18/17 19:58	10/23/17 10:05	1
Hexachlorobenzene	0.0092	U	0.020	0.0092	ug/L		10/18/17 19:58	10/23/17 10:05	1
Pentachlorophenol	0.032	U	0.20	0.032	ug/L		10/18/17 19:58	10/23/17 10:05	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.42	U	10	0.42	ug/L		10/18/17 19:58	10/20/17 17:41	1
2-Chlorophenol	5.4	J	10	0.76	ug/L		10/18/17 19:58	10/20/17 17:41	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/18/17 19:58	10/20/17 17:41	1
4-Methylphenol	0.89	U	10	0.89	ug/L		10/18/17 19:58	10/20/17 17:41	1
2-Nitrophenol	0.60	U	10	0.60	ug/L		10/18/17 19:58	10/20/17 17:41	1
2,4-Dimethylphenol	0.93	U	10	0.93	ug/L		10/18/17 19:58	10/20/17 17:41	1
2,4-Dichlorophenol	0.64	U	10	0.64	ug/L		10/18/17 19:58	10/20/17 17:41	1
4-Chloro-3-methylphenol	0.78	U	10	0.78	ug/L		10/18/17 19:58	10/20/17 17:41	1
2,4,6-Trichlorophenol	0.54	U	10	0.54	ug/L		10/18/17 19:58	10/20/17 17:41	1
2,4,5-Trichlorophenol	0.50	U	10	0.50	ug/L		10/18/17 19:58	10/20/17 17:41	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/18/17 19:58	10/20/17 17:41	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/18/17 19:58	10/20/17 17:41	1
4,6-Dinitro-2-methylphenol	2.1	U	20	2.1	ug/L		10/18/17 19:58	10/20/17 17:41	1
Bis(2-chloroethyl)ether	16		1.0	0.12	ug/L		10/18/17 19:58	10/20/17 17:41	1
1,3-Dichlorobenzene	12		10	1.1	ug/L		10/18/17 19:58	10/20/17 17:41	1
1,4-Dichlorobenzene	52		10	0.67	ug/L		10/18/17 19:58	10/20/17 17:41	1

Client Sample ID: B-4DR

Lab Sample ID: 460-142975-3

Date Collected: 10/12/17 13:05
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	30		10	0.85	ug/L		10/18/17 19:58	10/20/17 17:41	1
N-Nitrosodi-n-propylamine	0.85	U	1.0	0.85	ug/L		10/18/17 19:58	10/20/17 17:41	1
Hexachloroethane	0.092	U	1.0	0.092	ug/L		10/18/17 19:58	10/20/17 17:41	1
Nitrobenzene	0.50	U	1.0	0.50	ug/L		10/18/17 19:58	10/20/17 17:41	1
Isophorone	0.68	U	10	0.68	ug/L		10/18/17 19:58	10/20/17 17:41	1
Bis(2-chloroethoxy)methane	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/20/17 17:41	1
1,2,4-Trichlorobenzene	0.62	U	1.0	0.62	ug/L		10/18/17 19:58	10/20/17 17:41	1
Naphthalene	20		10	0.82	ug/L		10/18/17 19:58	10/20/17 17:41	1
4-Chloroaniline	0.74	U	10	0.74	ug/L		10/18/17 19:58	10/20/17 17:41	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/18/17 19:58	10/20/17 17:41	1
2-Methylnaphthalene	1.9	J	10	0.90	ug/L		10/18/17 19:58	10/20/17 17:41	1
Hexachlorocyclopentadiene	0.62	U	10	0.62	ug/L		10/18/17 19:58	10/20/17 17:41	1
2-Chloronaphthalene	0.62	U	10	0.62	ug/L		10/18/17 19:58	10/20/17 17:41	1
2-Nitroaniline	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 17:41	1
Dimethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 17:41	1
Acenaphthylene	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 17:41	1
2,6-Dinitrotoluene	0.90	U	2.0	0.90	ug/L		10/18/17 19:58	10/20/17 17:41	1
3-Nitroaniline	0.84	U	10	0.84	ug/L		10/18/17 19:58	10/20/17 17:41	1
Acenaphthene	0.90	U	10	0.90	ug/L		10/18/17 19:58	10/20/17 17:41	1
Dibenzofuran	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/20/17 17:41	1
2,4-Dinitrotoluene	1.1	U	2.0	1.1	ug/L		10/18/17 19:58	10/20/17 17:41	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 17:41	1
4-Chlorophenyl phenyl ether	0.98	U	10	0.98	ug/L		10/18/17 19:58	10/20/17 17:41	1
Fluorene	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/20/17 17:41	1
4-Nitroaniline	0.49	U	10	0.49	ug/L		10/18/17 19:58	10/20/17 17:41	1
N-Nitrosodiphenylamine	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/20/17 17:41	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/20/17 17:41	1
Phenanthrene	0.66	U	10	0.66	ug/L		10/18/17 19:58	10/20/17 17:41	1
Anthracene	0.58	U *	10	0.58	ug/L		10/18/17 19:58	10/20/17 17:41	1
Carbazole	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/20/17 17:41	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/18/17 19:58	10/20/17 17:41	1
Fluoranthene	0.73	U	10	0.73	ug/L		10/18/17 19:58	10/20/17 17:41	1
Pyrene	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/20/17 17:41	1
Butyl benzyl phthalate	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/20/17 17:41	1
3,3'-Dichlorobenzidine	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 17:41	1
Chrysene	0.68	U	2.0	0.68	ug/L		10/18/17 19:58	10/20/17 17:41	1
Bis(2-ethylhexyl) phthalate	0.73	U	2.0	0.73	ug/L		10/18/17 19:58	10/20/17 17:41	1
Di-n-octyl phthalate	0.70	U	10	0.70	ug/L		10/18/17 19:58	10/20/17 17:41	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/18/17 19:58	10/20/17 17:41	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/18/17 19:58	10/20/17 17:41	1
Dibenz(a,h)anthracene	0.092	U	1.0	0.092	ug/L		10/18/17 19:58	10/20/17 17:41	1
Benzo[g,h,i]perylene	0.77	U	10	0.77	ug/L		10/18/17 19:58	10/20/17 17:41	1
Diphenyl ether	70		10	0.51	ug/L		10/18/17 19:58	10/20/17 17:41	1
n,n'-Dimethylaniline	0.78	U	1.0	0.78	ug/L		10/18/17 19:58	10/20/17 17:41	1
Caprolactam	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/20/17 17:41	1
bis (2-chloroisopropyl) ether	0.95	U	10	0.95	ug/L		10/18/17 19:58	10/20/17 17:41	1
Bisphenol-A	120		10	1.0	ug/L		10/18/17 19:58	10/20/17 17:41	1
N-Methylaniline	4.2	J	5.1	0.89	ug/L		10/18/17 19:58	10/20/17 17:41	1

Client Sample ID: B-4DR

Lab Sample ID: 460-142975-3

Date Collected: 10/12/17 13:05
Date Received: 10/12/17 19:30

Matrix: Water

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Benzene, 1,3-dimethyl-	66	J N	ug/L		3.27	108-38-3	10/18/17 19:58	10/20/17 17:41	1
Benzene, 1,3,5-trimethyl-	64	J N	ug/L		3.96	108-67-8	10/18/17 19:58	10/20/17 17:41	1
Benzene, 1-ethyl-2-methyl-	68	J N	ug/L		4.04	611-14-3	10/18/17 19:58	10/20/17 17:41	1
Benzene, 1,2,3-trimethyl-	46	J N	ug/L		4.40	526-73-8	10/18/17 19:58	10/20/17 17:41	1
Indane	60	J N	ug/L		4.52	496-11-7	10/18/17 19:58	10/20/17 17:41	1
Unknown	650	J	ug/L		6.11		10/18/17 19:58	10/20/17 17:41	1
Phenol, 4-ethyl-2-methoxy-	47	J N	ug/L		6.53	2785-89-9	10/18/17 19:58	10/20/17 17:41	1
Unknown	130	J	ug/L		6.70		10/18/17 19:58	10/20/17 17:41	1
Unknown	110	J	ug/L		6.77		10/18/17 19:58	10/20/17 17:41	1
Unknown	49	J	ug/L		6.79		10/18/17 19:58	10/20/17 17:41	1
Unknown	370	J	ug/L		7.16		10/18/17 19:58	10/20/17 17:41	1
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-tri-2-propenyl-	110	J N	ug/L		8.12	1025-15-6	10/18/17 19:58	10/20/17 17:41	1
Phenol, 2,3,5-tribromo-	79	J N	ug/L		8.14	57383-81-0	10/18/17 19:58	10/20/17 17:41	1
Unknown	170	J	ug/L		8.27		10/18/17 19:58	10/20/17 17:41	1
Urea, N,N'-dimethyl-N,N'-diphenyl-	70	J N	ug/L		8.98	611-92-7	10/18/17 19:58	10/20/17 17:41	1
Unknown	45	J	ug/L		11.30		10/18/17 19:58	10/20/17 17:41	1
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymeth	210	J N	ug/L		12.41	1675-54-3	10/18/17 19:58	10/20/17 17:41	1
Unknown	330	J	ug/L		12.58		10/18/17 19:58	10/20/17 17:41	1
Unknown	190	J	ug/L		12.76		10/18/17 19:58	10/20/17 17:41	1
Unknown	46	J	ug/L		14.01		10/18/17 19:58	10/20/17 17:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	84		51 - 108	10/18/17 19:58	10/20/17 17:41	1
Phenol-d5	38		14 - 39	10/18/17 19:58	10/20/17 17:41	1
Terphenyl-d14	74		40 - 148	10/18/17 19:58	10/20/17 17:41	1
2,4,6-Tribromophenol	121		26 - 139	10/18/17 19:58	10/20/17 17:41	1
2-Fluorophenol	49		25 - 58	10/18/17 19:58	10/20/17 17:41	1
2-Fluorobiphenyl	95		45 - 107	10/18/17 19:58	10/20/17 17:41	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	73800		150	92.1	ug/L		10/21/17 23:35	10/22/17 16:37	1
Manganese, Dissolved	4840		15.0	3.1	ug/L		10/21/17 23:35	10/22/17 16:37	1

Client Sample ID: C-4D

Lab Sample ID: 460-142975-4

Date Collected: 10/12/17 13:30
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 13:41	1
Bromomethane	0.18	U	1.0	0.18	ug/L			10/22/17 13:41	1
Vinyl chloride	0.060	U	1.0	0.060	ug/L			10/22/17 13:41	1
Chloroethane	0.37	U	1.0	0.37	ug/L			10/22/17 13:41	1
Methylene Chloride	0.21	U	1.0	0.21	ug/L			10/22/17 13:41	1
Acetone	1.1	U	5.0	1.1	ug/L			10/22/17 13:41	1
Carbon disulfide	0.22	U	1.0	0.22	ug/L			10/22/17 13:41	1
1,1-Dichloroethene	0.34	U	1.0	0.34	ug/L			10/22/17 13:41	1

Client Sample ID: C-4D

Lab Sample ID: 460-142975-4

Date Collected: 10/12/17 13:30
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.55	J	1.0	0.24	ug/L			10/22/17 13:41	1
trans-1,2-Dichloroethene	0.18	U	1.0	0.18	ug/L			10/22/17 13:41	1
cis-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/17 13:41	1
Chloroform	0.22	U	1.0	0.22	ug/L			10/22/17 13:41	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			10/22/17 13:41	1
2-Butanone	2.2	U	5.0	2.2	ug/L			10/22/17 13:41	1
1,1,1-Trichloroethane	0.28	U	1.0	0.28	ug/L			10/22/17 13:41	1
Carbon tetrachloride	0.33	U	1.0	0.33	ug/L			10/22/17 13:41	1
Bromodichloromethane	0.15	U	1.0	0.15	ug/L			10/22/17 13:41	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			10/22/17 13:41	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			10/22/17 13:41	1
Trichloroethene	0.22	U	1.0	0.22	ug/L			10/22/17 13:41	1
Dibromochloromethane	0.22	U	1.0	0.22	ug/L			10/22/17 13:41	1
1,1,2-Trichloroethane	0.080	U	1.0	0.080	ug/L			10/22/17 13:41	1
Benzene	21		1.0	0.090	ug/L			10/22/17 13:41	1
trans-1,3-Dichloropropene	0.19	U	1.0	0.19	ug/L			10/22/17 13:41	1
Bromoform	0.18	U	1.0	0.18	ug/L			10/22/17 13:41	1
4-Methyl-2-pentanone	0.63	U	5.0	0.63	ug/L			10/22/17 13:41	1
2-Hexanone	0.72	U	5.0	0.72	ug/L			10/22/17 13:41	1
Tetrachloroethene	0.12	U	1.0	0.12	ug/L			10/22/17 13:41	1
1,1,2,2-Tetrachloroethane	0.19	U	1.0	0.19	ug/L			10/22/17 13:41	1
Toluene	0.35	J	1.0	0.25	ug/L			10/22/17 13:41	1
Chlorobenzene	29		1.0	0.24	ug/L			10/22/17 13:41	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/17 13:41	1
Styrene	0.17	U	1.0	0.17	ug/L			10/22/17 13:41	1
Xylenes, Total	1.1	J	2.0	0.28	ug/L			10/22/17 13:41	1
Ethyl ether	0.83	J	1.0	0.11	ug/L			10/22/17 13:41	1
MTBE	0.13	U	1.0	0.13	ug/L			10/22/17 13:41	1
Tetrahydrofuran	15		2.0	0.36	ug/L			10/22/17 13:41	1
Cyclohexane	23		1.0	0.26	ug/L			10/22/17 13:41	1
1,4-Dioxane	79		50	8.7	ug/L			10/22/17 13:41	1
1,2,4-Trimethylbenzene	1.3		1.0	0.23	ug/L			10/22/17 13:41	1
1,3,5-Trimethylbenzene	0.60	J	1.0	0.25	ug/L			10/22/17 13:41	1
Isopropylbenzene	21		1.0	0.32	ug/L			10/22/17 13:41	1
N-Propylbenzene	20		1.0	0.29	ug/L			10/22/17 13:41	1
Methylcyclohexane	32		1.0	0.22	ug/L			10/22/17 13:41	1
Indane	62		1.0	0.12	ug/L			10/22/17 13:41	1
Dichlorofluoromethane	2.8		1.0	0.21	ug/L			10/22/17 13:41	1
1,2,3-Trimethylbenzene	23		1.0	0.11	ug/L			10/22/17 13:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*8.3*	*J*	*ug/L*		*4.50*			*10/22/17 13:41*	*1*
Unknown	*12*	*J*	*ug/L*		*4.65*			*10/22/17 13:41*	*1*
Isopropylcyclobutane	*9.4*	*J N*	*ug/L*		*4.77*	*872-56-0*		*10/22/17 13:41*	*1*
Benzene, 1,2-dichloro-	*10*	*J N*	*ug/L*		*11.05*	*95-50-1*		*10/22/17 13:41*	*1*
Benzene, 2-ethyl-1,4-dimethyl-	*7.0*	*J N*	*ug/L*		*11.23*	*1758-88-9*		*10/22/17 13:41*	*1*
1,4-Benzenediol, diacetate	*130*	*J N*	*ug/L*		*12.47*	*1205-91-0*		*10/22/17 13:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/22/17 13:41*	*1*

Client Sample ID: C-4D

Lab Sample ID: 460-142975-4

Date Collected: 10/12/17 13:30
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Bromofluorobenzene	*93*		*77 - 124*		*10/22/17 13:41*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/22/17 13:41*	*1*
Dibromofluoromethane (Surr)	*105*		*72 - 131*		*10/22/17 13:41*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.018	U	0.050	0.018	ug/L		10/18/17 19:58	10/23/17 10:27	1
Benzo[a]pyrene	0.025	U	0.050	0.025	ug/L		10/18/17 19:58	10/23/17 10:27	1
Benzo[b]fluoranthene	0.019	U	0.050	0.019	ug/L		10/18/17 19:58	10/23/17 10:27	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		10/18/17 19:58	10/23/17 10:27	1
Pentachlorophenol	0.031	U	0.20	0.031	ug/L		10/18/17 19:58	10/23/17 10:27	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.41	U	10	0.41	ug/L		10/18/17 19:58	10/23/17 13:13	1
2-Chlorophenol	0.74	U	10	0.74	ug/L		10/18/17 19:58	10/23/17 13:13	1
2-Methylphenol	1.3	U	10	1.3	ug/L		10/18/17 19:58	10/23/17 13:13	1
4-Methylphenol	0.87	U	10	0.87	ug/L		10/18/17 19:58	10/23/17 13:13	1
2-Nitrophenol	0.59	U	10	0.59	ug/L		10/18/17 19:58	10/23/17 13:13	1
2,4-Dimethylphenol	0.91	U	10	0.91	ug/L		10/18/17 19:58	10/23/17 13:13	1
2,4-Dichlorophenol	0.63	U	10	0.63	ug/L		10/18/17 19:58	10/23/17 13:13	1
4-Chloro-3-methylphenol	0.76	U	10	0.76	ug/L		10/18/17 19:58	10/23/17 13:13	1
2,4,6-Trichlorophenol	0.53	U	10	0.53	ug/L		10/18/17 19:58	10/23/17 13:13	1
2,4,5-Trichlorophenol	0.49	U	10	0.49	ug/L		10/18/17 19:58	10/23/17 13:13	1
2,4-Dinitrophenol	2.4	U	20	2.4	ug/L		10/18/17 19:58	10/23/17 13:13	1
4-Nitrophenol	4.7	U	20	4.7	ug/L		10/18/17 19:58	10/23/17 13:13	1
4,6-Dinitro-2-methylphenol	2.0	U	20	2.0	ug/L		10/18/17 19:58	10/23/17 13:13	1
Bis(2-chloroethyl)ether	**94**		1.0	0.12	ug/L		10/18/17 19:58	10/23/17 13:13	1
1,3-Dichlorobenzene	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/23/17 13:13	1
1,4-Dichlorobenzene	**6.2**	**J**	10	0.66	ug/L		10/18/17 19:58	10/23/17 13:13	1
1,2-Dichlorobenzene	**5.5**	**J**	10	0.83	ug/L		10/18/17 19:58	10/23/17 13:13	1
N-Nitrosodi-n-propylamine	0.83	U	1.0	0.83	ug/L		10/18/17 19:58	10/23/17 13:13	1
Hexachloroethane	0.090	U	1.0	0.090	ug/L		10/18/17 19:58	10/23/17 13:13	1
Nitrobenzene	0.49	U	1.0	0.49	ug/L		10/18/17 19:58	10/23/17 13:13	1
Isophorone	0.67	U	10	0.67	ug/L		10/18/17 19:58	10/23/17 13:13	1
Bis(2-chloroethoxy)methane	0.69	U	10	0.69	ug/L		10/18/17 19:58	10/23/17 13:13	1
1,2,4-Trichlorobenzene	0.61	U	1.0	0.61	ug/L		10/18/17 19:58	10/23/17 13:13	1
Naphthalene	**2.1**	**J**	10	0.80	ug/L		10/18/17 19:58	10/23/17 13:13	1
4-Chloroaniline	0.73	U	10	0.73	ug/L		10/18/17 19:58	10/23/17 13:13	1
Hexachlorobutadiene	0.76	U	1.0	0.76	ug/L		10/18/17 19:58	10/23/17 13:13	1
2-Methylnaphthalene	0.88	U	10	0.88	ug/L		10/18/17 19:58	10/23/17 13:13	1
Hexachlorocyclopentadiene	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/23/17 13:13	1
2-Chloronaphthalene	0.61	U	10	0.61	ug/L		10/18/17 19:58	10/23/17 13:13	1
2-Nitroaniline	0.65	U	10	0.65	ug/L		10/18/17 19:58	10/23/17 13:13	1
Dimethyl phthalate	0.98	U	10	0.98	ug/L		10/18/17 19:58	10/23/17 13:13	1
Acenaphthylene	0.65	U	10	0.65	ug/L		10/18/17 19:58	10/23/17 13:13	1
2,6-Dinitrotoluene	0.88	U	2.0	0.88	ug/L		10/18/17 19:58	10/23/17 13:13	1
3-Nitroaniline	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/23/17 13:13	1
Acenaphthene	0.88	U	10	0.88	ug/L		10/18/17 19:58	10/23/17 13:13	1

Client Sample ID: C-4D

Lab Sample ID: 460-142975-4

Date Collected: 10/12/17 13:30
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/23/17 13:13	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/18/17 19:58	10/23/17 13:13	1
Diethyl phthalate	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/23/17 13:13	1
4-Chlorophenyl phenyl ether	0.96	U	10	0.96	ug/L		10/18/17 19:58	10/23/17 13:13	1
Fluorene	0.80	U	10	0.80	ug/L		10/18/17 19:58	10/23/17 13:13	1
4-Nitroaniline	0.48	U	10	0.48	ug/L		10/18/17 19:58	10/23/17 13:13	1
N-Nitrosodiphenylamine	0.74	U	10	0.74	ug/L		10/18/17 19:58	10/23/17 13:13	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/23/17 13:13	1
Phenanthrene	0.65	U	10	0.65	ug/L		10/18/17 19:58	10/23/17 13:13	1
Anthracene	0.57	U *	10	0.57	ug/L		10/18/17 19:58	10/23/17 13:13	1
Carbazole	0.85	U	10	0.85	ug/L		10/18/17 19:58	10/23/17 13:13	1
Di-n-butyl phthalate	0.82	U	10	0.82	ug/L		10/18/17 19:58	10/23/17 13:13	1
Fluoranthene	0.72	U	10	0.72	ug/L		10/18/17 19:58	10/23/17 13:13	1
Pyrene	0.83	U	10	0.83	ug/L		10/18/17 19:58	10/23/17 13:13	1
Butyl benzyl phthalate	0.60	U	10	0.60	ug/L		10/18/17 19:58	10/23/17 13:13	1
3,3'-Dichlorobenzidine	1.0	U	10	1.0	ug/L		10/18/17 19:58	10/23/17 13:13	1
Chrysene	0.67	U	2.0	0.67	ug/L		10/18/17 19:58	10/23/17 13:13	1
Bis(2-ethylhexyl) phthalate	0.72	U	2.0	0.72	ug/L		10/18/17 19:58	10/23/17 13:13	1
Di-n-octyl phthalate	0.69	U	10	0.69	ug/L		10/18/17 19:58	10/23/17 13:13	1
Benzo[k]fluoranthene	0.18	U	1.0	0.18	ug/L		10/18/17 19:58	10/23/17 13:13	1
Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21	ug/L		10/18/17 19:58	10/23/17 13:13	1
Dibenz(a,h)anthracene	0.090	U	1.0	0.090	ug/L		10/18/17 19:58	10/23/17 13:13	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		10/18/17 19:58	10/23/17 13:13	1
Diphenyl ether	**12**		10	0.50	ug/L		10/18/17 19:58	10/23/17 13:13	1
n,n'-Dimethylaniline	**2.9**		1.0	0.76	ug/L		10/18/17 19:58	10/23/17 13:13	1
Caprolactam	1.1	U	10	1.1	ug/L		10/18/17 19:58	10/23/17 13:13	1
bis (2-chloroisopropyl) ether	0.93	U	10	0.93	ug/L		10/18/17 19:58	10/23/17 13:13	1
Bisphenol-A	**82**		10	1.0	ug/L		10/18/17 19:58	10/23/17 13:13	1
N-Methylaniline	**3.1**	J	5.0	0.87	ug/L		10/18/17 19:58	10/23/17 13:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, chloro-	*12*	*J N*	*ug/L*		*3.13*	*108-90-7*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Benzene, (1-methylethyl)-	*11*	*J N*	*ug/L*		*3.81*	*98-82-8*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Benzene, 1,2,3-trimethyl-	*14*	*J N*	*ug/L*		*4.61*	*526-73-8*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Indane	*40*	*J N*	*ug/L*		*4.72*	*496-11-7*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*9.2*	*J*	*ug/L*		*6.02*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
1,4-Benzenediol, diacetate	*140*	*J N*	*ug/L*		*6.18*	*1205-91-0*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*20*	*J*	*ug/L*		*6.34*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	*18*	*J N*	*ug/L*		*6.75*	*827-16-7*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*160*	*J*	*ug/L*		*7.18*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*9.4*	*J*	*ug/L*		*7.25*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*11*	*J*	*ug/L*		*7.31*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*25*	*J*	*ug/L*		*7.48*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-tri-2-propenyl-	*25*	*J N*	*ug/L*		*8.13*	*1025-15-6*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*14*	*J*	*ug/L*		*8.28*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
Urea, N,N'-dimethyl-N,N'-diphenyl-	*16*	*J N*	*ug/L*		*8.97*	*611-92-7*	*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*12*	*J*	*ug/L*		*11.21*		*10/18/17 19:58*	*10/23/17 13:13*	*1*
Unknown	*12*	*J*	*ug/L*		*11.35*		*10/18/17 19:58*	*10/23/17 13:13*	*1*

Client Sample ID: C-4D

Lab Sample ID: 460-142975-4

Date Collected: 10/12/17 13:30
Date Received: 10/12/17 19:30

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	20	J	ug/L		12.30		10/18/17 19:58	10/23/17 13:13	1
Unknown	37	J	ug/L		12.47		10/18/17 19:58	10/23/17 13:13	1
Unknown	31	J	ug/L		12.65		10/18/17 19:58	10/23/17 13:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	93		51 - 108	10/18/17 19:58	10/23/17 13:13	1
Phenol-d5	36		14 - 39	10/18/17 19:58	10/23/17 13:13	1
Terphenyl-d14	85		40 - 148	10/18/17 19:58	10/23/17 13:13	1
2,4,6-Tribromophenol	120		26 - 139	10/18/17 19:58	10/23/17 13:13	1
2-Fluorophenol	50		25 - 58	10/18/17 19:58	10/23/17 13:13	1
2-Fluorobiphenyl	90		45 - 107	10/18/17 19:58	10/23/17 13:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	22600		150	92.1	ug/L		10/21/17 23:35	10/22/17 16:41	1
Manganese, Dissolved	2090		15.0	3.1	ug/L		10/21/17 23:35	10/22/17 16:41	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G

TestAmerica Job ID: 460-147305-1

Client Sample ID: AWC-E2(140)

Lab Sample ID: 460-147305-1
Date Collected: 12/18/17 09:50
Matrix: Water
Date Received: 12/18/17 19:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	5550	J+	150	92.1	ug/L		12/23/17 10:17	12/23/17 19:45	1
Manganese, Dissolved	718		15.0	3.1	ug/L		12/23/17 10:17	12/23/17 19:45	1

Client Sample ID: AWC-E2(165)

Lab Sample ID: 460-147305-2
Date Collected: 12/18/17 11:05
Matrix: Water
Date Received: 12/18/17 19:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2590	J+	150	92.1	ug/L		12/23/17 10:17	12/23/17 19:49	1
Manganese, Dissolved	424		15.0	3.1	ug/L		12/23/17 10:17	12/23/17 19:49	1

Client Sample ID: AWC-E1(132)

Lab Sample ID: 460-147305-3
Date Collected: 12/18/17 12:25
Matrix: Water
Date Received: 12/18/17 19:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7210	J+	150	92.1	ug/L		12/23/17 09:47	12/23/17 18:44	1
Manganese, Dissolved	1140		15.0	3.1	ug/L		12/23/17 09:47	12/23/17 18:44	1

Client Sample ID: AWC-E1(156)

Lab Sample ID: 460-147305-4
Date Collected: 12/18/17 13:45
Matrix: Water
Date Received: 12/18/17 19:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	23100		150	92.1	ug/L		12/23/17 10:17	12/23/17 19:53	1
Manganese, Dissolved	1040		15.0	3.1	ug/L		12/23/17 10:17	12/23/17 19:53	1

Client Sample ID: RBGW_121817

Lab Sample ID: 460-147305-5
Date Collected: 12/18/17 14:55
Matrix: Water
Date Received: 12/18/17 19:50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1380		150	92.1	ug/L		12/27/17 08:01	12/27/17 22:35	1
Manganese	9.0	J	15.0	3.1	ug/L		12/27/17 08:01	12/27/17 22:35	1

Client Sample ID: FDGW_121817

Lab Sample ID: 460-147305-6
Date Collected: 12/18/17 00:00
Matrix: Water
Date Received: 12/18/17 19:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	5550	J+	150	92.1	ug/L		12/23/17 10:17	12/23/17 20:13	1
Manganese, Dissolved	718		15.0	3.1	ug/L		12/23/17 10:17	12/23/17 20:13	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G

TestAmerica Job ID: 460-147305-1

Client Sample ID: UPA-3D

Lab Sample ID: 460-147305-7

Date Collected: 12/18/17 16:25
Date Received: 12/18/17 19:50

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	92.1	U	150	92.1	ug/L		12/23/17 10:17	12/23/17 19:57	1
Manganese, Dissolved	17.2		15.0	3.1	ug/L		12/23/17 10:17	12/23/17 19:57	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G

TestAmerica Job ID: 460-147424-1

Client Sample ID: MW-26N

Lab Sample ID: 460-147424-1

Date Collected: 12/19/17 10:30
Date Received: 12/21/17 10:48

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	92.1	U	150	92.1	ug/L		12/27/17 09:12	12/27/17 21:40	1
Manganese, Dissolved	170		15.0	3.1	ug/L		12/27/17 09:12	12/27/17 21:40	1

APPENDIX B
SUMMARY OF DETECTED COMPOUNDS

APPENDIX B-1

SUMMARY OF DETECTED COMPOUNDS

Summary of Detected Compounds – September-October 2017 Groundwater

Appendix B-1
Summary of Detected Compounds - September 2017 - October 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							DDA Extraction Wells																										DDA Monitoring Wells								
						Sample ID	BG-1			B-4DR			C-18D			C-19D			C-20D			C-2D			C-4D			C-30			B-2D			B-3D			C-1D		
						Sample Date	10/9/2017			10/12/2017			10/9/2017			10/9/2017			10/9/2017			10/12/2017			10/12/2017			10/9/2017			10/6/2017			10/6/2017			10/6/2017		
						N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	[redacted]	MCL	RSL HQ=1.0	RSL HQ=0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
VOCs																																							
1,1,1-Trichloroethane	ug/L	71-55-6	NE	200	8000	800		U	1		UJ	10		U	10		U	1		U	1		U	1		U	1		U	10		U	1		U	1		U	1
1,1-Dichloroethane	ug/L	75-34-3	NE	NE	2.7	2.7	0.27	J	1		UJ	10		U	10	0.25	J	1		U	1	0.51	J	1	0.55	J	1	3	J	10		U	1	0.59	J	1	0.65	J	1
1,2,3-Trimethylbenzene	ug/L	526-73-8	NE	NE	10	1.0	21		1	120	J-	10	20		10	1.3		1		U	1	5.5		1	23		1	26		10	0.61	J	1	0.68	J	1	3.1		1
1,2,4-Trimethylbenzene	ug/L	95-63-6	5.7	NE	15	1.5	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.95	J	1		U	1	1.3		1	1.3		1	[redacted]	[redacted]	[redacted]	1		1	1.3		1	[redacted]	[redacted]	[redacted]
1,2-Dichloroethane	ug/L	107-06-2	NE	5	0.17	0.17		U	1	2.6	J-	10		U	10	0.43	J	1	1.3		1	0.47	J	1		U	1	12		10	0.4	J	1	78		1		U	1
1,3,5-Trimethylbenzene	ug/L	108-67-8	6.1	NE	120	12	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.46	J	1	0.34	J	1	[redacted]	[redacted]	[redacted]	0.6	J	1	[redacted]	[redacted]	[redacted]	0.44	J	1	0.48	J	1	0.78	J	1
1,3-Dichlorobenzene	ug/L	541-73-1	NE	NE	NE	NE		U	10	12		10		U	10		U	10		U	10		U	10		U	10		U	10		U	11		U	10		U	52
1,4-Dioxane	ug/L	123-91-1	4.6	NE	0.78	0.78	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2-Butanone	ug/L	78-93-3	NE	NE	5600	560		U	5		UJ	50		U	50		U	5		U	5	2.2	J	5		U	5		U	50		U	5		U	5		U	5
Acetone	ug/L	67-64-1	NE	NE	14000	1400		U	5		UJ	50		U	50		U	5		U	5	8.3		5		U	5		U	50		U	5		U	5	6.1	U	5
Benzene	ug/L	71-43-2	4.6	5	0.45	0.45	[redacted]	[redacted]	[redacted]	3.1	J-	10	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	4		1	2.9		1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Carbon Disulfide	ug/L	75-15-0	NE	NE	810	81		U	1		UJ	10		U	10		U	1		U	1		U	1		U	1		U	10		U	1		U	1		U	1
Chlorobenzene	ug/L	108-90-7	NE	100	78	7.8	2.7		1	2000	J-	10	31		10	6.2		1	7.1		1	19		1	29		1	36		10	7.6		1	18		1	27		1
Chloroethane	ug/L	75-00-3	NE	NE	21000	2100		U	1		UJ	10		U	10		U	1		U	1		U	1		U	1		U	10		U	1	1.4		1		U	1
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	70.0	36	3.6	0.58	J	1		UJ	10	33		10	0.28	J	1	0.42	J	1	0.31	J	1		U	1	79		10	0.4	J	1	1.2		1		U	1
Cyclohexane	ug/L	110-82-7	NE	NE	13000	1300	5.4		1	4.6	J-	10		U	10		U	1	0.52	J	1	1.2		1	23		1		U	10		U	1	1.1		1	4		1
Dichlorofluoromethane	ug/L	75-43-4	NE	NE	NE	NE	0.89	J	1		UJ	10		U	10	0.36	J	1	1		1	2		1	2.8		1		U	10	1.4		1	7		1	0.71	J	1
Diethyl Ether	ug/L	60-29-7	NE	NE	3900	390	0.53	J	1		UJ	10		U	10	1.8		1	2.7		1	0.73	J	1	0.83	J	1		U	10	3.4		1	2.1		1	0.62	J	1
Ethylbenzene	ug/L	100-41-4	15	700	1.5	1.5	3.1		1	9.4	J-	10	[redacted]	[redacted]	[redacted]		U	1		U	1	0.71	J	1		U	1	[redacted]	[redacted]	[redacted]		U	1		U	1	11		1
Indane	ug/L	496-11-7	NE	NE	NE	NE	12		1	110	J-	10	36		10	1.6		1	2.4		1	21		1	62		1	15		10	5.9		1	8		1	110		1
Isopropylbenzene	ug/L	98-82-8	NE	NE	450	45	8.5		1	6.8	J-	10	5.8	J	10	0.38	J	1	0.84	J	1	0.67	J	1	21		1		U	10	1.4		1	3.5		1	17		1
Methyl Cyclohexane	ug/L	108-87-2	NE	NE	NE	NE	9.2		1	9.2	J-	10	5.8	J	10		U	1	0.51	J	1	0.72	J	1	32		1		U	10		U	1	1.8		1	5.8		1
Methyl tert-Butyl Ether	ug/L	1634-04-4	NE	NE	14	14	0.5	J	1		UJ	10		U	10		U	1		U	1		U	1		U	1		U	10	0.28	J	1		U	1		U	1
Methylene Chloride	ug/L	75-09-2	NE	5.00	11	11		U	1		UJ	10		U	10		U	1		U	1		U	1		U	1		U	10		U	1		U	1		U	1
n-Propylbenzene	ug/L	103-65-1	NE	NE	660	66	14		1	6.7	J-	10	10		10	0.43	J	1	0.79	J	1	0.74	J	1	20		1	5	J	10	0.32	J	1	0.84	J	1	30		1
Tetrachloroethene	ug/L	127-18-4	NE	5	11	4.1		U	1		UJ	10		U	10		U	1	0.26	J	1		U	1		U	1		U	10		U	1		U	1		U	1
Tetrahydrofuran	ug/L	109-99-9	NE	NE	3400	340	6.5		2		UJ	20		U	20	4.3		2		U	2	16	J+	2	15		2		U	20	4.5		2	9.8		2	29		2
Toluene	ug/L	108-88-3	NE	1000	1100	110	19		1	2.8	J-	10	3500		10	0.27	J	1		U	1	2.2		1	0.35	J	1	2700		10		U	1		U	1	0.57	J	1
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	100	360	36		U	1		UJ	10		U	10		U	1		U	1		U	1		U	1		U	10		U	1		U	1		U	1
Trichloroethene	ug/L	79-01-6	NE	5.00	0.49	0.28	0.27	J	1		UJ	10		U	10		U	1	0.38	J	1		U	1		U	1		U	10		U	1	1.6		1		U	1
Vinyl Chloride	ug/L	75-01-4	NE	2.00	0.019	0.019		U	1		UJ	10	2.6	J	10		U	1		U	1		U	1		U	1	2.7	J	10		U	1		U	1		U	1
Xylenes, Total	ug/L	1330-20-7	21	10000	190	19	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	1.1	J	2		U	2	5		2	1.1	J	2	[redacted]	[redacted]	[redacted]	3.2		2	4.2		2	[redacted]	[redacted]	[redacted]
SVOCs																																							
1,2,4-Trichlorobenzene	ug/L	120-82-1	NE	70	1.1	0.40		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1.1		U	1		U	5.2
1,2-Dichlorobenzene	ug/L	95-50-1	NE	600	300	30		U	10	30		10		U	10		U	10		U	10		U	10	5.5	J	10		U	10		U	11	3	J	10		U	52
1,4-Dichlorobenzene	ug/L	106-46-7	NE	75	0.48	0.48		U	10	52		10		U	10		U	10		U	10		U	10	6.2	J	10		U	10		U	11	3	J	10		U	52
2,4-Dimethylphenol	ug/L	105-67-9	NE	NE	360	36	1.8	J	10		U	10	3.9	J	10		U	10		U	10		U	10		U	10	4	J	10	1	J+	11		U	10		U	52
2-Chlorophenol	ug/L	95-57-8	NE	NE	91	9.1		U	10	5.4	J	10		U	10		U	10		U	10		U	10		U	10		U	10		U	11		U	10		U	52
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	36	3.6		U	10	1.9	J	10		U	10		U	10		U	10		U	10		U	10		U	10		U	11		U	10		U	52
2-Methylphenol	ug/L	95-48-7	NE	NE	930	93		U	10		U	10	55		10		U	10		U	10		U	10		U	10	19		10		U	11		U	10		U	52
4-Methylphenol	ug/L	106-44-5	NE	NE	1900	190		U	10		U	10	41		10		U	10		U	10		U	10		U	10	18		10		U	11		U	10		U	52
Benzo[a]pyrene	ug/L	50-32-8	NE	0.2	0.0034	0.0034		U	0.052		U	0.051		U	0.052		U	0.052		U	0.05		U	0.051		U	0.05		U	0.052		U	0.053		U	0.051		U	0.052
Benzo[b]fluoranthene	ug/L	205-99-2	NE	NE	0.034	0.034		U	0.052		U	0.051		U	0.052		U	0.052		U	0.05		U	0.051		U	0.05		U	0.052		U	0.053		U	0.051		U	0.052
Bis(2-chloroethyl) Ether	ug/L	111-44-4	0.14	NE	0.014	0.014	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Bis(2-ethylhexyl) Phthalate	ug/L	117-81-7	NE	6.00	5.6	5.6		U	2.1		U	2		U	2.1		U	2.1		U	2		U	2		U	2		U	2.1		U	2.1	16		2		U	10
Bisphenol A	ug/L	80-05-7	NE	NE	770	77	12		10	120		10	110		10	39	J+	10	37		10	18	J+	10	82		10	69		10	51	J+	11	52	J+	10	180		52
Caprolactam	ug/L	105-60-2	NE	NE	9900	990		U	10		U	10		U	10	2.8	J+	10		U	10		U	10		U	10		U	10		U	11		U	10		U	52
Diethyl Phthalate	ug/L	84-66-2	NE	NE	15000	1500		U	10		U	10	12		10		U	10		U	10		U	10		U	10	6.2	J	10		U	11		U	10		U	52
Di-n-Butyl Phthalate	ug/L	84-74-2	NE	NE	900	90		U	10		U	10		U	10		U	10		U	10		U	10		U	10	1.1	J	10		U	11		U	10		U	52
Diphenyl Ether	ug/L	101-84-8	NE	NE	NE	NE	2.2	J	10	70		10	9.1	J	10	2.6	J+	10	1.6	J	10	4.6	J	10	12		10	1.6	J	10	1.9	J+	11	4.6	J	10		U	52
Hexachlorobenzene	ug/L	118-74-1	NE	1	0.049	0.049		U	0.021		U	0.02		U	0.021		U	0.021		U	0.02		U	0.02		U	0.02		U	0.021	0.013	J+	0.021		U	0.02		U	0.021
N,N-Dimethylaniline	ug/L	121-69-7	25	NE	35	3.5		U	1		U	1		U	1		U	1		U	1		U	1	2.9		1		U	1		U	1.1		U	1		U	5.2
Naphthalene	ug/L	91-20-3	0.63	NE	0.17	0.17	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	10		U	10		U	10	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	11		U	10		U	52
Nitrobenzene	ug/L	98-95-3	NE	NE	0.14	0.14		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1.1		U	1		U	5.2
N-Methylaniline	ug/L	100-61-8	NE	NE	38	3.8		UJ	5.2	4.2	J	5.1		UJ	5.2		UJ	5.2		UJ	5		U	5.1	3.1	J	5		UJ	5.2		UJ	5.3	1.5	J-	5.1		UJ	26
Pentachlorophenol	ug/L	87-86-5	NE	1.00	0.040	0.040		U	0.21		U	0.2		U	0.21		U	0.21		U	0.2		U	0.2		U	0.2		U	0.21		U	0.21		U	0.2		U	0.21
Phenol	ug/L	108-95-2	NE	NE	5800	580		U	10		U	10	8.6	J	10	0.94	J+	10		U	10		U	10		U	10	4.2	J	10		U	11		U	10		U	52
Dissolved Metals																																							
Iron	ug/L	7439-89-6	13939	NE	14000	1400	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	10300		150	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	7750		150	[redacted]	[redacted]	[redacted]
Manganese	ug/L	7439-96-5	260	NE	NE	NE	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Appendix B-1
Summary of Detected Compounds - September 2017 - October 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							DDA Monitoring Wells																																			
						Sample ID / Sample Date / N=Normal, FD=Field Duplicate	C-3D 10/10/2017 N			C-22S 10/10/2017 FD			C-22S 10/10/2017 N			GA-101 10/6/2017 N			MHW-1S 10/11/2017 N			MHW-1M 10/11/2017 N			P-4D 10/5/2017 N			PZ-4-INTR 10/5/2017 N			PZ-6N 10/10/2017 N			PZ-6S 10/10/2017 N			PZ-11-EXT 10/6/2017 N			DGC-7C 10/11/2017 N		
Parameter	Unit	CAS	PRG	MCL	RSL HQ=1.0	RSL HQ=0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
VOCs																																											
1,1,1-Trichloroethane	ug/L	71-55-6	NE	200	8000	800		U	1		U	1		U	1		U	20		U	1		U	1		U	1		U	1		U	1	15	J+	50		U	10		U	1
1,1-Dichloroethane	ug/L	75-34-3	NE	NE	2.7	2.7		U	1		U	1		U	1		U	20	1		1	0.36	J	1	0.25	J	1		U	1	2.3		1	13	J+	50		U	10		U	1
1,2,3-Trimethylbenzene	ug/L	526-73-8	NE	NE	10	1.0		U	1		U	1		U	1	890		20	0.52	J	1	0.17	J	1	0.27	J	1		U	1		U	1	210	J+	50	520		10		U	1
1,2,4-Trimethylbenzene	ug/L	95-63-6	5.7	NE	15	1.5		U	1		U	1		U	1	[illegible]		[illegible]	1.4		1	0.58	J	1	0.4	J	1	0.27	J	1		U	1	[illegible]	J+	[illegible]	[illegible]		[illegible]		U	1
1,2-Dichloroethane	ug/L	107-06-2	NE	5	0.17	0.17		U	1	0.61	J	1		U	1		U	20		U	1	0.5	J	1	1.3		1	0.25	J	1	8.2		1	21	J+	50		U	10		U	1
1,3,5-Trimethylbenzene	ug/L	108-67-8	6.1	NE	120	12		U	1		U	1		U	1	[illegible]		[illegible]	0.55	J	1		U	1		U	1		U	1		U	1	[illegible]	J+	[illegible]	[illegible]		[illegible]		U	1
1,3-Dichlorobenzene	ug/L	541-73-1	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	11		U	10
1,4-Dioxane	ug/L	123-91-1	4.6	NE	0.78	0.78	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	4.3		0.4	1.5		0.4	[illegible]		[illegible]	3.6	J	4	[illegible]		[illegible]	0.32	J	0.4
2-Butanone	ug/L	78-93-3	NE	NE	5600	560		U	5		U	5		U	5		U	100		U	5		U	5		U	5		U	5		U	5		U	250		U	50		U	5
Acetone	ug/L	67-64-1	NE	NE	14000	1400	1.6	U	5	2.3	U	5	4.8	U	5		U	100	13		5		U	5		U	5		U	5		U	5		U	250		U	50	25		5
Benzene	ug/L	71-43-2	4.6	5	0.45	0.45	0.092	J	1	0.45	J	1	0.34	J	1	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	3.6		1	4.1		1	2.6		1	[illegible]	J+	[illegible]	[illegible]		[illegible]	0.34	J	1
Carbon Disulfide	ug/L	75-15-0	NE	NE	810	81		U	1		U	1		U	1		U	20		U	1		U	1		U	1		U	1		U	1		U	50		U	10		U	1
Chlorobenzene	ug/L	108-90-7	NE	100	78	7.8		U	1	1.1		1	1		1	26		20	13		1	5.3		1	0.84	J	1	1.5		1	30		1	230	J+	50	66		10	3.7		1
Chloroethane	ug/L	75-00-3	NE	NE	21000	2100		U	1		U	1		U	1		U	20		U	1		U	1		U	1		U	1	2.7		1		U	50		U	10		U	1
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	70.0	36	3.6	0.32	J	1	0.46	J	1	0.65	J	1	35		20	0.45	J	1	0.32	J	1	0.5	J	1	0.27	J	1	7.6		1	1400	J+	50		U	10		U	1
Cyclohexane	ug/L	110-82-7	NE	NE	13000	1300		U	1		U	1		U	1	20		20		U	1	0.4	J	1		U	1		U	1		U	1	38	J+	50	13		10		U	1
Dichlorofluoromethane	ug/L	75-43-4	NE	NE	NE	NE	0.29	J	1	0.75	J	1	1		1		U	20	0.39	J	1	4.6		1		U	1		U	1	0.84	J	1		U	50		U	10		U	1
Diethyl Ether	ug/L	60-29-7	NE	NE	3900	390		U	1	0.4	J	1	0.31	J	1		U	20	5.9		1	21		1		U	1		U	1	5.1		1		U	50		U	10		U	1
Ethylbenzene	ug/L	100-41-4	15	700	1.5	1.5		U	1		U	1		U	1	[illegible]		[illegible]	1		1	0.44	J	1		U	1	1.1		1		U	1	[illegible]	J+	[illegible]	[illegible]		[illegible]		U	1
Indane	ug/L	496-11-7	NE	NE	NE	NE	0.15	J	1	1.4		1	1.1		1	310		20	4.8		1	1.1		1	0.5	J	1	2		1	1.3		1	96	J+	50	280		10		U	1
Isopropylbenzene	ug/L	98-82-8	NE	NE	450	45		U	1		U	1		U	1	150		20	1.4		1	2.9		1		U	1	0.37	J	1		U	1	34	J+	50	81		10		U	1
Methyl Cyclohexane	ug/L	108-87-2	NE	NE	NE	NE		U	1		U	1		U	1	87		20	0.23	J	1	0.4	J	1	0.24	J	1		U	1	0.31	J	1	76	J+	50	28		10		U	1
Methyl tert-Butyl Ether	ug/L	1634-04-4	NE	NE	14	14	0.33	J	1		U	1		U	1		U	20		U	1		U	1		U	1		U	1		U	1		U	50		U	10		U	1
Methylene Chloride	ug/L	75-09-2	NE	5.00	11	11		U	1		U	1		U	1		U	20		U	1		U	1		U	1		U	1	0.43	J	1		U	50		U	10		U	1
n-Propylbenzene	ug/L	103-65-1	NE	NE	660	66		U	1		U	1		U	1	450		20	0.83	J	1	0.68	J	1		U	1		U	1		U	1	90	J+	50	240		10		U	1
Tetrachloroethene	ug/L	127-18-4	NE	5	11	4.1	0.14	J	1		U	1		U	1	4.1	J	20	0.23	J	1		U	1	0.25	J	1	0.17	J	1		U	1	9.3	J+	50		U	10		U	1
Tetrahydrofuran	ug/L	109-99-9	NE	NE	3400	340		U	2	6		2	5		2		U	40	57		2	6.9		2		U	2		U	2	83		2		U	100		U	20		U	2
Toluene	ug/L	108-88-3	NE	1000	1100	110		U	1		U	1		U	1	2800		20		U	1		U	1	0.47	J	1	0.33	J	1		U	1	24000	J+	50	4	J	10		U	1
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	100	360	36		U	1		U	1		U	1		U	20		U	1		U	1		U	1		U	1	0.39	J	1		U	50		U	10		U	1
Trichloroethene	ug/L	79-01-6	NE	5.00	0.49	0.28		U	1		U	1		U	1	7.3	J	20		U	1		U	1	0.54	J	1		U	1		U	1		U	50		U	10		U	1
Vinyl Chloride	ug/L	75-01-4	NE	2.00	0.019	0.019		U	1		U	1		U	1	5	J	20		U	1	0.29	J	1		U	1		U	1	1.1		1		U	50		U	10		U	1
Xylenes, Total	ug/L	1330-20-7	21	10000	190	19		U	2		U	2		U	2	[illegible]		[illegible]	6.4		2	1.1	J	2	0.85	J	2	2.4		2		U	2	[illegible]	J+	[illegible]	[illegible]		[illegible]		U	2
SVOCs																																											
1,2,4-Trichlorobenzene	ug/L	120-82-1	NE	70	1.1	0.40		U	1		U	1		U	1	8.2		1		U	1		U	1		U	1		U	1		U	1		U	1		U	1.1		U	1
1,2-Dichlorobenzene	ug/L	95-50-1	NE	600	300	30		U	10		U	10		U	10	2.4	J	10		U	10		U	10		U	10		U	10		U	10		U	10	2.9	J	11		U	10
1,4-Dichlorobenzene	ug/L	106-46-7	NE	75	0.48	0.48		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	2.3	J	11		U	10
2,4-Dimethylphenol	ug/L	105-67-9	NE	NE	360	36		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	4.7	J	10	8.8	J	11		U	10
2-Chlorophenol	ug/L	95-57-8	NE	NE	91	9.1		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	11		U	10
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	36	3.6		U	10		U	10		U	10	8	J	10		U	10		U	10		U	10		U	10		U	10	1.8	J	10	2.6	J	11		U	10
2-Methylphenol	ug/L	95-48-7	NE	NE	930	93		U	10		U	10		U	10	4.7	J	10		U	10		U	10		U	10		U	10		U	10	26		10		U	11		U	10
4-Methylphenol	ug/L	106-44-5	NE	NE	1900	190		U	10		U	10		U	10	11		10		U	10		U	10		U	10		U	10		U	10	41		10		U	11		U	10
Benzo[a]pyrene	ug/L	50-32-8	NE	0.2	0.0034	0.0034		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.053	0.029	J	0.05
Benzo[b]fluoranthene	ug/L	205-99-2	NE	NE	0.034	0.034		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.052		U	0.053	0.072		0.05
Bis(2-chloroethyl) Ether	ug/L	111-44-4	0.14	NE	0.014	0.014	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]		U	0.021	[illegible]		[illegible]	[illegible]		[illegible]	0.11	J+	0.021		U	0.021	[illegible]		[illegible]		U	0.021	[illegible]		[illegible]		U	0.02
Bis(2-ethylhexyl) Phthalate	ug/L	117-81-7	NE	6.00	5.6	5.6	1.3	J	2.1	1.3	J	2.1	1.3	J	2.1		U	2.1		U	2.1		U	2.1		U	2.1		U	2.1	1.3	J	2.1		U	2.1		U	2.1		U	2
Bisphenol A	ug/L	80-05-7	NE	NE	770	77	8.4	J	10	66		10	59		10	74		10	61		10	8.3	UJ	10	13	J+	10	11		10	88		10	97		10	95		11	7.9	U	10
Caprolactam	ug/L	105-60-2	NE	NE	9900	990		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	11	2.9	J	10
Diethyl Phthalate	ug/L	84-66-2	NE	NE	15000	1500		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	1.3	J	10	29		10	4.2	J	11		U	10
Di-n-Butyl Phthalate	ug/L	84-74-2	NE	NE	900	90		U	10		U	10		U	10	14		10		U	10		U	10		U	10		U	10		U	10	3.2	J	10	4.2	J	11		U	10
Diphenyl Ether	ug/L	101-84-8	NE	NE	NE	NE		U	10		U	10		U	10	94		10		U	10		U	10		U	10		U	10	0.53	J	10	5	J	10	42		11		U	10
Hexachlorobenzene	ug/L	118-74-1	NE	1	0.049	0.049		U	0.021		U	0.021		U	0.021		U	0.021		U	0.021		U	0.021		U	0.021		U	0.021		U	0.021		U	0.021		U	0.021		U	0.02
N,N-Dimethylaniline	ug/L	121-69-7	25	NE	35	3.5		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1.1		U	1
Naphthalene	ug/L	91-20-3	0.63	NE	0.17	0.17		U	10		U	10		U	10	[illegible]		[illegible]		U	10		U	10		U	10		U	10		U	10	[illegible]		[illegible]	[illegible]		[illegible]		U	10
Nitrobenzene	ug/L	98-95-3	NE	NE	0.14	0.14		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1.1		U	1
N-Methylaniline	ug/L	100-61-8	NE	NE	38	3.8		UJ	5.2	1.6	J-	5.2	1.2	J-	5.2		UJ	5.2	1.2	J	5.2		U	5.2		UJ	5.2		UJ	5.2		UJ	5.2		UJ	5.2		UJ	5.3		UJ	5
Pentachlorophenol	ug/L	87-86-5	NE	1.00	0.040	0.040		U	0.21		U	0.21		U	0.21	0.17	J	0.21		U	0.21		U	0.21		U	0.21		U	0.21		U	0.21	0.18	J	0.21		U	0.21		U	0.2
Phenol	ug/L	108-95-2	NE	NE	5800	580		U	10		U	10		U	10		U	10		U	10	1.2	J+	10		U	10		U	10		U	10	11		10		U	11		U	10
Dissolved Metals																																											
Iron	ug/L	7439-89-6	13939	NE	14000	1400	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	6880		150	[illegible]		[illegible]	13900		150	6600		300	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
Manganese	ug/L	7439-96-5	260	NE	NE	NE	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	139		15	[illegible]		[illegible]

Appendix B-1
Summary of Detected Compounds - September 2017 - October 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							PW-1(U) Monitoring Wells - UPCU Transition Zone						PW-1(U) Monitoring Wells - UPA Upper Sand						PW-1(U) Monitoring Wells - UPA Upper Sand																							
						Sample ID	DDA-05			DDA-06			DDA-01			DDA-02			DDA-03			DDA-10-US			DDA-12-US			DGC-2S			DGC-5			DGC-7S			MHW-1D			PW-1(U)		
						Sample Date	10/11/2017			10/9/2017			10/11/2017			10/9/2017			10/5/2017			10/11/2017			10/5/2017			10/5/2017			10/4/2017			10/10/2017			10/10/2017			10/9/2017		
						N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	[redacted]	MCL	RSL HQ=1.0	RSL HQ=0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
VOCs																																										
1,1,1-Trichloroethane	ug/L	71-55-6	NE	200	8000	800		U	1		U	1		U	1		U	1		U	1		U	1		U	2		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethane	ug/L	75-34-3	NE	NE	2.7	2.7	0.86	J	1	0.32	J	1		U	1		U	1		U	1	0.41	J	1		U	2		U	1		U	1		U	1		U	1		U	1
1,2,3-Trimethylbenzene	ug/L	526-73-8	NE	NE	10	1.0	76		1		U	1		U	1		U	1		U	1	2.1		1	100		2		U	1		U	1		U	1		U	1	2.3		1
1,2,4-Trimethylbenzene	ug/L	95-63-6	5.7	NE	15	1.5	[redacted]	[redacted]	[redacted]	0.68	J	1		U	1		U	1		U	1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	1		U	1		U	1		U	1	[redacted]	[redacted]	[redacted]
1,2-Dichloroethane	ug/L	107-06-2	NE	5	0.17	0.17		U	1		U	1		U	1		U	1		U	1	0.36	J	1		U	2		U	1		U	1		U	1		U	1	0.3	J	1
1,3,5-Trimethylbenzene	ug/L	108-67-8	6.1	NE	120	12	[redacted]	[redacted]	[redacted]		U	1		U	1		U	1		U	1	2.6		1	[redacted]	[redacted]	[redacted]		U	1		U	1		U	1		U	1	2.5		1
1,3-Dichlorobenzene	ug/L	541-73-1	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dioxane	ug/L	123-91-1	4.6	NE	0.78	0.78	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	0.58		0.4	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	2.8		0.4	1.4		0.4	[redacted]	[redacted]	[redacted]	6		0.4	[redacted]	[redacted]	[redacted]
2-Butanone	ug/L	78-93-3	NE	NE	5600	560		U	5		U	5		U	5		U	5		U	5		U	5		U	10		U	5		U	5		U	5		U	5		U	5
Acetone	ug/L	67-64-1	NE	NE	14000	1400	3.6	U	5		U	5		U	5		U	5		U	5	1.1	U	5		U	10		U	5		U	5		U	5		U	5		U	5
Benzene	ug/L	71-43-2	4.6	5	0.45	0.45	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	1		U	1		U	1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	1		U	1		U	1		U	1	[redacted]	[redacted]	[redacted]
Carbon Disulfide	ug/L	75-15-0	NE	NE	810	81		U	1		U	1		U	1		U	1		U	1		U	1		U	2		U	1		U	1		U	1		U	1		U	1
Chlorobenzene	ug/L	108-90-7	NE	100	78	7.8	51		1	3.9		1		U	1		U	1		U	1	1.6		1	3.8		2		U	1		U	1		U	1		U	1	2.1		1
Chloroethane	ug/L	75-00-3	NE	NE	21000	2100		U	1		U	1		U	1		U	1		U	1		U	1		U	2		U	1		U	1		U	1		U	1		U	1
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	70.0	36	3.6		U	1		U	1		U	1		U	1		U	1	0.93	J	1		U	2		U	1		U	1		U	1		U	1		U	1
Cyclohexane	ug/L	110-82-7	NE	NE	13000	1300	3		1		U	1		U	1		U	1		U	1	6		1	30		2		U	1		U	1		U	1		U	1	0.7	J	1
Dichlorofluoromethane	ug/L	75-43-4	NE	NE	NE	NE		U	1	1.3		1		U	1		U	1		U	1	10		1	1.3	J	2		U	1		U	1		U	1		U	1	0.47	J	1
Diethyl Ether	ug/L	60-29-7	NE	NE	3900	390	0.44	J	1	0.55	J	1		U	1		U	1		U	1	2.2		1	0.59	J	2		U	1		U	1	0.25	J	1		U	1	0.98	J	1
Ethylbenzene	ug/L	100-41-4	15	700	1.5	1.5	2.5		1		U	1		U	1		U	1		U	1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	1		U	1		U	1		U	1	2.3		1
Indane	ug/L	496-11-7	NE	NE	NE	NE	98		1	44		1		U	1		U	1		U	1	5		1	53		2		U	1		U	1	0.16	J	1		U	1	3.6		1
Isopropylbenzene	ug/L	98-82-8	NE	NE	450	45	24		1	22		1		U	1		U	1		U	1	4.5		1	38		2		U	1		U	1		U	1		U	1	1.5		1
Methyl Cyclohexane	ug/L	108-87-2	NE	NE	NE	NE	3.6		1		U	1		U	1		U	1		U	1	7.3		1	46		2		U	1		U	1		U	1		U	1	1.6		1
Methyl tert-Butyl Ether	ug/L	1634-04-4	NE	NE	14	14		U	1	0.26	J	1	0.33	J	1	1.2		1	0.46	J	1	0.33	J	1	0.45	J	2	0.15	J	1		U	1	0.52	J	1	0.14	J	1	0.36	J	1
Methylene Chloride	ug/L	75-09-2	NE	5.00	11	11		U	1		U	1		U	1		U	1		U	1		U	1		U	2		U	1		U	1		U	1		U	1		U	1
n-Propylbenzene	ug/L	103-65-1	NE	NE	660	66	28		1	19		1		U	1		U	1		U	1	3.9		1	55		2		U	1		U	1		U	1		U	1	1.9		1
Tetrachloroethene	ug/L	127-18-4	NE	5	11	4.1		U	1		U	1	2.3		1		U	1		U	1		U	1		U	2		U	1		U	1		U	1		U	1	1.6		1
Tetrahydrofuran	ug/L	109-99-9	NE	NE	3400	340	20		2		U	2		U	2		U	2		U	2	2.5		2	3.8	J	4		U	2		U	2		U	2		U	2		U	2
Toluene	ug/L	108-88-3	NE	1000	1100	110	1.1		1		U	1		U	1		U	1		U	1	0.66	J	1	1.2	J	2		U	1		U	1		U	1		U	1		U	1
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	100	360	36	0.29	J	1		U	1		U	1		U	1		U	1		U	1		U	2		U	1		U	1		U	1		U	1		U	1
Trichloroethene	ug/L	79-01-6	NE	5.00	0.49	0.28		U	1		U	1		U	1		U	1		U	1		U	1		U	2		U	1		U	1		U	1		U	1		U	1
Vinyl Chloride	ug/L	75-01-4	NE	2.00	0.019	0.019		U	1		U	1		U	1		U	1		U	1	0.58	J	1		U	2		U	1		U	1		U	1		U	1		U	1
Xylenes, Total	ug/L	1330-20-7	21	10000	190	19	[redacted]	[redacted]	[redacted]		U	2		U	2		U	2		U	2	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	2		U	2		U	2		U	2	11		2
SVOCs																																										
1,2,4-Trichlorobenzene	ug/L	120-82-1	NE	70	1.1	0.40		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichlorobenzene	ug/L	95-50-1	NE	600	300	30	1.2	J	10	2.9	J	10		U	10		U	10		U	10		U	10	1.9	J	10		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene	ug/L	106-46-7	NE	75	0.48	0.48	2.8	J	10	0.97	J	10		U	10		U	10		U	10		U	10	0.98	J	10		U	10		U	10		U	10		U	10		U	10
2,4-Dimethylphenol	ug/L	105-67-9	NE	NE	360	36	2.1	J	10		U	10		U	10		U	10		U	10		U	10	4	J	10		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol	ug/L	95-57-8	NE	NE	91	9.1		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	36	3.6		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylphenol	ug/L	95-48-7	NE	NE	930	93		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
4-Methylphenol	ug/L	106-44-5	NE	NE	1900	190		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Benzo[a]pyrene	ug/L	50-32-8	NE	0.2	0.0034	0.0034		U	0.052		U	0.052		U	0.051		U	0.05		U	0.052		U	0.05		U	0.052		U	0.052		U	0.05		U	0.052		U	0.05		U	0.052
Benzo[b]fluoranthene	ug/L	205-99-2	NE	NE	0.034	0.034		U	0.052		U	0.052		U	0.051		U	0.05		U	0.052		U	0.05		U	0.052		U	0.052		U	0.05		U	0.052		U	0.05		U	0.052
Bis(2-chloroethyl) Ether	ug/L	111-44-4	0.14	NE	0.014	0.014	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		U	0.021	[redacted]	[redacted]	[redacted]		U	0.021		U	0.021	0.077	J+	0.02	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Bis(2-ethylhexyl) Phthalate	ug/L	117-81-7	NE	6.00	5.6	5.6		U	2.1		U	2.1		U	2		U	2		U	2.1		U	2		U	2.1		U	2.1		U	2		U	2.1		U	2		U	2.1
Bisphenol A	ug/L	80-05-7	NE	NE	770	77	120		10	15		10		U	10	8.8	J	10		U	10	8.4	UJ	10	15		10		U	10		U	10	9.7	J	10	8	J	10	14	J+	10
Caprolactam	ug/L	105-60-2	NE	NE	9900	990		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	2.1	J	10		U	10
Diethyl Phthalate	ug/L	84-66-2	NE	NE	15000	1500	8	J	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate	ug/L	84-74-2	NE	NE	900	90		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether	ug/L	101-84-8	NE	NE	NE	NE	10		10	6.8	J	10		U	10		U	10		U	10		U	10	7.7	J	10		U	10		U	10		U	10		U	10	0.52	J	10
Hexachlorobenzene	ug/L	118-74-1	NE	1	0.049	0.049		U	0.021		U	0.021		U	0.02		U	0.02		U	0.021		U	0.02		U	0.021		U	0.021		U	0.02		U	0.021		U	0.02		U	0.021
N,N-Dimethylaniline	ug/L	121-69-7	25	NE	35	3.5		U	1	1		1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Naphthalene	ug/L	91-20-3	0.63	NE	0.17	0.17	[redacted]	[redacted]	[redacted]		U	10		U	10		U	10		U	10		U	10	[redacted]	[redacted]	[redacted]		U	10		U	10		U	10		U	10		U	10
Nitrobenzene	ug/L	98-95-3	NE	NE	0.14	0.14		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
N-Methylaniline	ug/L	100-61-8	NE	NE	38	3.8		UJ	5.2		UJ	5.2		U	5.1		UJ	5		UJ	5.2		U	5	1.4	J-	5.2		UJ	5.2		UJ	5		UJ	5.2		UJ	5		UJ	5.2
Pentachlorophenol	ug/L	87-86-5	NE	1.00	0.040	0.040		U	0.21		U	0.21		U	0.2		U	0.2		U	0.21		U	0.2		U	0.21		U	0.21		U	0.2		U	0.21		U	0.2		U	0.21
Phenol	ug/L	108-95-2	NE	NE	5800	580	1	J	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Dissolved Metals																																										
Iron	ug/L	7439-89-6	13939	NE	14000	1400	[redacted]	[redacted]	[redacted]	2060		150	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	7400		150	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	2140		150	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Manganese	ug/L	7439-96-5	260	NE	NE	NE	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Appendix B-1
Summary of Detected Compounds - September 2017 - October 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							Downgradient UPA Wells																										
						Sample ID	DGC-10D			DGC-10S			DGC-11D			DGC-11S			DGC-11S			RT-1-UP			UPA-01			UPA-02D			UPA-02D		
						Sample Date	9/27/2017			9/27/2017			9/27/2017			9/27/2017			9/27/2017			10/2/2017			10/4/2017			10/4/2017			10/4/2017		
						N=Normal, FD=Field Duplicate	N			N			N			FD			N			N			N			FD			N		
Parameter	Unit	CAS	PRG	MCL	RSL HQ=1.0	RSL HQ= 0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
VOCs																																	
1,1,1-Trichloroethane	ug/L	71-55-6	NE	200	8000	800		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethane	ug/L	75-34-3	NE	NE	2.7	2.7		UJ	1		U	1		U	1		UJ	1		U	1		U	1	1.8		1		U	1		U	1
1,2,3-Trimethylbenzene	ug/L	526-73-8	NE	NE	10	1.0		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
1,2,4-Trimethylbenzene	ug/L	95-63-6	5.7	NE	15	1.5		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane	ug/L	107-06-2	NE	5	0.17	0.17		UJ	1		U	1		U	1		UJ	1		U	1		U	1	0.58	J	1		U	1		U	1
1,3,5-Trimethylbenzene	ug/L	108-67-8	6.1	NE	120	12		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
1,3-Dichlorobenzene	ug/L	541-73-1	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dioxane	ug/L	123-91-1	4.6	NE	0.78	0.78	0.88		0.4	2.1		0.4		U	0.4		U	0.4		U	0.4	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
2-Butanone	ug/L	78-93-3	NE	NE	5600	560		UJ	5		U	5		U	5		UJ	5		U	5		U	5		U	5		U	5		U	5
Acetone	ug/L	67-64-1	NE	NE	14000	1400		UJ	5		U	5		U	5		UJ	5		U	5		U	5		U	5		U	5		U	5
Benzene	ug/L	71-43-2	4.6	5	0.45	0.45		UJ	1		U	1		U	1		UJ	1		U	1		U	1	[illegible]		[illegible]	0.19	J	1	0.24	J	1
Carbon Disulfide	ug/L	75-15-0	NE	NE	810	81		UJ	1		U	1		UJ	1		UJ	1		U	1		U	1		U	1		U	1		U	1
Chlorobenzene	ug/L	108-90-7	NE	100	78	7.8		UJ	1		U	1		U	1		UJ	1		U	1		U	1	6		1	5.4		1	5.4		1
Chloroethane	ug/L	75-00-3	NE	NE	21000	2100		UJ	1		U	1		U	1		UJ	1		U	1		U	1	0.42	J	1		U	1		U	1
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	70.0	36	3.6		UJ	1		U	1		U	1		UJ	1		U	1		U	1	0.74	J	1		U	1		U	1
Cyclohexane	ug/L	110-82-7	NE	NE	13000	1300		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
Dichlorofluoromethane	ug/L	75-43-4	NE	NE	NE	NE		UJ	1		U	1		U	1		UJ	1		U	1		U	1	18		1	0.27	J	1	0.28	J	1
Diethyl Ether	ug/L	60-29-7	NE	NE	3900	390		UJ	1		U	1		U	1		UJ	1		U	1		U	1	3.1		1	3.7		1	3.9		1
Ethylbenzene	ug/L	100-41-4	15	700	1.5	1.5		UJ	1		U	1		U	1		UJ	1		U	1		U	1	[illegible]		[illegible]		U	1		U	1
Indane	ug/L	496-11-7	NE	NE	NE	NE		UJ	1		U	1		U	1		UJ	1		U	1		U	1	17		1		U	1		U	1
Isopropylbenzene	ug/L	98-82-8	NE	NE	450	45		UJ	1		U	1		U	1		UJ	1		U	1		U	1	14		1		U	1		U	1
Methyl Cyclohexane	ug/L	108-87-2	NE	NE	NE	NE		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
Methyl tert-Butyl Ether	ug/L	1634-04-4	NE	NE	14	14	0.47	J-	1		U	1		U	1		UJ	1		U	1		U	1	0.28	J	1	2.6		1	2.6		1
Methylene Chloride	ug/L	75-09-2	NE	5.00	11	11		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
n-Propylbenzene	ug/L	103-65-1	NE	NE	660	66		UJ	1		U	1		U	1		UJ	1		U	1		U	1	19		1		U	1		U	1
Tetrachloroethene	ug/L	127-18-4	NE	5	11	4.1	0.29	J-	1		U	1		U	1		UJ	1		U	1		U	1		U	1	0.32	J	1	0.32	J	1
Tetrahydrofuran	ug/L	109-99-9	NE	NE	3400	340		UJ	2		U	2		U	2		UJ	2		U	2	2.5		2	4.1		2	2.9		2	3.3		2
Toluene	ug/L	108-88-3	NE	1000	1100	110		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	100	360	36		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
Trichloroethene	ug/L	79-01-6	NE	5.00	0.49	0.28	0.24	J-	1	0.39	J	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
Vinyl Chloride	ug/L	75-01-4	NE	2.00	0.019	0.019		UJ	1		U	1		U	1		UJ	1		U	1		U	1		U	1		U	1		U	1
Xylenes, Total	ug/L	1330-20-7	21	10000	190	19		UJ	2		U	2		U	2		UJ	2		U	2		U	2		U	2		U	2		U	2
SVOCs																																	
1,2,4-Trichlorobenzene	ug/L	120-82-1	NE	70	1.1	0.40		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichlorobenzene	ug/L	95-50-1	NE	600	300	30		U	10		U	10		U	10		U	10		U	10		U	10	1.2	J	10		U	10		U	10
1,4-Dichlorobenzene	ug/L	106-46-7	NE	75	0.48	0.48		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2,4-Dimethylphenol	ug/L	105-67-9	NE	NE	360	36		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol	ug/L	95-57-8	NE	NE	91	9.1		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	36	3.6		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylphenol	ug/L	95-48-7	NE	NE	930	93		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
4-Methylphenol	ug/L	106-44-5	NE	NE	1900	190		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Benzo[a]pyrene	ug/L	50-32-8	NE	0.2	0.0034	0.0034		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05		U	0.052		U	0.051		U	0.05		U	0.05
Benzo[b]fluoranthene	ug/L	205-99-2	NE	NE	0.034	0.034		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05		U	0.052		U	0.051		U	0.05		U	0.05
Bis(2-chloroethyl) Ether	ug/L	111-44-4	0.14	NE	0.014	0.014	0.055	J+	0.02	0.14	J+	0.02		U	0.02		U	0.02		U	0.02		U	0.021	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
Bis(2-ethylhexyl) Phthalate	ug/L	117-81-7	NE	6.00	5.6	5.6		U	2	1	J	2		U	2		U	2		U	2		U	2.1		U	2		U	2		U	2
Bisphenol A	ug/L	80-05-7	NE	NE	770	77		U	10		U	10		U	10		U	10		U	10	8.5	J	10	31		10	9.3	J	10	9.8	J+	10
Caprolactam	ug/L	105-60-2	NE	NE	9900	990		U	10		U	10		U	10		U	10		U	10	2	J	10		U	10		U	10		U	10
Diethyl Phthalate	ug/L	84-66-2	NE	NE	15000	1500		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate	ug/L	84-74-2	NE	NE	900	90		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether	ug/L	101-84-8	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10	2.5	J	10	1.8	J	10	2.7	J+	10
Hexachlorobenzene	ug/L	118-74-1	NE	1	0.049	0.049		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02		U	0.021		U	0.02	0.011	J	0.02		U	0.02
N,N-Dimethylaniline	ug/L	121-69-7	25	NE	35	3.5		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Naphthalene	ug/L	91-20-3	0.63	NE	0.17	0.17		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Nitrobenzene	ug/L	98-95-3	NE	NE	0.14	0.14		U	1		U	1		U	1		U	1		U	1		U	1	2.5		1		U	1		U	1
N-Methylaniline	ug/L	100-61-8	NE	NE	38	3.8		U	5		U	5		U	5		U	5		U	5		U	5.2	3.1	J-	5.1		UJ	5		UJ	5
Pentachlorophenol	ug/L	87-86-5	NE	1.00	0.040	0.040		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2		U	0.21		U	0.2		U	0.2		U	0.2
Phenol	ug/L	108-95-2	NE	NE	5800	580		U	10		U	10		U	10		U	10		U	10		U	10	1.8	J	10		U	10		U	10
Dissolved Metals																																	
Iron	ug/L	7439-89-6	13939	NE	14000	1400		U	150	8980		150	308		150	4700		150	4640		150	5000		150	[illegible]		[illegible]	4040		150	4240		150
Manganese	ug/L	7439-96-5	260	NE	NE	NE	102		15	[illegible]		[illegible]	6.7	J	15	113		15	113		15	163		15	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]

Appendix B-1
Summary of Detected Compounds - September 2017 - October 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							Downgradient UPA Wells																		AWC Monitoring Wells			NCC UPA Monitoring Wells and P-6 Vicinity											
						Sample ID	UPA-02S			UPA-03D			AWC-E1			AWC-E1			AWC-E2			AWC-E2			AWC-K1			BW-1			BW-2			MW-18			MW-26N		
						Sample Date	10/4/2017			9/29/2017			9/28/2017			9/28/2017			9/28/2017			9/28/2017			9/28/2017			10/3/2017			10/3/2017			9/29/2017			10/5/2017		
						N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	PRG	MCL	RSL HQ=1.0	RSL HQ=0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
VOCs																																							
1,1,1-Trichloroethane	ug/L	71-55-6	NE	200	8000	800		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethane	ug/L	75-34-3	NE	NE	2.7	2.7		U	1		U	1		U	1		U	1	0.58	J	1	0.61	J	1		U	1		U	1		U	1		U	1	0.29	J	1
1,2,3-Trimethylbenzene	ug/L	526-73-8	NE	NE	10	1.0		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2,4-Trimethylbenzene	ug/L	95-63-6	5.7	NE	15	1.5		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane	ug/L	107-06-2	NE	5	0.17	0.17		U	1		U	1	0.28	J	1	0.26	J	1	1.4		1	1.7		1		U	1		U	1		U	1		U	1	0.91	J	1
1,3,5-Trimethylbenzene	ug/L	108-67-8	6.1	NE	120	12		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,3-Dichlorobenzene	ug/L	541-73-1	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dioxane	ug/L	123-91-1	4.6	NE	0.78	0.78	0.25	U	0.4	23		0.4	6		0.4	31		0.4	[illegible]		50	120		50	0.97		0.4	4.9		0.4	120		50	13		0.4	52		50
2-Butanone	ug/L	78-93-3	NE	NE	5600	560		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
Acetone	ug/L	67-64-1	NE	NE	14000	1400		U	5	1.1	U	5		U	5	2.9	U	5	4.4	U	5	3.1	U	5	3.6	U	5	1.3	U	5		U	5	2.2	U	5		U	5
Benzene	ug/L	71-43-2	4.6	5	0.45	0.45		U	1		U	1	0.27	J	1	0.22	U	1	0.99	J	1	0.89	J	1		U	1	0.15	J	1	0.15	J	1	0.13	J	1	0.34	J	1
Carbon Disulfide	ug/L	75-15-0	NE	NE	810	81		U	1		U	1		U	1	0.28	J	1	0.4	J	1	0.6	J	1		U	1		U	1		U	1		U	1		U	1
Chlorobenzene	ug/L	108-90-7	NE	100	78	7.8		U	1	0.31	J	1	4.9		1	4.6		1	7.1		1	9.5		1		U	1	6.6		1	3.2		1	8.3		1	8		1
Chloroethane	ug/L	75-00-3	NE	NE	21000	2100		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	70.0	36	3.6		U	1		U	1		U	1		U	1	0.47	J	1	0.51	J	1		U	1		U	1		U	1		U	1	0.39	J	1
Cyclohexane	ug/L	110-82-7	NE	NE	13000	1300		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Dichlorofluoromethane	ug/L	75-43-4	NE	NE	NE	NE		U	1	0.38	J	1	0.36	J	1	0.32	J	1	4.5		1	4.9		1		U	1		U	1		U	1	0.23	J	1	1.7		1
Diethyl Ether	ug/L	60-29-7	NE	NE	3900	390		U	1	0.13	J	1	9.7		1	9.1		1	3.6		1	4		1		U	1	11		1	9		1	12		1	1.3		1
Ethylbenzene	ug/L	100-41-4	15	700	1.5	1.5		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Indane	ug/L	496-11-7	NE	NE	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1	0.19	J	1		U	1	0.16	J	1		U	1
Isopropylbenzene	ug/L	98-82-8	NE	NE	450	45		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Methyl Cyclohexane	ug/L	108-87-2	NE	NE	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Methyl tert-Butyl Ether	ug/L	1634-04-4	NE	NE	14	14		U	1	0.48	J	1	0.89	J	1	0.75	J	1	1		1	1.5		1		U	1	0.2	J	1	0.39	J	1	0.59	J	1	2.1		1
Methylene Chloride	ug/L	75-09-2	NE	5.00	11	11		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
n-Propylbenzene	ug/L	103-65-1	NE	NE	660	66		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Tetrachloroethene	ug/L	127-18-4	NE	5	11	4.1		U	1		U	1		U	1		U	1	0.12	J	1	0.12	J	1		U	1		U	1		U	1	0.42	J	1	0.87	J	1
Tetrahydrofuran	ug/L	109-99-9	NE	NE	3400	340		U	2		U	2		U	2	1.5	J	2	8.8		2	9		2		U	2		U	2		U	2	1.9	J	2	6.8	J+	2
Toluene	ug/L	108-88-3	NE	1000	1100	110		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	0.67	J	1		U	1		U	1
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	100	360	36		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Trichloroethene	ug/L	79-01-6	NE	5.00	0.49	0.28		U	1		U	1		U	1		U	1		U	1	0.22	J	1	2.1		1		U	1		U	1		U	1		U	1
Vinyl Chloride	ug/L	75-01-4	NE	2.00	0.019	0.019		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	0.85	J	1		U	1
Xylenes, Total	ug/L	1330-20-7	21	10000	190	19		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	0.48	J	2		U	2		U	2
SVOCs																																							
1,2,4-Trichlorobenzene	ug/L	120-82-1	NE	70	1.1	0.40		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichlorobenzene	ug/L	95-50-1	NE	600	300	30		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene	ug/L	106-46-7	NE	75	0.48	0.48		U	10		U	10		U	10	0.72	J	10	0.72	J	10		U	10		U	10		U	10		U	10	0.94	J	10		U	10
2,4-Dimethylphenol	ug/L	105-67-9	NE	NE	360	36		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol	ug/L	95-57-8	NE	NE	91	9.1		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	36	3.6		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylphenol	ug/L	95-48-7	NE	NE	930	93		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
4-Methylphenol	ug/L	106-44-5	NE	NE	1900	190		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Benzo[a]pyrene	ug/L	50-32-8	NE	0.2	0.0034	0.0034		U	0.051		U	0.052		U	0.05		U	0.05		U	0.5		U	0.05		U	0.05		U	0.052		U	0.052		U	0.051		U	0.051
Benzo[b]fluoranthene	ug/L	205-99-2	NE	NE	0.034	0.034		U	0.051		UJ	0.052		U	0.05		U	0.05		U	0.5		U	0.05		U	0.05		U	0.052		U	0.052		UJ	0.051		U	0.051
Bis(2-chloroethyl) Ether	ug/L	111-44-4	0.14	NE	0.014	0.014		U	0.02	2.6		0.02	2.7	J+	0.02	2	J+	0.02	21	J+	0.2	20	J+	1		U	0.02	0.27		0.021	0.28		0.021	4		0.02	18	J+	1
Bis(2-ethylhexyl) Phthalate	ug/L	117-81-7	NE	6.00	5.6	5.6		U	2		U	2.1	1.1	J	2		U	2		U	2		U	2		U	2	2.6		2.1		U	2.1		U	2		U	2
Bisphenol A	ug/L	80-05-7	NE	NE	770	77		U	10		U	10	5.9	J	10	5.6	J	10	6.7	J	10	5.9	J	10	4.6	J	10	10		10	11		10	6.7	J+	10	8.4	J	10
Caprolactam	ug/L	105-60-2	NE	NE	9900	990		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Diethyl Phthalate	ug/L	84-66-2	NE	NE	15000	1500		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate	ug/L	84-74-2	NE	NE	900	90	0.88	J	10		U	10		U	10		U	10		U	10		U	10		U	10	0.86	J	10		U	10		U	10		U	10
Diphenyl Ether	ug/L	101-84-8	NE	NE	NE	NE		U	10		U	10		U	10		U	10	1.2	J	10	1.4	J	10		U	10		U	10		U	10		U	10	1.1	J+	10
Hexachlorobenzene	ug/L	118-74-1	NE	1	0.049	0.049		U	0.02		U	0.021		U	0.02		U	0.02		U	0.2		U	0.02		U	0.02		U	0.021		U	0.021		U	0.02		U	0.02
N,N-Dimethylaniline	ug/L	121-69-7	25	NE	35	3.5		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Naphthalene	ug/L	91-20-3	0.63	NE	0.17	0.17		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Nitrobenzene	ug/L	98-95-3	NE	NE	0.14	0.14		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
N-Methylaniline	ug/L	100-61-8	NE	NE	38	3.8		UJ	5.1		UJ	5.2		U	5		U	5		U	5		U	5		U	5		U	5.2		U	5.2		UJ	5.1		UJ	5.1
Pentachlorophenol	ug/L	87-86-5	NE	1.00	0.040	0.040		U	0.2		U	0.21		U	0.2		U	0.2		U	2		U	0.2		U	0.2		U	0.21		U	0.21		U	0.2		U	0.2
Phenol	ug/L	108-95-2	NE	NE	5800	580		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Dissolved Metals																																							
Iron	ug/L	7439-89-6	13939	NE	14000	1400	361		150	97.9	J	150	3700		150	6160		150	5310		150	3090		150	2630		150	17200		50	4370		150	43700		50	229		150
Manganese	ug/L	7439-96-5	260	NE	NE	NE	50.9		15	11.3	J	15	2010		5	1630		15	11.6		5	697		15	54.1		15	3370		5	1640		15	3500		5	2060		15

Appendix B-1
Summary of Detected Compounds - September 2017 - October 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							NCC UPA Monitoring Wells and P-6 Vicinity															NCC UPA Monitoring Wells and P-6 Vicinity								
						Sample ID	MW-28			MW-29			MW-31			MW-34			P-4_UPA			P-5L			P-6_UPA			RW-10		
						Sample Date	10/2/2017			10/2/2017			10/2/2017			9/29/2017			9/29/2017			10/2/2017			10/4/2017			10/2/2017		
						N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	PRG	MCL	RSL HQ=1.0	RSL HQ= 0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
VOCs																														
1,1,1-Trichloroethane	ug/L	71-55-6	NE	200	8000	800		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethane	ug/L	75-34-3	NE	NE	2.7	2.7		U	1		U	1		U	1		U	1		U	1		U	1	0.37	J	1		U	1
1,2,3-Trimethylbenzene	ug/L	526-73-8	NE	NE	10	1.0		U	1		U	1		U	1		U	1		U	1		U	1	10		1		U	1
1,2,4-Trimethylbenzene	ug/L	95-63-6	5.7	NE	15	1.5		U	1		U	1		U	1		U	1		U	1		U	1	[illegible]	[illegible]	[illegible]		U	1
1,2-Dichloroethane	ug/L	107-06-2	NE	5	0.17	0.17		U	1		U	1		U	1		U	1	0.59	J	1		U	1		U	1		U	1
1,3,5-Trimethylbenzene	ug/L	108-67-8	6.1	NE	120	12		U	1		U	1		U	1		U	1		U	1		U	1	4.8		1		U	1
1,3-Dichlorobenzene	ug/L	541-73-1	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dioxane	ug/L	123-91-1	4.6	NE	0.78	0.78	[illegible]		[illegible]	1.3		0.4	1.6		0.4	[illegible]		[illegible]		U	0.4	[illegible]		[illegible]	[illegible]		[illegible]		U	0.4
2-Butanone	ug/L	78-93-3	NE	NE	5600	560		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
Acetone	ug/L	67-64-1	NE	NE	14000	1400		U	5	1.5	U	5		U	5	1.8	U	5		U	5		U	5		U	5		U	5
Benzene	ug/L	71-43-2	4.6	5	0.45	0.45	0.29	J	1		U	1	0.38	J	1		U	1		U	1		U	1	[illegible]	[illegible]	[illegible]		U	1
Carbon Disulfide	ug/L	75-15-0	NE	NE	810	81		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Chlorobenzene	ug/L	108-90-7	NE	100	78	7.8	5.2		1	6.1		1	5.2		1	6.4		1		U	1	1.2		1	4.6		1		U	1
Chloroethane	ug/L	75-00-3	NE	NE	21000	2100		U	1		U	1		U	1		U	1		U	1		U	1	0.68	J	1		U	1
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	70.0	36	3.6		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Cyclohexane	ug/L	110-82-7	NE	NE	13000	1300		U	1		U	1		U	1		U	1		U	1		U	1	3.2		1		U	1
Dichlorofluoromethane	ug/L	75-43-4	NE	NE	NE	NE		U	1		U	1		U	1	0.3	J	1		U	1		U	1	11		1		U	1
Diethyl Ether	ug/L	60-29-7	NE	NE	3900	390	80		1	8.5		1	5.2		1	7.6		1		U	1	2		1	2.7		1		U	1
Ethylbenzene	ug/L	100-41-4	15	700	1.5	1.5		U	1		U	1		U	1		U	1		U	1		U	1	4.9		1		U	1
Indane	ug/L	496-11-7	NE	NE	NE	NE	0.49	J	1	0.52	J	1	0.15	J	1		U	1		U	1		U	1	5.6		1		U	1
Isopropylbenzene	ug/L	98-82-8	NE	NE	450	45		U	1		U	1		U	1		U	1		U	1		U	1	4.3		1		U	1
Methyl Cyclohexane	ug/L	108-87-2	NE	NE	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1	3		1		U	1
Methyl tert-Butyl Ether	ug/L	1634-04-4	NE	NE	14	14	0.19	J	1	0.14	J	1	0.25	J	1	0.56	J	1		U	1	1		1	0.18	J	1		U	1
Methylene Chloride	ug/L	75-09-2	NE	5.00	11	11		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
n-Propylbenzene	ug/L	103-65-1	NE	NE	660	66		U	1		U	1		U	1		U	1		U	1		U	1	6.4	J	1		U	1
Tetrachloroethene	ug/L	127-18-4	NE	5	11	4.1		U	1		U	1	0.6	J	1	0.47	J	1		U	1	1.6		1		U	1	0.22	J	1
Tetrahydrofuran	ug/L	109-99-9	NE	NE	3400	340	1.7	J	2	5.1		2	9.5		2	0.95	J	2		U	2	1.4	J	2	80	J	2	36		2
Toluene	ug/L	108-88-3	NE	1000	1100	110		U	1	13		1		U	1		U	1		U	1		U	1	0.73	J	1		U	1
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	100	360	36		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Trichloroethene	ug/L	79-01-6	NE	5.00	0.49	0.28		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Vinyl Chloride	ug/L	75-01-4	NE	2.00	0.019	0.019		U	1	0.34	J	1		U	1		U	1		U	1		U	1		U	1	0.071	J	1
Xylenes, Total	ug/L	1330-20-7	21	10000	190	19		U	2		U	2		U	2		U	2		U	2		U	2	[illegible]	[illegible]	[illegible]		U	2
SVOCs																														
1,2,4-Trichlorobenzene	ug/L	120-82-1	NE	70	1.1	0.40		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichlorobenzene	ug/L	95-50-1	NE	600	300	30		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene	ug/L	106-46-7	NE	75	0.48	0.48	0.93	J	10	1.3	J	10		U	10		U	10		U	10		U	10		U	10		U	10
2,4-Dimethylphenol	ug/L	105-67-9	NE	NE	360	36		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol	ug/L	95-57-8	NE	NE	91	9.1		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	36	3.6		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylphenol	ug/L	95-48-7	NE	NE	930	93		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
4-Methylphenol	ug/L	106-44-5	NE	NE	1900	190		U	10	1.1	J	10		U	10		U	10		U	10		U	10		U	10		U	10
Benzo[a]pyrene	ug/L	50-32-8	NE	0.2	0.0034	0.0034		U	0.052		U	0.052		U	0.052		U	0.051		U	0.05		U	0.052		U	0.05		U	0.052
Benzo[b]fluoranthene	ug/L	205-99-2	NE	NE	0.034	0.034		U	0.052		U	0.052		U	0.052		UJ	0.051		UJ	0.05		U	0.052		U	0.05		U	0.052
Bis(2-chloroethyl) Ether	ug/L	111-44-4	0.14	NE	0.014	0.014	[illegible]		[illegible]		U	0.021		U	0.021	[illegible]		[illegible]		U	0.02	[illegible]		[illegible]	[illegible]		[illegible]		U	0.021
Bis(2-ethylhexyl) Phthalate	ug/L	117-81-7	NE	6.00	5.6	5.6		U	2.1		U	2.1		U	2.1		U	2		U	2		U	2.1		U	2		U	2.1
Bisphenol A	ug/L	80-05-7	NE	NE	770	77	15		10	11		10	8.6	J	10	6.7	J	10	5	J	10	8.2	J	10	48		10		U	10
Caprolactam	ug/L	105-60-2	NE	NE	9900	990		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Diethyl Phthalate	ug/L	84-66-2	NE	NE	15000	1500		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate	ug/L	84-74-2	NE	NE	900	90		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether	ug/L	101-84-8	NE	NE	NE	NE	2.4	J	10		U	10		U	10		U	10		U	10		U	10	1.5	J+	10		U	10
Hexachlorobenzene	ug/L	118-74-1	NE	1	0.049	0.049		U	0.021		U	0.021		U	0.021		U	0.02		U	0.02		U	0.021		U	0.02		U	0.021
N,N-Dimethylaniline	ug/L	121-69-7	25	NE	35	3.5		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Naphthalene	ug/L	91-20-3	0.63	NE	0.17	0.17		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Nitrobenzene	ug/L	98-95-3	NE	NE	0.14	0.14		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
N-Methylaniline	ug/L	100-61-8	NE	NE	38	3.8		U	5.2		U	5.2		U	5.2		UJ	5.1		UJ	5		U	5.2	7.9	J	5		U	5.2
Pentachlorophenol	ug/L	87-86-5	NE	1.00	0.040	0.040		U	0.21		U	0.21		U	0.21		U	0.2		U	0.2		U	0.21	0.056	J	0.2		U	0.21
Phenol	ug/L	108-95-2	NE	NE	5800	580		U	10	1.9	J	10		U	10		U	10		U	10		U	10		U	10		U	10
Dissolved Metals																														
Iron	ug/L	7439-89-6	13939	NE	14000	1400	[illegible]		150	[illegible]		150	10100		150	[illegible]		150	[illegible]		150	1730		150	[illegible]		150	[illegible]		150
Manganese	ug/L	7439-96-5	260	NE	NE	NE	[illegible]		5	[illegible]		15	285		15	[illegible]		5	[illegible]		15	1700		15	[illegible]		15	[illegible]		15

APPENDIX B-2
SUMMARY OF DETECTED COMPOUNDS

Summary of PRG/MCL/RSL Screening – September-October 2017

Appendix B-2A
Summary of PRG Screening - Spring 2017
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

		VOCs												SVOCs						Metals			
Compou(ND)		1,2,4-Trimethylbenzene		1,3,5-Trimethylbenzene		1,4-Dioxane		Benzene		Ethylbenzene		Xylenes, Total		Bis(2-chloroethyl) Ether		N,N-Dimethylaniline		Naphthalene		Iron		Manganese	
MCL		5.7		6.1		4.6		4.6		15		21		0.14		25		0.63		13939		260	
All results in ug/L	Depth (ft bgs)	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance
DDA Extraction Wells																							
B-4DR	NA	38	YES	170	YES	30	YES	3.1	NO	9.4	NO	170	YES	16	YES	<1	(ND)	20	YES	73,800	YES	4,840	YES
BG-1	NA	46	YES	20	YES	45	YES	19	YES	3.1	NO	59	YES	7.1	YES	<1	(ND)	0.94	YES	51,200	YES	5,330	YES
C-18D	NA	51	YES	17	YES	120	YES	540	YES	130	YES	450	YES	16	YES	<1	(ND)	2.7	YES	39,800	YES	5,260	YES
C-19D	NA	0.95	NO	0.46	NO	210	YES	20	YES	<1	(ND)	1.1	NO	17	YES	<1	(ND)	<10	(ND)	34,000	YES	7,700	YES
C-20D	NA	<1	(ND)	0.34	NO	410	YES	4	NO	<1	(ND)	<2	(ND)	32	YES	<1	(ND)	<10	(ND)	30,400	YES	10,000	YES
C-2D	NA	1.3	NO	6.2	YES	150	YES	2.9	NO	0.71	NO	5	NO	16	YES	<1	(ND)	<10	(ND)	10,300	NO	4,430	YES
C-30	NA	58	YES	21	YES	200	YES	360	YES	63	YES	470	YES	12	YES	<1	(ND)	2.3	YES	47,800	YES	5,270	YES
C-4D	NA	1.3	NO	0.6	NO	79	YES	21	YES	<1	(ND)	1.1	NO	94	YES	2.9	NO	2.1	YES	22,600	YES	2,090	YES
DDA Monitoring Wells																							
B-2D	NA	1	NO	0.44	NO	600	YES	20	YES	<1	(ND)	3.2	NO	24	YES	<1.1	(ND)	<11	(ND)	25,800	YES	5,210	YES
B-3D	NA	1.3	NO	0.48	NO	730	YES	12	YES	<1	(ND)	4.2	NO	86	YES	<1	(ND)	<10	(ND)	7,750	NO	13,100	YES
C-1D	NA	32	YES	0.78	NO	76	YES	88	YES	11	NO	23	YES	12	YES	<5.2	(ND)	<52	(ND)	27,400	YES	2,860	YES
C-22S	NA	<1	(ND)	<1	(ND)	210	YES	0.45	NO	<1	(ND)	<2	(ND)	5.6	YES	<1	(ND)	<10	(ND)	51,300	YES	4,160	YES
C-3D	NA	<1	(ND)	<1	(ND)	4.9	YES	0.092	NO	<1	(ND)	<2	(ND)	0.28	YES	<1	(ND)	<10	(ND)	48,200	YES	4,470	YES
DGC-7C	NA	<1	(ND)	<1	(ND)	0.32	NO	0.34	NO	<1	(ND)	<2	(ND)	<0.02	(ND)	<1	(ND)	<10	(ND)	95,100	YES	1,170	YES
GA-101	NA	3,000	YES	800	YES	9.5	YES	23	YES	2,000	YES	6,800	YES	<0.021	(ND)	<1	(ND)	93	YES	31,200	YES	523	YES
MHW-1M	NA	0.58	NO	<1	(ND)	1,200	YES	73	YES	0.44	NO	1.1	NO	4.9	YES	<1	(ND)	<10	(ND)	6,880	NO	1,210	YES
MHW-1S	NA	1.4	NO	0.55	NO	940	YES	19	YES	1	NO	6.4	NO	39	YES	<1	(ND)	<10	(ND)	36,900	YES	38,100	YES
P-4D	NA	0.4	NO	<1	(ND)	4.3	NO	3.6	NO	<1	(ND)	0.85	NO	0.11	NO	<1	(ND)	<10	(ND)	19,200	YES	1,240	YES
PZ-11-EXT	NA	1,900	YES	480	YES	47	YES	230	YES	410	YES	4,300	YES	6.8	YES	<1.1	(ND)	52	YES	38,900	YES	139	NO
PZ-4-INTR	NA	0.27	NO	<1	(ND)	1.5	NO	4.1	NO	1.1	NO	2.4	NO	<0.021	(ND)	<1	(ND)	<10	(ND)	13,900	NO	1,890	YES
PZ-6N	NA	<1	(ND)	<1	(ND)	450	YES	2.6	NO	<1	(ND)	<2	(ND)	7.1	YES	<1	(ND)	<10	(ND)	6,600	NO	22,500	YES
PZ-6S	NA	580	YES	200	YES	3.6	NO	3,000	YES	1,000	YES	4,100	YES	<0.021	(ND)	<1	(ND)	9.6	YES	46,300	YES	1,730	YES
PW-1(U) Monitoring Wells - TZ																							
DDA-05	NA	210	YES	60	YES	82	YES	110	YES	2.5	NO	290	YES	24	YES	<1	(ND)	8.4	YES	46,100	YES	1,340	YES
DDA-06	NA	0.68	NO	<1	(ND)	100	YES	18	YES	<1	(ND)	<2	(ND)	18	YES	1	NO	<10	(ND)	2,060	NO	344	YES
PW-1(U) Monitoring Wells - US																							
DDA-01	NA	<1	(ND)	<1	(ND)	5.5	YES	<1	(ND)	<1	(ND)	<2	(ND)	0.52	YES	<1	(ND)	<10	(ND)	21,700	YES	1,240	YES
DDA-02	NA	<1	(ND)	<1	(ND)	7.5	YES	<1	(ND)	<1	(ND)	<2	(ND)	0.2	YES	<1	(ND)	<10	(ND)	16,600	YES	1,510	YES
DDA-03	NA	<1	(ND)	<1	(ND)	0.58	NO	<1	(ND)	<1	(ND)	<2	(ND)	<0.021	(ND)	<1	(ND)	<10	(ND)	7,400	NO	6,030	YES
DDA-10-US	NA	9.9	YES	2.6	NO	90	YES	74	YES	29	YES	38	YES	33	YES	<1	(ND)	<10	(ND)	58,800	YES	4,970	YES
DDA-12-US	NA	420	YES	99	YES	110	YES	29	YES	26	YES	730	YES	<0.021	(ND)	<1	(ND)	2.5	YES	57,700	YES	3,200	YES
DGC-2S	NA	<1	(ND)	<1	(ND)	2.8	NO	<1	(ND)	<1	(ND)	<2	(ND)	<0.021	(ND)	<1	(ND)	<10	(ND)	2,140	NO	1,410	YES
DGC-5	NA	<1	(ND)	<1	(ND)	1.4	NO	<1	(ND)	<1	(ND)	<2	(ND)	0.077	NO	<1	(ND)	<10	(ND)	53,300	YES	8,380	YES
DGC-7S	NA	<1	(ND)	<1	(ND)	11	YES	<1	(ND)	<1	(ND)	<2	(ND)	1.1	YES	<1	(ND)	<10	(ND)	42,100	YES	1,690	YES
MHW-1D	NA	<1	(ND)	<1	(ND)	6	YES	<1	(ND)	<1	(ND)	<2	(ND)	0.15	YES	<1	(ND)	<10	(ND)	19,500	YES	3,210	YES
PW-1(U)	NA	9.5	YES	2.5	NO	100	YES	14	YES	2.3	NO	11	NO	10	YES	<1	(ND)	<10	(ND)	28,100	YES	2,280	YES
Downgradient UPA Wells																							
AWC-E1	132	<1	(ND)	<1	(ND)	19	YES	0.27	NO	<1	(ND)	<2	(ND)	2.7	YES	<1	(ND)	<10	(ND)	3,700	NO	2,010	YES
AWC-E1	156	<1	(ND)	<1	(ND)	31	YES	0.22	NO	<1	(ND)	<2	(ND)	2	YES	<1	(ND)	<10	(ND)	6,160	NO	1,840	YES
AWC-E2	140	<1	(ND)	<1	(ND)	110	YES	0.99	NO	<1	(ND)	<2	(ND)	21	YES	<1	(ND)	<10	(ND)	5,310	NO	1,110	YES
AWC-E2	165	<1	(ND)	<1	(ND)	120	YES	0.89	NO	<1	(ND)	<2	(ND)	20	YES	<1	(ND)	<10	(ND)	3,090	NO	826	YES
DGC-10D	NA	<1	(ND)	<1	(ND)	0.88	NO	<1	(ND)	<1	(ND)	<2	(ND)	0.055	NO	<1	(ND)	<10	(ND)	<150	(ND)	102	NO
DGC-10S	NA	<1	(ND)	<1	(ND)	2.1	NO	<1	(ND)	<1	(ND)	<2	(ND)	0.14	YES	<1	(ND)	<10	(ND)	8,980	NO	318	YES
DGC-11D	NA	<1	(ND)	<1	(ND)	<0.4	(ND)	<1	(ND)	<1	(ND)	<2	(ND)	<0.02	(ND)	<1	(ND)	<10	(ND)	308	NO	6.7	NO
DGC-11S	NA	<1	(ND)	<1	(ND)	<0.4	(ND)	<1	(ND)	<1	(ND)	<2	(ND)	<0.02	(ND)	<1	(ND)	<10	(ND)	4,700	NO	113	NO
RT-1-UP	NA	<1	(ND)	<1	(ND)	67	YES	<1	(ND)	<1	(ND)	<2	(ND)	<0.021	(ND)	<1	(ND)	<10	(ND)	5,000	NO	163	NO
UPA-01	NA	<1	(ND)	<1	(ND)	230	YES	180	YES	22	YES	<2	(ND)	66	YES	<1	(ND)	<10	(ND)	30,000	YES	4,010	YES
UPA-02D	NA	<1	(ND)	<1	(ND)	37	YES	0.24	NO	<1	(ND)	<2	(ND)	5.1	YES	<1	(ND)	<10	(ND)	4,240	NO	1,160	YES
UPA-02S	NA	<1	(ND)	<1	(ND)	<0.4	(ND)	<1	(ND)	<1	(ND)	<2	(ND)	<0.02	(ND)	<1	(ND)	<10	(ND)	361	NO	50.9	NO
UPA-03D	NA	<1	(ND)	<1	(ND)	23	YES	<1	(ND)	<1	(ND)	<2	(ND)	2.5	YES	<1	(ND)	<10	(ND)	482	NO	12.2	NO
AWC Wells																							
AWC-K1	NA	<1	(ND)	<1	(ND)	0.97	NO	<1	(ND)	<1	(ND)	<2	(ND)	<0.02	(ND)	<1	(ND)	<10	(ND)	2,630	NO	54.1	NO
NCC UPA Monitoring Wells																							
BW-1	NA	<1	(ND)	<1	(ND)	4.6	YES	0.15	NO	<1	(ND)	<2	(ND)	0.27	YES	<1	(ND)	<10	(ND)	17,200	YES	3,970	YES
BW-2	NA	<1	(ND)	<1	(ND)	120	YES	0.15	NO	<1	(ND)	0.48	NO	0.28	YES	<1	(ND)	<10	(ND)	4,370	NO	1,680	YES
MW-18	NA	<1	(ND)	<1	(ND)	13	YES	0.13	NO	<1	(ND)	<2	(ND)	1.4	YES	<1	(ND)	<10	(ND)	48,700	YES	3,500	YES
MW-26N	NA	<1	(ND)	<1	(ND)	52	YES	0.34	NO	<1	(ND)	<2	(ND)	13	YES	<1	(ND)	<10	(ND)	229	NO	2,250	YES
MW-28	NA	<1	(ND)	<1	(ND)	120	YES	0.29	NO	<1	(ND)	<2	(ND)	2.3	YES	<1	(ND)	<10	(ND)	58,800	YES	1,180	YES
MW-29	NA	<1	(ND)	<1	(ND)	1.3	NO	<1	(ND)	<1	(ND)	<2	(ND)	<0.021	(ND)	<1	(ND)	<10	(ND)	41,100	YES	397	YES
MW-31	NA	<1	(ND)	<1	(ND)	1.6	NO	0.38	NO	<1	(ND)	<2	(ND)	<0.021	(ND)	<1	(ND)	<10	(ND)	10,100	NO	293	YES
MW-34	NA	<1	(ND)	<1	(ND)	17	YES	<1	(ND)	<1	(ND)	<2	(ND)	2.1	YES	<1	(ND)	<10	(ND)	20,500	YES	2,240	YES
P-4_UPA	NA	<1	(ND)	<1	(ND)	<0.4	(ND)	<1	(ND)	<1	(ND)	<2	(ND)	<0.02	(ND)	<1	(ND)	<10	(ND)	80,600	YES	3,230	YES
P-5L	NA	<1	(ND)	<1	(ND)	20	YES	<1	(ND)	<1	(ND)	<2	(ND)	1.1	YES	<1	(ND)	<10	(ND)	1,730	NO	1,170	YES
P-6_UPA	NA	13	YES	4.8	NO	180	YES	130	YES	4.9	NO	23	YES	52	YES	<1	(ND)	<10	(ND)	14,000	YES	669	YES
RW-10	NA	<1	(ND)	<1	(ND)	<0.4	(ND)	<1	(ND)	<1	(ND)	<2	(ND)	<0.021	(ND)	<1	(ND)	<10	(ND)	31,000	YES	1,030	YES

Appendix B-2B
Summary of MCL Screening - Spring 2017
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

		VOCs																		SVOCs					
Compou(ND)		1,1,1-Trichloroethane		1,2-Dichloroethane		Chlorobenzene		cis-1,2-Dichloroethene		Methylene Chloride		Tetrachloroethene		Toluene		trans-1,2-Dichloroethene		Trichloroethene		Vinyl Chloride		1,2,4-Trichlorobenzene		1,2-Dichlorobenzene		1,4-Dichlorobenzene	
MCL		200		5		100		70		5		5		1,000		100		5		2		70		600		75	
All results in ug/L	Depth (ft bgs)	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance
DDA Extraction Wells																											
B-4DR		<10	(ND)	2.6	No	2,000	Yes	<10	(ND)	<10	(ND)	<10	(ND)	2.8	No	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)	30	No	52	No
BG-1		<1	(ND)	<1	(ND)	2.7	No	0.58	No	<1	(ND)	<1	(ND)	19	No	<1	(ND)	0.27	No	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
C-18D		<10	(ND)	<10	(ND)	31	No	33	No	<10	(ND)	<10	(ND)	3,500	Yes	<10	(ND)	<10	(ND)	2.6	Yes	<1	(ND)	<10	(ND)	<10	(ND)
C-19D		<1	(ND)	0.43	No	6.2	No	0.28	No	<1	(ND)	<1	(ND)	0.27	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
C-20D		<1	(ND)	1.3	No	7.1	No	0.42	No	<1	(ND)	0.28	No	<1	(ND)	<1	(ND)	0.38	No	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
C-2D		<1	(ND)	0.47	No	19	No	0.31	No	<1	(ND)	<1	(ND)	2.2	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
C-30		<10	(ND)	12	Yes	36	No	79	Yes	<10	(ND)	<10	(ND)	2,700	Yes	<10	(ND)	<10	(ND)	2.7	Yes	<1	(ND)	<10	(ND)	<10	(ND)
C-4D		<1	(ND)	<1	(ND)	29	No	<1	(ND)	<1	(ND)	<1	(ND)	0.35	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	5.5	No	6.2	No
DDA Monitoring Wells																											
B-2D		<1	(ND)	0.4	No	7.6	No	0.4	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1.1	(ND)	<11	(ND)	<11	(ND)
B-3D		<1	(ND)	78	Yes	18	No	1.2	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	1.6	No	<1	(ND)	<1	(ND)	3	No	3	No
C-1D		<1	(ND)	<1	(ND)	27	No	<1	(ND)	<1	(ND)	<1	(ND)	0.57	No	<1	(ND)	<1	(ND)	<1	(ND)	<5.2	(ND)	<52	(ND)	<52	(ND)
C-22S		<1	(ND)	0.61	No	1.1	No	0.65	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
C-3D		<1	(ND)	<1	(ND)	<1	(ND)	0.32	No	<1	(ND)	0.14	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DGC-7C		<1	(ND)	<1	(ND)	3.7	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
GA-101		<20	(ND)	<20	(ND)	28	No	35	No	<20	(ND)	4.1	No	2,800	Yes	<20	(ND)	7.3	Yes	5	Yes	8.2	No	2.4	No	<10	(ND)
MHW-1M		<1	(ND)	0.5	No	5.3	No	0.32	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.29	No	<1	(ND)	<10	(ND)	<10	(ND)
MHW-1S		<1	(ND)	<1	(ND)	13	No	0.45	No	<1	(ND)	0.23	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
P-4D		<1	(ND)	1.3	No	0.84	No	0.5	No	<1	(ND)	0.25	No	0.47	No	<1	(ND)	0.54	No	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
PZ-11-EXT		<10	(ND)	<10	(ND)	66	No	<10	(ND)	<10	(ND)	<10	(ND)	4	No	<10	(ND)	<10	(ND)	<10	(ND)	<1.1	(ND)	2.9	No	2.3	No
PZ-4-INTR		<1	(ND)	0.25	No	1.5	No	0.27	No	<1	(ND)	0.17	No	0.33	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
PZ-6N		<1	(ND)	8.2	Yes	30	No	7.6	No	0.43	No	<1	(ND)	<1	(ND)	0.39	No	<1	(ND)	1.1	No	<1	(ND)	<10	(ND)	<10	(ND)
PZ-6S		15	No	21	Yes	230	Yes	1,400	Yes	<50	(ND)	9.3	Yes	24,000	Yes	<50	(ND)	<50	(ND)	<50	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
PW-1(U) Monitoring Wells - TZ																											
DDA-05		<1	(ND)	<1	(ND)	51	No	<1	(ND)	<1	(ND)	<1	(ND)	1.1	No	0.29	No	<1	(ND)	<1	(ND)	<1	(ND)	1.2	No	2.8	No
DDA-06		<1	(ND)	<1	(ND)	3.9	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	2.9	No	0.97	No
PW-1(U) Monitoring Wells - US																											
DDA-01		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	2.3	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DDA-02		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DDA-03		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DDA-10-US		<1	(ND)	0.36	No	1.6	No	0.93	No	<1	(ND)	<1	(ND)	0.66	No	<1	(ND)	<1	(ND)	0.58	No	<1	(ND)	<10	(ND)	<10	(ND)
DDA-12-US		<2	(ND)	<2	(ND)	3.8	No	<2	(ND)	<2	(ND)	<2	(ND)	1.2	No	<2	(ND)	<2	(ND)	<2	(ND)	<1	(ND)	1.9	No	0.98	No
DGC-2S		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DGC-5		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DGC-7S		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
MHW-1D		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
PW-1(U)		<1	(ND)	0.3	No	2.1	No	<1	(ND)	<1	(ND)	1.6	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
Downgradient UPA Wells																											
AWC-E1	132	<1	(ND)	0.28	No	4.9	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
AWC-E1	156	<1	(ND)	0.28	No	4.6	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	0.72	No
AWC-E2	140	<1	(ND)	1.4	No	7.1	No	0.47	No	<1	(ND)	0.12	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	0.72	No
AWC-E2	165	<1	(ND)	1.7	No	9.5	No	0.51	No	<1	(ND)	0.12	No	<1	(ND)	<1	(ND)	0.22	No	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DGC-10D		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.29	No	<1	(ND)	<1	(ND)	0.24	No	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DGC-10S		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.39	No	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DGC-11D		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
DGC-11S		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
RT-1-UP		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
UPA-01		<1	(ND)	0.58	No	6	No	0.74	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	1.2	No	<10	(ND)
UPA-02D		<1	(ND)	<1	(ND)	5.4	No	<1	(ND)	<1	(ND)	0.32	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
UPA-02S		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
UPA-03D		<1	(ND)	<1	(ND)	0.31	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
AWC Wells																											
AWC-K1		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	2.1	No	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
NCC UPA Monitoring Wells																											
BW-1		<1	(ND)	<1	(ND)	6.6	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
BW-2		<1	(ND)	<1	(ND)	3.2	No	<1	(ND)	<1	(ND)	<1	(ND)	0.67	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
MW-18		<1	(ND)	<1	(ND)	8.3	No	<1	(ND)	<1	(ND)	0.42	No	<1	(ND)	<1	(ND)	<1	(ND)	0.85	No	<1	(ND)	<10	(ND)	0.94	No
MW-28N		<1	(ND)	0.91	No	8	No	0.39	No	<1	(ND)	0.87	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
MW-28		<1	(ND)	<1	(ND)	5.2	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	0.93	No
MW-29		<1	(ND)	<1	(ND)	6.1	No	<1	(ND)	<1	(ND)	<1	(ND)	13	No	<1	(ND)	<1	(ND)	0.34	No	<1	(ND)	<10	(ND)	1.3	No
MW-31		<1	(ND)	<1	(ND)	5.2	No	<1	(ND)	<1	(ND)	0.6	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
MW-34		<1	(ND)	<1	(ND)	6.4	No	<1	(ND)	<1	(ND)	0.47	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
P-4_UPA		<1	(ND)	0.59	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
P-5L		<1	(ND)	<1	(ND)	1.2	No	<1	(ND)	<1	(ND)	1.6	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
P-6_UPA		<1	(ND)	<1	(ND)	4.6	No	<1	(ND)	<1	(ND)	<1	(ND)	0.73	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<10	(ND)	<10	(ND)
RW-10		<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.22	No	<1	(ND)	<1	(ND)	<1	(ND)	0.071	No	<1	(ND)	<10	(ND)	<10	(ND)

Appendix B-2B
Summary of MCL Screening - Spring 2017
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

		SVOCs							
Compou(ND)		Benzo[a]pyrene		Bis(2-ethylhexyl) Phthalate		Hexachlorobenzene		Pentachlorophenol	
MCL		0.2		6		1		1	
All results in ug/L	Depth (ft bgs)	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance	Maximum Result	MCL Exceed-ance
DDA Extraction Wells									
B-4DR		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
BG-1		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
C-18D		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
C-19D		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
C-20D		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
C-2D		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
C-30		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
C-4D		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DDA Monitoring Wells									
B-2D		<0.053	(ND)	<2.1	(ND)	0.013	No	<0.21	(ND)
B-3D		<0.051	(ND)	16	Yes	<0.02	(ND)	<0.2	(ND)
C-1D		<0.052	(ND)	<10	(ND)	<0.021	(ND)	<0.21	(ND)
C-22S		<0.052	(ND)	1.3	No	<0.021	(ND)	<0.21	(ND)
C-3D		<0.052	(ND)	1.3	No	<0.021	(ND)	<0.21	(ND)
DGC-7C		0.029	No	<2	(ND)	<0.02	(ND)	<0.2	(ND)
GA-101		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	0.17	No
M/HW-1M		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
M/HW-1S		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
P-4D		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
PZ-11-EXT		<0.053	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
PZ-4-INTR		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
PZ-8N		<0.052	(ND)	1.3	No	<0.021	(ND)	<0.21	(ND)
PZ-8S		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	0.18	No
PW-1(U) Monitoring Wells - TZ									
DDA-05		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
DDA-06		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
PW-1(U) Monitoring Wells - US									
DDA-01		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DDA-02		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DDA-03		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
DDA-10-US		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DDA-12-US		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
DGC-2S		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
DGC-5		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DGC-7S		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
M/HW-1D		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
PW-1(U)		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
Downgradient UPA Wells									
AWC-E1	132	<0.05	(ND)	1.1	No	<0.02	(ND)	<0.2	(ND)
AWC-E1	156	<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
AWC-E2	140	<0.5	(ND)	<2	(ND)	<0.2	(ND)	<2	(ND)
AWC-E2	165	<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DGC-10D		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DGC-10S		<0.05	(ND)	1	No	<0.02	(ND)	<0.2	(ND)
DGC-11D		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
DGC-11S		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
RT-1-UP		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
UPA-01		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
UPA-02D		<0.05	(ND)	<2	(ND)	0.011	No	<0.2	(ND)
UPA-02S		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
UPA-03D		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
AWC Wells									
AWC-K1		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
NCC UPA Monitoring Wells									
BW-1		<0.052	(ND)	2.6	No	<0.021	(ND)	<0.21	(ND)
BW-2		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
MW-18		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
MW-26N		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
MW-28		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
MW-29		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
MW-31		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
MW-34		<0.051	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
P-4_UPA		<0.05	(ND)	<2	(ND)	<0.02	(ND)	<0.2	(ND)
P-5L		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)
P-8_UPA		<0.05	(ND)	<2	(ND)	<0.02	(ND)	0.058	No
RW-10		<0.052	(ND)	<2.1	(ND)	<0.021	(ND)	<0.21	(ND)

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Spring 2017
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

		VOCs																							
Compou(ND)		1,1-Dichloroethane		1,2,3-Trimethylbenzene		1,3,5-Trimethylbenzene		4-Methyl-2-pentanone		Acetone		Carbon Disulfide		Chloroethane		Cyclohexane		Diethyl Ether		Isopropylbenzene		Methyl tert-Butyl Ether		n-Propylbenzene		Tetrahydrofuran	
RSL (HQ = 0.1)		2.7		1		12		120		1,400		81		2,100		1,300		390		45		14		66		340	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance
DDA Extraction Wells																											
B-4DR		<10	(ND)	120	Yes	170	Yes	<50	(ND)	<50	(ND)	<10	(ND)	<10	(ND)	4.6	No	<10	(ND)	6.8	No	<10	(ND)	6.7	No	<20	(ND)
BG-1		0.27	No	21	Yes	20	Yes	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	5.4	No	0.53	No	8.5	No	0.5	No	14	No	6.5	No
C-18D		<10	(ND)	20	Yes	17	Yes	<50	(ND)	<50	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	5.8	No	<10	(ND)	10	No	<20	(ND)
C-19D		0.25	No	1.3	Yes	0.46	No	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	1.8	No	0.38	No	<1	(ND)	0.43	No	4.3	No
C-20D		<1	(ND)	<1	(ND)	0.34	No	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	0.52	No	2.7	No	0.84	No	<1	(ND)	0.79	No	<2	(ND)
C-2D		0.51	No	5.5	Yes	6.2	No	2.2	No	8.3	No	<1	(ND)	<1	(ND)	1.2	No	0.73	No	0.67	No	<1	(ND)	0.74	No	16	No
C-30		3	Yes	26	Yes	21	Yes	<50	(ND)	<50	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	5	No	<20	(ND)
C-4D		0.55	No	23	Yes	0.6	No	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	23	No	0.83	No	21	No	<1	(ND)	20	No	15	No
DDA Monitoring Wells																											
B-2D		<1	(ND)	0.61	No	0.44	No	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	3.4	No	1.4	No	0.28	No	0.32	No	4.5	No
B-3D		0.59	No	0.68	No	0.48	No	<5	(ND)	<5	(ND)	<1	(ND)	1.4	No	1.1	No	2.1	No	3.5	No	<1	(ND)	0.84	No	9.8	No
C-1D		0.65	No	3.1	Yes	0.78	No	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	4	No	0.62	No	17	No	<1	(ND)	30	No	29	No
C-22S		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.4	No	<1	(ND)	<1	(ND)	<1	(ND)	6	No
C-3D		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.33	No	<1	(ND)	<2	(ND)
DGC-7C		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	25	No	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
GA-101		<20	(ND)	890	Yes	800	Yes	<100	(ND)	<100	(ND)	<20	(ND)	<20	(ND)	20	No	<20	(ND)	150	Yes	<20	(ND)	450	Yes	<40	(ND)
MHW-1M		0.36	No	0.17	No	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	0.4	No	21	No	2.9	No	<1	(ND)	0.68	No	6.9	No
MHW-1S		1	No	0.52	No	0.55	No	<5	(ND)	13	No	<1	(ND)	<1	(ND)	<1	(ND)	5.9	No	1.4	No	<1	(ND)	0.83	No	57	No
P-4D		0.25	No	0.27	No	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
PZ-11-EXT		<10	(ND)	520	Yes	480	Yes	<50	(ND)	<50	(ND)	<10	(ND)	<10	(ND)	13	No	<10	(ND)	81	Yes	<10	(ND)	240	Yes	<20	(ND)
PZ-4-INTR		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.37	No	<1	(ND)	<1	(ND)	<2	(ND)
PZ-6N		2.3	No	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	2.7	No	<1	(ND)	5.1	No	<1	(ND)	<1	(ND)	<1	(ND)	83	No
PZ-6S		13	Yes	210	Yes	200	Yes	<250	(ND)	<250	(ND)	<50	(ND)	<50	(ND)	38	No	<50	(ND)	34	No	<50	(ND)	90	Yes	<100	(ND)
PW-1(U) Monitoring Wells - TZ																											
DDA-05		0.86	No	76	Yes	60	Yes	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	3	No	0.44	No	24	No	<1	(ND)	28	No	20	No
DDA-06		0.32	No	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.55	No	22	No	0.26	No	19	No	<2	(ND)
PW-1(U) Monitoring Wells - US																											
DDA-01		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.33	No	<1	(ND)	<2	(ND)
DDA-02		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	1.2	No	<1	(ND)	<2	(ND)
DDA-03		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.46	No	<1	(ND)	<2	(ND)
DDA-10-US		0.41	No	2.1	Yes	2.6	No	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	6	No	2.2	No	4.5	No	0.33	No	3.9	No	2.5	No
DDA-12-US		<2	(ND)	100	Yes	99	Yes	<10	(ND)	<10	(ND)	<2	(ND)	<2	(ND)	30	No	0.59	No	38	No	0.45	No	55	No	3.8	No
DGC-2S		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.15	No	<1	(ND)	<2	(ND)
DGC-5		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
DGC-7S		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.25	No	<1	(ND)	0.52	No	<1	(ND)	<2	(ND)
MHW-1D		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.14	No	<1	(ND)	<2	(ND)
PW-1(U)		<1	(ND)	2.3	Yes	2.5	No	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	0.7	No	0.98	No	1.5	No	0.36	No	1.9	No	<2	(ND)
Downgradient UPA Wells																											
AWC-E1	132	<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	9.7	No	<1	(ND)	0.89	No	<1	(ND)	<2	(ND)
AWC-E1	156	<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	0.28	No	<1	(ND)	<1	(ND)	9.1	No	<1	(ND)	0.75	No	<1	(ND)	1.5	No
AWC-E2	140	0.58	No	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	0.4	No	<1	(ND)	<1	(ND)	3.6	No	<1	(ND)	1	No	<1	(ND)	8.8	No
AWC-E2	165	0.61	No	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	0.6	No	<1	(ND)	<1	(ND)	4	No	<1	(ND)	1.5	No	<1	(ND)	9	No
DGC-10D		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.47	No	<1	(ND)	<2	(ND)
DGC-10S		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
DGC-11D		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
DGC-11S		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
RT-1-UP		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	2.5	No
UPA-01		1.8	No	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	0.42	No	<1	(ND)	3.1	No	14	No	0.28	No	19	No	4.1	No
UPA-02D		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	3.9	No	<1	(ND)	2.6	No	<1	(ND)	3.3	No
UPA-02S		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
UPA-03D		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	0.13	No	<1	(ND)	0.48	No	<1	(ND)	<2	(ND)
AWC Wells																											
AWC-K1		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
NCC UPA Monitoring Wells																											
BW-1		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	11	No	<1	(ND)	0.2	No	<1	(ND)	<2	(ND)
BW-2		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	9	No	<1	(ND)	0.39	No	<1	(ND)	<2	(ND)
MW-18		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	12	No	<1	(ND)	0.59	No	<1	(ND)	1.9	No
MW-26N		0.29	No	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	1.3	No	<1	(ND)	2.1	No	<1	(ND)	6.8	No
MW-28		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	80	No	<1	(ND)	0.19	No	<1	(ND)	1.7	No
MW-29		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	8.5	No	<1	(ND)	0.14	No	<1	(ND)	5.1	No
MW-31		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	5.2	No	<1	(ND)	0.25	No	<1	(ND)	9.5	No
MW-34		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	7.6	No	<1	(ND)	0.56	No	<1	(ND)	0.95	No
P-4_UPA		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<2	(ND)
P-5L		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	2	No	<1	(ND)	1	No	<1	(ND)	1.4	No
P-6_UPA		0.37	No	10	Yes	4.8	No	<5	(ND)	<5	(ND)	<1	(ND)	0.68	No	3.2	No	2.7	No	4.3	No	0.18	No	6.4	No	80	No
RW-10		<1	(ND)	<1	(ND)	<1	(ND)	<5	(ND)	<5	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	<1	(ND)	36	No

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Spring 2017
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

		SVOCs																									
Compou(ND)		2,4-Dichlorophenol		2,4-Dimethylphenol		2-Methylnaphthalene		2-Methylphenol		4-Methylphenol		Acenaphthene		Anthracene		Benzo[a]anthracene		Benzo[b]fluoranthene		Bisphenol A		Diethyl Phthalate		Di-n-Butyl Phthalate		Fluorene	
RSL (HQ = 0.1)		4.6		36		3.6		93		190		53		180		0.034		0.034		77		1,500		90		29	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance
DDA Extraction Wells																											
B-4DR		<10	(ND)	5.4	No	1.9	No	<10	(ND)	<10	(ND)	<0.051	(ND)	120	Yes	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
BG-1		1.8	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	12	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
C-18D		3.9	No	<10	(ND)	<10	(ND)	55	No	41	No	<0.052	(ND)	110	Yes	<10	(ND)	12	No	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
C-19D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	39	No	2.8	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
C-20D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	37	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
C-2D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	18	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
C-30		4	No	<10	(ND)	<10	(ND)	19	No	18	No	<0.052	(ND)	69	No	<10	(ND)	6.2	No	1.1	No	<10	(ND)	<10	(ND)	<1	(ND)
C-4D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	82	Yes	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	2.9	No
DDA Monitoring Wells																											
B-2D		1	No	<11	(ND)	<11	(ND)	<11	(ND)	<11	(ND)	<0.053	(ND)	51	No	<11	(ND)	<11	(ND)	<11	(ND)	<11	(ND)	<11	(ND)	<1.1	(ND)
B-3D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	52	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
C-1D		<52	(ND)	<52	(ND)	<52	(ND)	<52	(ND)	<52	(ND)	<0.052	(ND)	180	Yes	<52	(ND)	<52	(ND)	<52	(ND)	<52	(ND)	<52	(ND)	<5.2	(ND)
C-22S		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	66	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
C-3D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	8.4	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-7C		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	0.072	Yes	<10	(ND)	2.9	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
GA-101		<10	(ND)	<10	(ND)	8	Yes	4.7	No	11	No	<0.052	(ND)	74	No	<10	(ND)	<10	(ND)	14	No	<10	(ND)	<10	(ND)	<1	(ND)
MHW-1M		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MHW-1S		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	61	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
P-4D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	13	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
PZ-11-EXT		8.8	No	<11	(ND)	2.6	No	<11	(ND)	<11	(ND)	<0.053	(ND)	95	Yes	<11	(ND)	4.2	No	4.2	No	<11	(ND)	<11	(ND)	<1.1	(ND)
PZ-4-INTR		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	11	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
PZ-6N		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	88	Yes	<10	(ND)	1.3	No	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
PZ-6S		4.7	No	<10	(ND)	1.8	No	26	No	41	No	<0.052	(ND)	97	Yes	<10	(ND)	29	No	3.2	No	<10	(ND)	<10	(ND)	<1	(ND)
PW-1(U) Monitoring Wells - TZ																											
DDA-05		2.1	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	120	Yes	<10	(ND)	8	No	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DDA-06		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	15	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	1	No
PW-1(U) Monitoring Wells - US																											
DDA-01		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DDA-02		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	8.8	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DDA-03		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DDA-10-US		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DDA-12-US		4	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	15	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-2S		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-5		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-7S		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	9.7	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MHW-1D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	8	No	2.1	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
PW-1(U)		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	14	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
Downgradient UPA Wells																											
AWC-E1	132	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	5.9	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
AWC-E1	156	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	5.6	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
AWC-E2	140	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.5	(ND)	6.7	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
AWC-E2	165	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	5.9	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-10D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-10S		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-11D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
DGC-11S		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
RT-1-UP		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	8.5	No	2	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
UPA-01		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	31	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
UPA-02D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	9.8	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
UPA-02S		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	0.88	No	<10	(ND)	<10	(ND)	<1	(ND)
UPA-03D		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
AWC Wells																											
AWC-K1		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	4.6	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
NCC UPA Monitoring Wells																											
BW-1		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	10	No	<10	(ND)	<10	(ND)	0.86	No	<10	(ND)	<10	(ND)	<1	(ND)
BW-2		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	11	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MW-18		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	6.7	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MW-26N		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	8.4	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MW-28		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	15	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MW-29		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	1.1	No	<0.052	(ND)	11	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MW-31		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	8.6	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
MW-34		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.051	(ND)	6.7	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
P-4_UPA		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	5	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
P-5L		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	8.2	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
P-6_UPA		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.05	(ND)	48	No	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)
RW-10		<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<0.052	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<10	(ND)	<1	(ND)

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Spring 2017
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

		SVOCs							
Compou(ND)		N,N-Dimethylaniline		Naphthalene		N-Methylaniline		Phenol	
RSL (HQ = 0.1)		3.5		0.17		3.8		580	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance	Maximum Result	RSL Exceed-ance
DDA Extraction Wells									
B-4DR		20	Yes	<1	(ND)	4.2	Yes	<10	(ND)
BG-1		0.94	Yes	<1	(ND)	<5.2	(ND)	<10	(ND)
C-18D		2.7	Yes	<1	(ND)	<5.2	(ND)	8.6	No
C-19D		<10	(ND)	<1	(ND)	<5.2	(ND)	0.94	No
C-20D		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
C-2D		<10	(ND)	<1	(ND)	<5.1	(ND)	<10	(ND)
C-30		2.3	Yes	<1	(ND)	<5.2	(ND)	4.2	No
C-4D		2.1	Yes	<1	(ND)	3.1	No	<10	(ND)
DDA Monitoring Wells									
B-2D		<11	(ND)	<1.1	(ND)	<5.3	(ND)	<11	(ND)
B-3D		<10	(ND)	<1	(ND)	1.5	No	<10	(ND)
C-1D		<52	(ND)	<5.2	(ND)	<26	(ND)	<52	(ND)
C-22S		<10	(ND)	<1	(ND)	1.6	No	<10	(ND)
C-3D		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
DGC-7C		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
GA-101		93	Yes	<1	(ND)	<5.2	(ND)	<10	(ND)
MHW-1M		<10	(ND)	<1	(ND)	<5.2	(ND)	1.2	No
MHW-1S		<10	(ND)	<1	(ND)	1.2	No	<10	(ND)
P-4D		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
PZ-11-EXT		52	Yes	<1.1	(ND)	<5.3	(ND)	<11	(ND)
PZ-4-INTR		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
PZ-6N		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
PZ-6S		9.6	Yes	<1	(ND)	<5.2	(ND)	11	No
PW-1(U) Monitoring Wells - TZ									
DDA-05		8.4	Yes	<1	(ND)	<5.2	(ND)	1	No
DDA-06		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
PW-1(U) Monitoring Wells - US									
DDA-01		<10	(ND)	<1	(ND)	<5.1	(ND)	<10	(ND)
DDA-02		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
DDA-03		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
DDA-10-US		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
DDA-12-US		2.5	Yes	<1	(ND)	1.4	No	<10	(ND)
DGC-2S		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
DGC-5		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
DGC-7S		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
MHW-1D		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
PW-1(U)		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
Downgradient UPA Wells									
AWC-E1	132	<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
AWC-E1	156	<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
AWC-E2	140	<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
AWC-E2	165	<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
DGC-10D		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
DGC-10S		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
DGC-11D		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
DGC-11S		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
RT-1-UP		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
UPA-01		<10	(ND)	2.5	Yes	3.1	No	1.8	No
UPA-02D		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
UPA-02S		<10	(ND)	<1	(ND)	<5.1	(ND)	<10	(ND)
UPA-03D		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
AWC Wells									
AWC-K1		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
NCC UPA Monitoring Wells									
BW-1		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
BW-2		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
MW-18		<10	(ND)	<1	(ND)	<5.1	(ND)	<10	(ND)
MW-26N		<10	(ND)	<1	(ND)	<5.1	(ND)	<10	(ND)
MW-28		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
MW-29		<10	(ND)	<1	(ND)	<5.2	(ND)	1.9	No
MW-31		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
MW-34		<10	(ND)	<1	(ND)	<5.1	(ND)	<10	(ND)
P-4_UPA		<10	(ND)	<1	(ND)	<5	(ND)	<10	(ND)
P-5L		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)
P-6_UPA		<10	(ND)	<1	(ND)	7.9	Yes	<10	(ND)
RW-10		<10	(ND)	<1	(ND)	<5.2	(ND)	<10	(ND)

APPENDIX B-3

SUMMARY OF DETECTED COMPOUNDS

Summary of Detected Compounds – Bimonthly Groundwater

Appendix B-3
Summary of Detected Compounds - June 2017 - December 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							Downgradient UPA Wells											
						Sample ID	AWC-E1			AWC-E1			AWC-E1			AWC-E1			AWC-E1		
						Sample Date	6/9/2017			6/9/2017			6/9/2017			9/6/2017			9/6/2017		
						N=Normal, FD=Field Duplicate	FD			N			N			FD			N		
Parameter	Unit	CAS	[illegible]	MCL	RSL HQ=1.0	RSL HQ=.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Total Metals																					
Iron	ug/L	7439-89-6	13939	NE	14000	1400										2700		56	2560		110
Manganese	ug/L	7439-96-5	260	NE	NE	NE															

Appendix B-3
Summary of Detected Compounds - June 2017 - December 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

						Sample ID	Downgradient UPA Wells AWC-E1			AWC-E1			AWC-E1			AWC-E1			AWC-E1			AWC-E2			AWC-E2			AWC-E2			AWC-E2			AWC-E2			AWC-E2		
						Sample Date	9/6/2017			9/28/2017			9/28/2017			12/18/2017			12/18/2017			6/9/2017			6/9/2017			9/6/2017			9/6/2017			9/28/2017			9/28/2017		
						N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	[redacted]	MCL	RSL HQ=1.0	RSL HQ=0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Total Metals																																							
Iron	ug/L	7439-89-6	13939	NE	14000	1400	4400		150	3700		150	6160		150	7210	J+	150	[redacted]			5430	J+	150	2530	J+	150	2860		150	1970		150	5510		150	3090		150
Manganese	ug/L	7439-96-5	260	NE	NE	NE	[redacted]																																

Appendix B-3
Summary of Detected Compounds - June 2017 - December 2017 Groundwater
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

							Downgradient UPA Wells									NCC UPA Monitoring Wells and P-6 Vicinity												Downgradient UPA Wells											
						Sample ID	AWC-E2			AWC-E2			AWC-E2			MW-26N			MW-26N			MW-26N			MW-26N			UPA-03D			UPA-03D			UPA-03D			UPA-03D		
						Sample Date	12/18/2017			12/18/2017			12/18/2017			6/9/2017			9/6/2017			10/5/2017			12/19/2017			6/9/2017			9/6/2017			9/29/2017			12/18/2017		
						N=Normal, FD=Field Duplicate	FD			N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	[illegible]	MCL	RSL HQ=1.0	RSL HQ=.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Total Metals																																							
Iron	ug/L	7439-89-6	13939	NE	14000	1400	5550	J+	150	5550	J+	150	2593	J+	150		U	150	109	J	150	229		150		U	150	813	J+	150	482		150	97.9	J	150		U	150
Manganese	ug/L	7439-96-5	260	NE	NE	NE	[illegible]			[illegible]			[illegible]			[illegible]			[illegible]			[illegible]			170		15	14.5	J	15	12.2	J	15	11.3	J	15	17.2		15

Appendix B - Notes
Summary of Detected Compounds - September/October 2017 Groundwater
Delaware Sand and Gravel
New Castle, Delaware

Notes:

Red highlight =	Concentration exceeds PRG
Orange highlight =	Concentration exceeds MCL
Yellow highlight =	Concentration exceeds RSL HQ=1.0
Green highlight =	Concentration exceeds RSL HQ=0.1

Abbreviations:

VOC = Volitale Organic Compounds

SVOC = Semi-Volitale Organic Compounds

PRG = Site Specific Preliminary Remediation Goals for Delaware Sand & Gravel Landfill, provided to the United States Environmental Protection Agency (USEPA) by the Trust on October 16, 2017

MCL = USEPA Maximum Contaminant Level, updated May 2009

RSL = Regional Screening Level for tapwater, updated May 2014

ug/L = micrograms per liter

mg/L = milligrams per liter

Qual = interpreted qualifier

RDL = reporting detection limit

HQ = Hazard Quotient

NE = Standard does not exist

Qualifiers:

J - estimated result

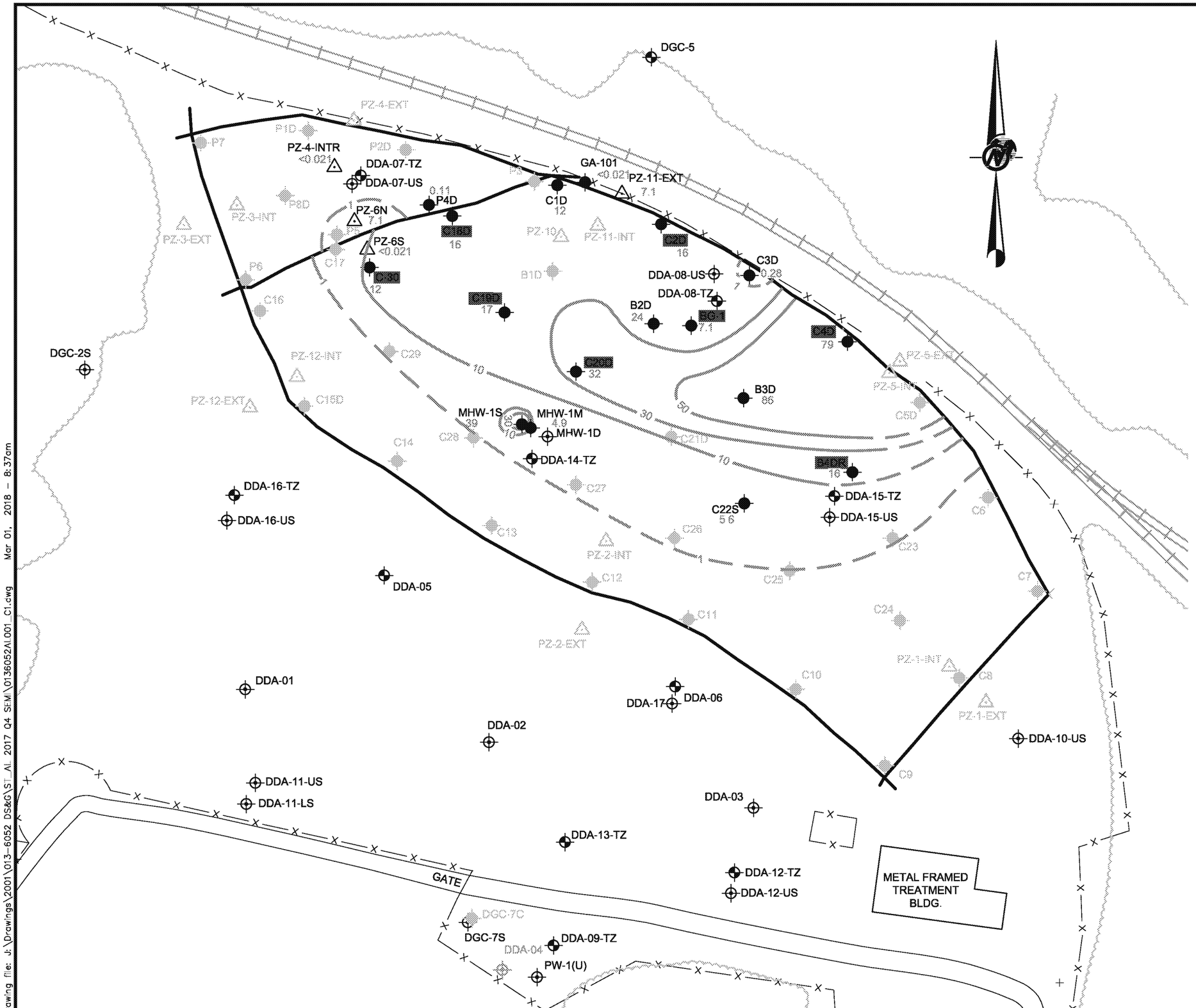
J+ - The result is an estimated quantity, but the result may be biased high.

J- - The result is an estimated quantity, but the result may be biased low.

U - not detected above RDL

UJ - not detected above RDL, RDL is estimated

APPENDIX C
ISOCONCENTRATION MAPS



LEGEND

–X——X——X——X	FENCELINE
	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS
	BCEE ISOCONCENTRATION CONTOURS (ug/l)
	BCEE ISOCONCENTRATION CONTOURS (INFERRED)
22	BCEE CONCENTRATIONS (ug/l)

NOTES

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2012)
2.) BASED ON OCTOBER 2017 GROUNDWATER DATA
3.) DASHED LINES REPRESENT INFERRED ISOCONCENTRATION CONTOURS
4.) BCEE = BIS(2-CHLOROETHYL)ETHER
5.) ug/l = MICROGRAMS PER LITER

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

60 0 60
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

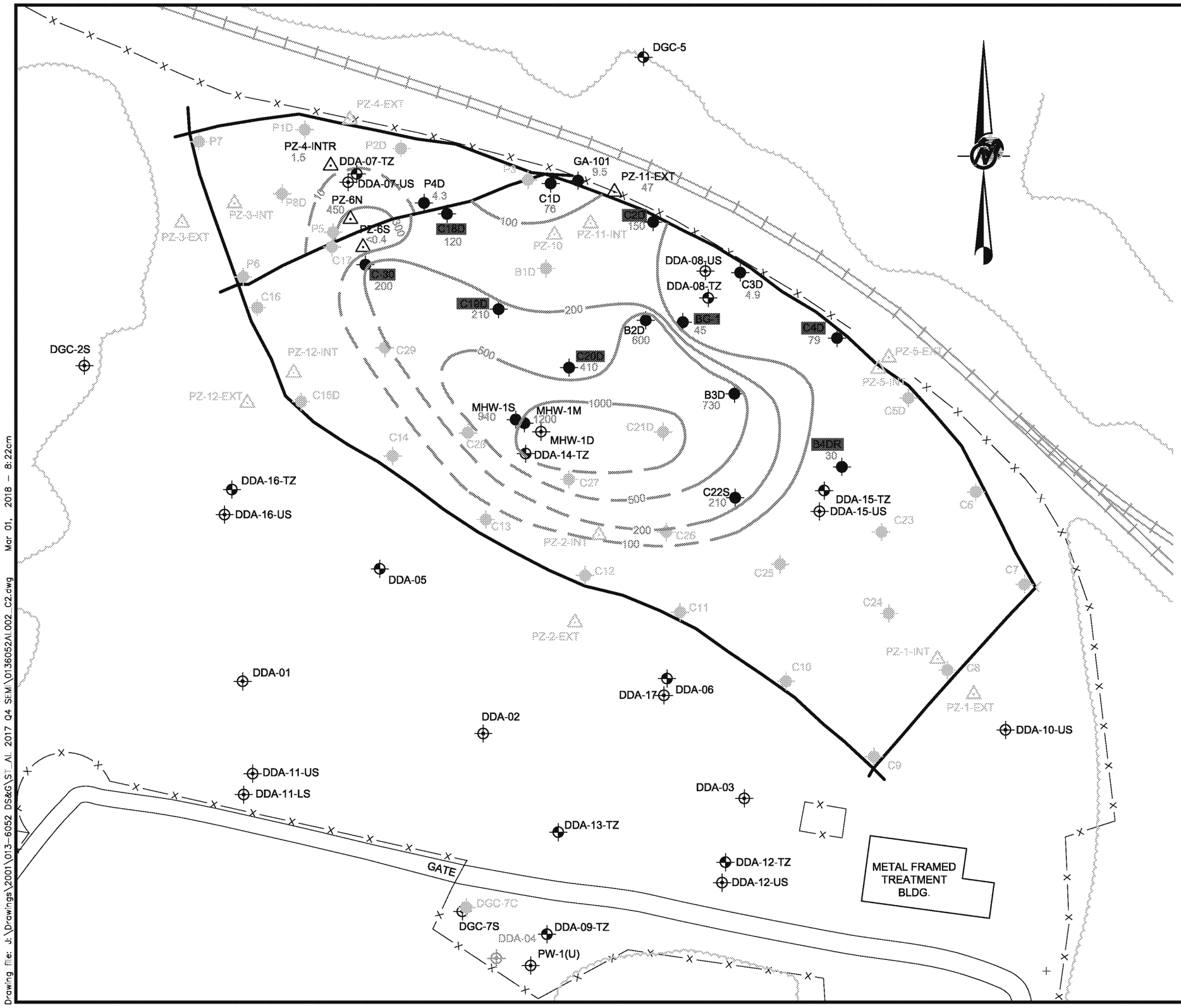
PROJECT
DELAWARE SAND AND GRAVEL
SUPERFUND SITE
NEW CASTLE, DELAWARE

TITLE
BCEE
DDA
COLUMBIA
OCTOBER 2017

Golder Associates
Manchester, New Hampshire

PROJECT No.		013-6052	FILE No.	0136052AL001_C1
DESIGN	TGB	12/20/2017	SCALE AS SHOWN	REV. 0
CADD	RWC	12/21/2017		
CHECK	CRT	01/08/2018	**FIGURE C-1**	
REVIEW	TAM	02/28/2018		

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AL 2017 Q4 SEM\0136052AL001_C1.cwg Mar 01, 2018 – 8:37am



LEGEND

–X——X——X——X	FENCELINE
	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
C18	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS
	1,4-DIOXANE ISOCONCENTRATION CONTOURS (ug/l)
	1,4-DIOXANE ISOCONCENTRATION CONTOURS (INFERRED)
22	1,4-DIOXANE CONCENTRATIONS (ug/l)

NOTES

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2012)
2.) BASED ON OCTOBER 2017 GROUNDWATER DATA
3.) DASHED LINES REPRESENT INFERRED ISOCONCENTRATIONS CONTOURS
4.) ug/l = MICROGRAMS PER LITER

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

60 0 60
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

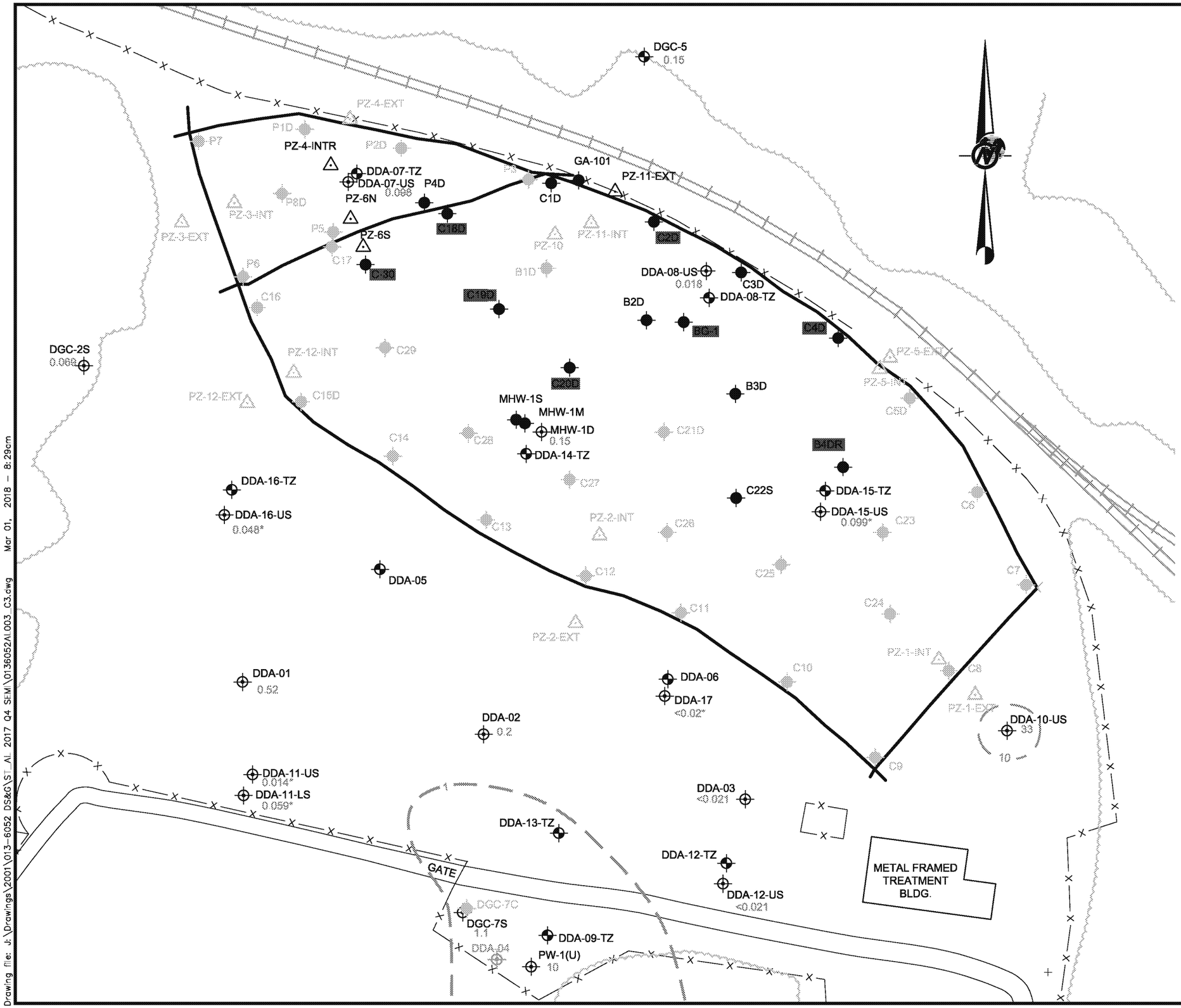
PROJECT
DELAWARE SAND AND GRAVEL
SUPERFUND SITE
NEW CASTLE, DELAWARE

TITLE
1,4-DIOXANE
DDA
COLUMBIA
OCTOBER 2017

Golder Associates
Manchester, New Hampshire

PROJECT No.			FILE No. 0136052AL002_C2
DESIGN	TGB	12/20/2017	SCALE AS SHOWN REV. 0
CADD	RWC	12/21/2017	
CHECK	CRT	01/08/2018	**FIGURE C-2**
REVIEW	TAM	02/28/2018	

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AL 2017 Q4 SEMI\0136052AL002_C2.dwg Mar 01, 2018 – 8:22am



LEGEND

–X——X——X——X	FENCELINE
	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS
	BCEE ISOCONCENTRATION CONTOURS (ug/l)
	BCEE ISOCONCENTRATION CONTOURS (INFERRED)
22	BCEE CONCENTRATIONS (ug/l)

NOTES

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2012)
2.) BASED ON OCTOBER 2017 GROUNDWATER DATA
3.) DASHED LINES REPRESENT INFERRED ISOCONCENTRATIONS CONTOURS
4.) BCEE = BIS(2-CHLOROETHYL)ETHER
5.) ug/l = MICROGRAMS PER LITER
6.) * = DATA FROM SPRING 2017 SAMPLING EVENT.

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

60 0 60
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

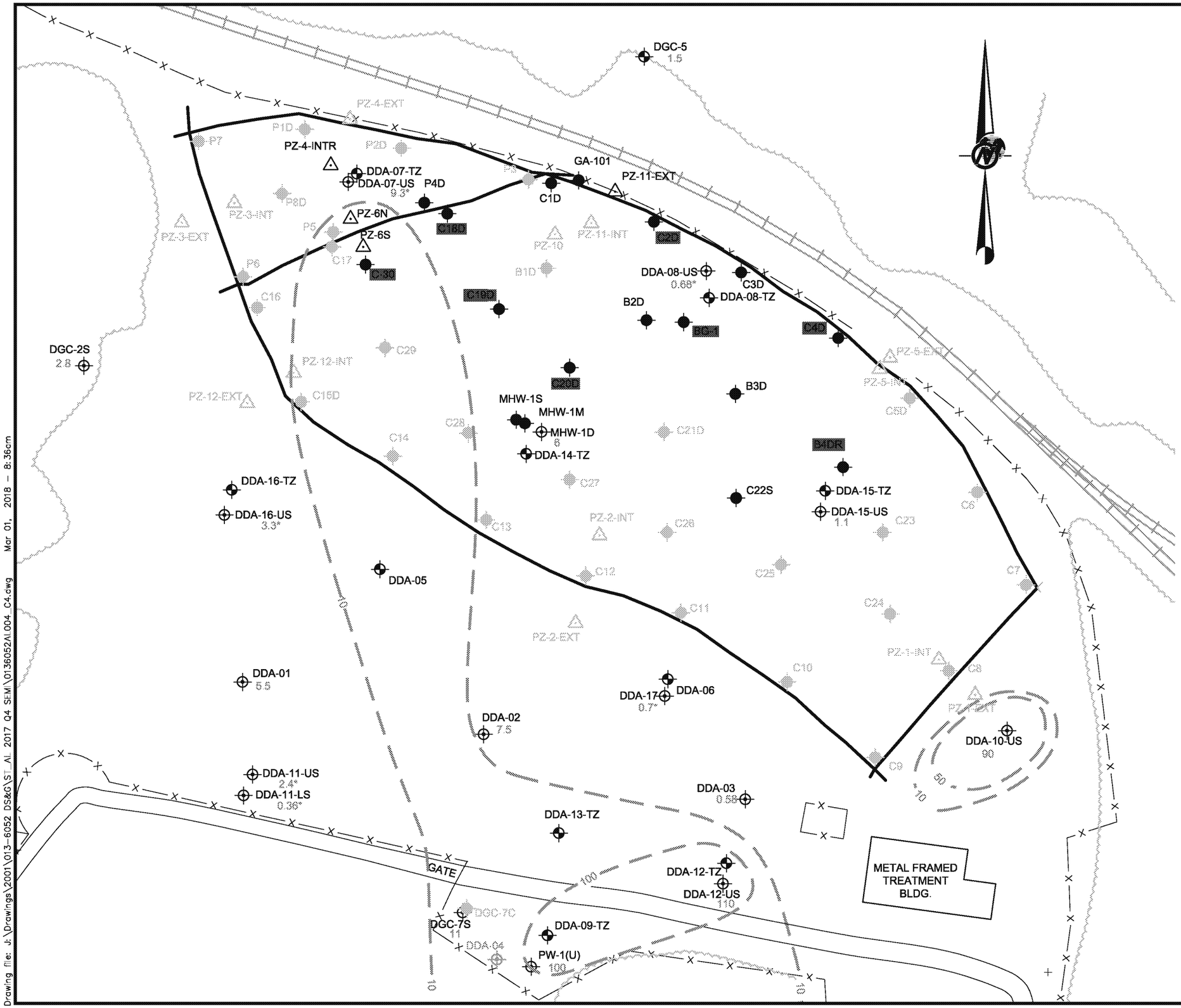
PROJECT
DELAWARE SAND AND GRAVEL
SUPERFUND SITE
NEW CASTLE, DELAWARE

TITLE
BCEE
DDA TO WELL PW-1(U)
UPA
OCTOBER 2017

Golder Associates
Manchester, New Hampshire

PROJECT No.		013-6052	FILE No.	0136052AL003_C3
DESIGN	TGB	12/20/2017	SCALE AS SHOWN	REV. 0
CADD	RWC	12/21/2017		
CHECK	CRT	01/08/2018	**FIGURE C-3**	
REVIEW	TAM	02/28/2018		

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AL 2017 Q4 SEMI\0136052AL003_C3.dwg Mar 01, 2018 – 8:29am



LEGEND

–X——X——X——X	FENCELINE
	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
C1D	COLUMBIA MONITORING WELLS
	1,4-DIOXANE ISOCONCENTRATION CONTOURS (ug/l)
	1,4-DIOXANE ISOCONCENTRATION CONTOURS (INFERRED)
22	1,4-DIOXANE CONCENTRATIONS (ug/l)

NOTES

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2012)
2.) BASED ON OCTOBER 2017 GROUNDWATER DATA
3.) DASHED LINES REPRESENT INFERRED ISOCONCENTRATIONS CONTOURS
4.) ug/l = MICROGRAMS PER LITER
5.) THE 10 ug/l 1,4-DIOXANE CONTOUR IS BASED ON PREVIOUS DETECTIONS ABOVE 10 ug/l AT DDA-07-US AND DDA-02
6.) * = DATA FROM APRIL 2017 SAMPLING EVENT.

REFERENCES

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

60 0 60
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
DELAWARE SAND AND GRAVEL
SUPERFUND SITE
NEW CASTLE, DELAWARE

TITLE
1,4-DIOXANE
DDA TO WELL PW-1(U)
UPA
OCTOBER 2017

Golder Associates
Manchester, New Hampshire

PROJECT No.		013-6052	FILE No.	0136052AL004_C4
DESIGN	TGB	12/20/2017	SCALE AS SHOWN	REV. 0
CADD	RWC	12/21/2017		
CHECK	CRT	01/08/2018	**FIGURE C-4**	
REVIEW	TAM	02/28/2018		

Drawing file: J:\Drawings\2001\013-6052 DS&G\ST_AL 2017 Q4 SEMI\0136052AL004_C4.dwg Mar 01, 2018 – 8:36am

APPENDIX D
SYSTEM PERFORMANCE DATA

Appendix D-1
LFExS Monthly and Semi-Annual Average Extraction Rates
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Dates	Monthly Extraction Volumes (Gallons)[1]	Monthly Average Extraction Rates (GPM)[1]	Semi-Annual Average Extraction Rates (GPM)	Notes
5/4/2009	NA	NA		LFExS temporary system began operation on May 4, 2009
5/31/2009	31724	0.82		
6/16/2009	46665	2.03		
7/31/2009	149386	2.31		
8/31/2009	151869	3.40		
9/30/2009	118197	2.74		
10/31/2009	132050	2.96		
5/4/2009 - 10/31/2009			2.43	
11/30/2009	105245	2.44		
12/31/2009	224591	5.03		LFExS shut down to construct the permanent system.
1/31/2010	0	0.00		
2/28/2010	59178	0.10		LFExS permanent system start-up. February 23, 2010
3/31/2010	213738	4.79		
4/30/2010	166205	3.85		
11/1/2009 - 4/30/2010			2.97	
5/31/2010	274434	5.98		
6/30/2010	257468	6.44		
7/31/2010	199135	4.55		
8/31/2010	299923	6.91		
9/30/2010	163175	3.78		
10/31/2010	86140	1.94		C-30 connected to LFExS.
5/1/2010 - 10/31/2010			4.86	
11/30/2010	168538	4.04		
12/31/2010	236487	5.31		
1/31/2011	275673	7.41		
2/28/2011	212994	6.08		
3/31/2011	176161	6.08		
4/30/2011	222325	9.46		
11/1/2010 - 4/30/2011			4.99	
5/31/2011	347392	9.12		
6/30/2011	312375	8.60		
7/31/2011	218072	7.50		
8/31/2011	274225	6.24		
9/30/2011	297546	6.15		
10/31/2011	291446	7.37		
5/1/2011 - 10/31/2011			6.61	
11/30/2011	354352	8.23		
12/31/2011	364276	8.24		
1/31/2012	392999	8.80		
2/28/2012	281290	6.74		
3/31/2012	279983	6.27		System off for maintenance and B-4DR connection: March 2-6, 2012
4/30/2012	320849	7.45		
11/1/2011 - 4/30/2012			7.65	
5/31/2012	379904	8.53		
6/30/2012	343060	7.96		
7/31/2012	299653	6.72		
8/31/2012	191801	4.30		System off for NCC sewer force main connection (August 23, 2012 - August 27, 2012)
9/30/2012	258732	5.96		System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
10/31/2012	323007	7.25		
5/1/2012 - 10/31/2012			6.82	
11/30/2012	344910	8.00		
12/31/2012	415726	9.32		C-20D connected to LFExS
1/31/2013	436650	10.10		
2/28/2013	388316	9.66		
3/31/2013	448131	10.06		
4/30/2013	364156	8.45		System off for quarterly maintenance (April 9-11, 2013) and running at reduced flow rate until discharge pump repair on April 15, 2013.
11/1/2012 - 4/30/2013			9.25	
5/31/2013	503926	11.32		
6/30/2013	417369	9.67		
7/31/2013	450647	10.10		
8/31/2013	302058	6.77		System off for maintenance (August 14-15, 2013) and tank cleaning (August 19, 2013).
9/30/2013	447631	10.58		
10/31/2013	470859	10.58		
5/1/2013 - 10/31/2013			9.84	
11/30/2013	403331	9.37		
12/31/2013	394852	9.17		
1/31/2014	382307	8.90		
2/28/2014	361010	9.18		
3/31/2014	397578	9.26		
4/30/2014	401701	9.65		

Appendix D-1
LFExS Monthly and Semi-Annual Average Extraction Rates
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Dates	Monthly Extraction Volumes (Gallons)[1]	Monthly Average Extraction Rates (GPM)[1]	Semi-Annual Average Extraction Rates (GPM)	Notes
11/1/2013 - 4/30/2014			8.98	
5/31/2014	425265	9.56		
6/30/2014	413594	9.60		
7/31/2014	431964	10.41		Addition of Redux to pumping wells C-2D and B-4DR and the LFExS discharge line via the balancing tank (July 10, 2014)
8/31/2014	415076	9.33		
9/30/2014	449710	10.45		
10/31/2014	503838	11.33		
5/1/2014 - 10/31/2014			10.08	
11/30/2014	280901	6.54		
12/31/2014	347712	8.09		
1/31/2015	437655	10.21		
2/28/2015	443212	11.44		
3/31/2015	476093	11.11		
4/30/2015	394217	9.45		
11/1/2014 - 4/30/2015			9.13	
5/31/2015	413658	9.45		
6/30/2015	424735	9.85		
7/31/2015	398855	8.97		
8/31/2015	429371	9.64		
9/30/2015	433035	10.08		
10/31/2015	386982	8.71		
5/1/2015 - 10/31/2015			9.38	
11/30/2015	378248	8.80		
12/31/2015	331836	7.47		
1/31/2016	282746	6.57		
2/28/2016	266160	6.68		New discharge pump
3/31/2016	317796	7.35		
4/30/2016	338733	8.16		
11/1/2015 - 4/30/2016			7.31	
5/31/2016	363227	8.17		
6/30/2016	418203	9.73		
7/31/2016	466965	10.48		
8/31/2016	464731	10.41		
9/30/2016	292499	6.78		
10/31/2016	276538	5.92		
5/1/2016 - 10/31/2016			8.61	
11/30/2016	225580	5.27		
12/31/2016	220075	4.98		
1/31/2017	236819	5.36		
2/28/2017	214236	5.39		
3/31/2017	414023	9.31		
4/30/2017	419863	9.75		
11/1/2016 - 4/30/2017			6.64	
5/31/2017	531609	11.97		
6/30/2017	469086	10.89		
7/31/2017	478549	10.72		
8/31/2017	429469	9.62		
9/30/2017	445807	10.32		
10/31/2017	405644	9.10		
5/1/2017 - 10/31/2017			10.42	
11/30/2017	379685	8.85		
12/31/2017	377895	8.79		

Notes:

(1) Monthly flow volumes and average rates based on totalizer volume spreadsheets provided by DS&G Remedial Trust
(2) LFExS = Low flow extraction system
(3) GPM = gallons per minute
(4) NCC = New Castle County

Prepared by: BPC
Checked by: LWL
Reviewed by: TAM

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
12/1/11 14:14	12/1/2011	14:14	24.80	43941008	518144	25.4	
12/8/11 14:12	12/8/2011	14:12	25.43	44177772	236764	23.5	
12/15/11 11:03	12/15/2011	11:03	24.11	44422508	244736	24.7	
12/22/11 10:04	12/22/2011	10:04	22.87	44658616	236108	23.6	
12/28/11 10:50	12/28/2011	10:50	21.46	44853416	194800	22.4	
1/5/12 13:50	1/5/2012	13:50	20.62	45101928	248512	21.2	
1/18/12 10:00	1/18/2012	10:00	18.73	45466288	164332	19.2	
1/19/12 10:08	1/19/2012	10:08	18.55	45493344	27056	18.7	
1/30/12 10:58	1/30/2012	10:58	16.92	45776524	283180	17.8	
2/1/12 10:19	2/1/2012	10:19	16.63	45824268	47744	16.8	Pump cleaned
2/13/12 14:10	2/13/2012	14:10	29.55	46229676	405408	23.2	
2/16/12 10:53	2/16/2012	10:53	29.35	46351520	121844	29.6	
2/22/12 14:33	2/22/2012	14:33	29.01	46609408	257888	29.1	
2/23/12 9:41	2/23/2012	9:41	29.10	46642656	33248	29.0	
3/12/12 11:50	3/12/2012	11:50	28.02	47381468	163088	27.8	
3/15/12 11:07	3/15/2012	11:07	27.95	47501308	119840	28.0	
3/22/12 10:41	3/22/2012	10:41	27.59	47781580	280272	27.9	
3/29/12 9:25	3/29/2012	9:25	25.88	48049700	268120	26.8	
4/4/12 10:00	4/4/2012	10:00	23.72	48266516	216816	25.0	
4/12/12 10:17	4/12/2012	10:17	20.72	48523840	257324	22.3	
4/19/12 10:05	4/19/2012	10:05	18.18	48719980	196140	19.5	
4/24/12 14:00	4/24/2012	14:00	16.28	48848272	128292	17.3	
4/26/12 10:45	4/26/2012	10:45	15.61	48891236	42964	16.0	
5/3/12 11:10	5/3/2012	11:10	13.25	49037620	146384	14.5	
5/7/12 11:55	5/7/2012	11:55	12.99	49115072	77452	13.3	
5/10/12 10:36	5/10/2012	10:36	11.92	49168192	53120	12.5	
5/16/12 13:45	5/16/2012	13:45	10.00	49265948	97756	11.1	
5/21/12 11:06	5/21/2012	11:06	8.57	49331484	65536	9.3	
5/24/12 10:19	5/24/2012	10:19	7.75	49366460	34976	8.2	
5/29/12 10:11	5/29/2012	10:11	6.54	49417796	51336	7.1	
5/31/12 11:20	5/31/2012	11:20	6.09	49436456	18660	6.3	
6/4/12 13:23	6/4/2012	13:23	5.27	49469944	33488	5.7	
6/7/12 11:58	6/7/2012	11:58	4.69	49491100	21156	5.0	Pump replaced
6/11/12 10:58	6/11/2012	10:58	4.09	49532636	41536	7.3	
6/21/12 11:45	6/21/2012	11:45	26.21	49800584	116724	26.3	
6/25/12 14:18	6/25/2012	14:18	25.83	49954900	154316	26.1	
6/28/12 15:15	6/28/2012	15:15	29.64	50079944	125044	28.6	
7/2/12 10:52	7/2/2012	10:52	26.80	50235632	155688	28.3	
7/5/12 10:13	7/5/2012	10:13	24.10	50344268	108636	25.4	
7/12/12 12:18	7/12/2012	12:18	21.00	50568548	224280	22.0	
7/16/12 14:29	7/16/2012	14:29	19.55	50688432	119884	20.4	
7/19/12 11:16	7/19/2012	11:16	18.32	50766740	78308	19.0	
7/23/12 10:10	7/23/2012	10:10	17.24	50868829	102089	17.9	
7/26/12 10:05	7/26/2012	10:05	16.89	50943120	74291	17.2	Pump cleaned
7/30/12 10:39	7/30/2012	10:39	23.20	51073720	130600	22.5	
8/2/12 9:33	8/2/2012	9:33	23.97	51175588	101868	23.9	
8/6/12 10:49	8/6/2012	10:49	24.77	51318468	142880	24.5	
8/8/12 10:21	8/8/2012	10:21	24.68	51389340	70872	24.8	
8/13/12 10:34	8/13/2012	10:34	25.02	51569176	179836	24.9	
8/16/12 11:12	8/16/2012	11:12	24.88	51677648	108472	24.9	
8/20/12 10:42	8/20/2012	10:42	24.02	51817704	140056	24.4	
8/22/12 15:25	8/22/2012	15:25	23.71	51893756	76052	24.0	
8/28/12 14:14	8/28/2012	14:14	25.73	51936988	43232	5.0	
8/30/12 14:30	8/30/2012	14:30	25.25	52011200	74212	25.6	
9/4/12 15:05	9/4/2012	15:05	24.00	52189544	178344	24.7	
9/6/12 11:46	9/6/2012	11:46	23.68	52253640	64096	23.9	
9/10/12 9:11	9/10/2012	9:11	21.82	30431	30431	21.8	
9/13/12 10:55	9/13/2012	10:55	21.78	101450	71020	16.1	
9/24/12 15:51	9/24/2012	15:51	21.62	449693	348243	21.6	
9/27/12 10:30	9/27/2012	10:30	21.66	536007	86314	21.6	
10/1/12 10:50	10/1/2012	10:50	21.25	660726	124719	21.6	
10/4/12 10:59	10/4/2012	10:59	21.18	753247	92521	21.4	
10/8/12 10:46	10/8/2012	10:46	20.06	873138	119891	20.9	
10/11/12 10:07	10/11/2012	10:07	19.94	959426	86289	20.2	
10/15/12 11:04	10/15/2012	11:04	19.37	1073659	114233	19.6	DS&G began well PW-1(U) OM&M
10/18/12 11:16	10/18/2012	11:16	18.78	1156491	82832	19.1	
10/22/12 11:45	10/22/2012	11:45	17.71	1262836	106345	18.4	
10/25/12 13:56	10/25/2012	13:56	16.93	1341029	78193	17.6	
11/5/12 10:16	11/5/2012	10:16	16.72	1570723	100468	17.3	
11/8/12 11:32	11/8/2012	11:32	15.76	1641843	71120	16.2	
11/12/12 13:15	11/12/2012	13:15	15.00	1731802	89959	15.3	
11/15/12 14:25	11/15/2012	14:25	14.09	1795415	63613	14.5	
11/29/12 15:45	11/29/2012	15:45	21.70	2005974	5957	1.1	Pump cleaned
11/30/12 10:42	11/30/2012	10:42	21.80	2030748	24774	21.8	
12/3/12 14:35	12/3/2012	14:35	21.12	2128688	97940	21.5	
12/5/12 11:16	12/5/2012	11:16	21.21	2184820	56132	20.9	
12/6/12 8:56	12/6/2012	8:56	21.01	2212205	27385	21.1	
12/10/12 11:06	12/10/2012	11:06	20.27	2334399	122194	20.7	
12/13/12 10:20	12/13/2012	10:20	20.11	2419496	85097	19.9	
12/17/12 10:10	12/17/2012	10:10	19.29	2532359	112863	19.6	
12/18/12 13:18	12/18/2012	13:18	18.56	2562919	30560	18.8	
12/20/12 10:00	12/20/2012	10:00	18.01	2612129	49210	18.3	
12/24/12 11:20	12/24/2012	11:20	17.10	2714640	102511	17.6	
12/27/12 10:45	12/27/2012	10:45	16.46	2786666	72026	16.8	
12/31/12 11:12	12/31/2012	11:12	16.04	2879942	93276	16.1	
1/3/13 12:01	1/3/2013	12:01	15.23	2947670	67728	15.5	
1/7/13 11:19	1/7/2013	11:19	14.61	3033103	85433	14.9	
1/8/13 8:30	1/8/2013	8:30	N/A	3051304	18201	14.3	Chemical scrub of well screen, vacuumed debris from base, surge block, redevelopment, and cleaned pump
1/15/13 10:00	1/15/2013	10:00	27.21	3176009	34376	23.5	
1/17/13 9:35	1/17/2013	9:35	28.40	3257062	81053	28.4	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
1/22/13 9:34	1/22/2013	9:34	30.25	3467102	210040	29.2	
1/24/13 9:24	1/24/2013	9:24	30.34	3553534	86432	30.1	
1/31/13 15:15	1/31/2013	15:15	31.01	3874812	321278	30.8	
2/4/13 10:35	2/4/2013	10:35	30.51	4043808	168996	30.8	
2/5/13 9:27	2/5/2013	9:27	30.71	4085899	42091	30.7	
2/6/13 9:12	2/6/2013	9:12	30.54	4129698	43799	30.7	
2/7/13 11:09	2/7/2013	11:09	30.88	4177215	47517	30.5	
2/11/13 10:18	2/11/2013	10:18	29.12	4348943	171728	30.1	
2/12/13 10:50	2/12/2013	10:50	29.24	4392166	43223	29.4	
2/13/13 10:03	2/13/2013	10:03	28.87	4432776	40610	29.2	
2/14/13 10:43	2/14/2013	10:43	28.73	4475344	42568	28.8	
2/18/13 10:40	2/18/2013	10:40	27.14	4635839	160495	27.9	
2/19/13 10:00	2/19/2013	10:00	26.85	4673724	37885	27.1	
2/21/13 11:56	2/21/2013	11:56	26.01	4753407	79683	26.6	
2/25/13 11:30	2/25/2013	11:30	24.70	4899380	145973	25.5	
2/26/13 13:27	2/26/2013	13:27	29.40	4931168	31788	20.4	Pump cleaned
2/27/13 14:04	2/27/2013	14:04	30.05	4974441	43273	29.3	
2/28/13 14:48	2/28/2013	14:48	29.87	5018925	44484	30.0	
3/4/13 11:38	3/4/2013	11:38	28.32	5181224	162299	29.1	
3/5/13 10:47	3/5/2013	10:47	27.92	5220224	39000	28.1	
3/7/13 10:12	3/7/2013	10:12	27.60	5298671	78447	27.6	
3/11/13 10:54	3/11/2013	10:54	25.60	5450464	151793	26.2	
3/12/13 10:18	3/12/2013	10:18	25.56	5486345	35881	25.6	
3/14/13 9:14	3/14/2013	9:14	25.08	5557381	71036	25.2	Buildup in discharge line to sewer jetted out
3/18/13 9:16	3/18/2013	9:16	40.42	5783225	225844	39.2	
3/20/13 11:36	3/20/2013	11:36	40.18	5903470	120245	39.8	
3/21/13 11:10	3/21/2013	11:10	39.49	5959114	55644	39.4	
3/25/13 9:28	3/25/2013	9:28	39.08	6178809	219695	38.8	
3/27/13 10:45	3/27/2013	10:45	38.05	6291760	112951	38.2	
3/28/13 11:24	3/28/2013	11:24	37.76	6347526	55766	37.7	
4/2/13 11:22	4/2/2013	11:22	36.61	6613416	265890	36.9	
4/4/13 10:51	4/4/2013	10:51	36.34	6716499	103083	36.2	
4/8/13 11:54	4/8/2013	11:54	35.83	6925704	209205	35.9	
4/9/13 13:35	4/9/2013	13:35	35.92	6980797	55093	35.8	
4/11/13 13:24	4/11/2013	13:24	37.71	7083932	103135	35.9	
4/15/13 9:12	4/15/2013	9:12	36.95	7287186	203254	36.9	
4/16/13 8:46	4/16/2013	8:46	37.70	7336665	49479	35.0	
4/17/13 10:03	4/17/2013	10:03	0.00	7393803	57138	37.7	Pump off for aquifer testing
5/22/13 12:20	5/22/2013	12:20	47.00	7634146	240343	4.8	Pump off for aquifer testing, pump cleaned and check valve replaced
5/23/13 14:49	5/23/2013	14:49	40.98	7700402	66256	41.7	
5/24/13 9:10	5/24/2013	9:10	40.40	7745302	44900	40.8	
5/28/13 10:23	5/28/2013	10:23	38.80	7976031	230729	39.6	
5/29/13 9:56	5/29/2013	9:56	38.30	8030610	54579	38.6	
5/30/13 12:55	5/30/2013	12:55	38.10	8092659	62049	38.3	
6/3/13 9:41	6/3/2013	9:41	37.08	8302281	209622	37.7	
6/4/13 15:00	6/4/2013	15:00	36.68	8367111	64830	36.9	
6/5/13 10:19	6/5/2013	10:19	36.58	8409780	42669	36.8	
6/6/13 10:38	6/6/2013	10:38	36.75	8463462	53682	36.8	
6/10/13 9:36	6/10/2013	9:36	36.55	8673312	209850	36.8	
6/13/13 9:03	6/13/2013	9:03	35.67	8828999	155687	36.3	
6/17/13 10:02	6/17/2013	10:02	33.20	9029387	200388	34.4	
6/18/13 11:27	6/18/2013	11:27	32.86	9079726	50339	33.0	
6/19/13 10:35	6/19/2013	10:35	32.51	9125080	45354	32.7	
6/20/13 15:45	6/20/2013	15:45	31.83	9181524	56444	32.3	
6/24/13 13:48	6/24/2013	13:48	29.85	9356358	174834	31.0	
6/25/13 10:22	6/25/2013	10:22	29.66	9393034	36676	29.7	
6/27/13 13:43	6/27/2013	13:43	28.21	9481880	88846	28.8	
7/1/13 11:09	7/1/2013	11:09	26.16	9634846	152966	27.3	
7/2/13 8:46	7/2/2013	8:46	25.84	9668490	33644	25.9	Pump cleaned
7/8/13 9:00	7/8/2013	9:00	33.59	9957520	247080	34.6	
7/16/13 10:44	7/16/2013	10:44	34.25	10350580	53966	34.6	
7/17/13 9:26	7/17/2013	9:26	34.29	10397129	46549	34.2	
7/18/13 10:18	7/18/2013	10:18	33.95	10447140	50011	33.5	
7/23/13 9:32	7/23/2013	9:32	31.77	10677757	230617	32.2	
7/24/13 11:44	7/24/2013	11:44	31.13	10727194	49437	31.4	
7/25/13 12:07	7/25/2013	12:07	31.24	10772560	45366	31.0	
7/29/13 11:07	7/29/2013	11:07	28.97	10943931	171371	30.1	
7/30/13 15:49	7/30/2013	15:49	28.25	10993221	49290	28.6	
7/31/13 10:06	7/31/2013	10:06	28.23	11024181	30960	28.2	
8/1/13 12:23	8/1/2013	12:23	27.42	11068483	44302	28.1	
8/5/13 9:03	8/5/2013	9:03	26.42	11218719	150236	27.0	
8/6/13 13:26	8/6/2013	13:26	33.01	11259475	40756	23.9	Pump cleaned
8/7/13 9:25	8/7/2013	9:25	33.11	11300637	41162	34.3	
8/8/13 11:08	8/8/2013	11:08	32.53	11351202	50565	32.8	
8/12/13 11:07	8/12/2013	11:07	31.21	11533093	181891	31.6	
8/13/13 11:26	8/13/2013	11:26	30.61	11578161	45068	30.9	
8/14/13 8:54	8/14/2013	8:54	30.53	11617528	39367	30.6	
8/15/13 9:06	8/15/2013	9:06	29.88	11661412	43884	30.2	
8/16/13 14:00	8/16/2013	14:00	41.61	11669814	8402	4.8	Line jetted and cleaned and well screen cleaned
8/19/13 8:31	8/19/2013	8:31	40.25	11832183	162369	40.7	
8/20/13 8:45	8/20/2013	8:45	40.00	11890747	58564	40.3	
8/26/13 11:25	8/26/2013	11:25	38.20	12232119	341372	38.8	
8/27/13 10:43	8/27/2013	10:43	38.99	12284302	52183	37.3	
8/28/13 10:09	8/28/2013	10:09	38.43	12338475	54173	38.5	
8/29/13 9:50	8/29/2013	9:50	38.01	12392544	54069	38.0	
9/3/13 11:12	9/3/2013	11:12	35.88	12661045	268501	36.9	
9/4/13 10:01	9/4/2013	10:01	35.12	12709679	48634	35.5	
9/5/13 15:10	9/5/2013	15:10	34.56	12770850	61171	35.0	
9/9/13 10:33	9/9/2013	10:33	32.63	12955225	184375	33.6	
9/10/13 14:45	9/10/2013	14:45	31.99	13009853	54628	32.3	
9/11/13 10:03	9/11/2013	10:03	31.68	13046597	36744	31.7	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
9/12/13 12:23	9/12/2013	12:23	31.45	13096776	50179	31.8	
9/16/13 11:05	9/16/2013	11:05	30.43	13270999	174223	30.7	
9/17/13 14:38	9/17/2013	14:38	29.48	13320242	49243	29.8	
9/19/13 9:06	9/19/2013	9:06	28.87	13394917	74675	29.3	
9/19/13 14:15	9/19/2013	14:15	32.57	13395545	628	2.0	Pump and pipe cleaned
9/23/13 8:21	9/23/2013	8:21	31.79	13571261	175716	32.5	
9/24/13 11:08	9/24/2013	11:08	31.66	13621860	50599	31.5	
9/25/13 13:00	9/25/2013	13:00	31.35	13670142	48282	31.1	
9/26/2013	9/26/2013	N/A	N/A	N/A	N/A	N/A	The power to the well PW-1(U) pump and totalizer were interrupted
10/3/2013	10/3/2013	N/A	N/A	N/A	N/A	N/A	Redux 620 application began
10/17/2013	10/17/2013	N/A	N/A	N/A	N/A	N/A	The totalizer was reset and the equipment was restarted
10/21/13 9:57	10/21/2013	9:57	40.39	231527	231527	41.3	
10/22/13 12:35	10/22/2013	12:35	40.87	296845	65318	40.9	
10/23/13 9:55	10/23/2013	9:55	40.83	349169	52324	40.9	
10/24/13 9:23	10/24/2013	9:23	40.70	406795	57626	40.9	
10/28/13 9:58	10/28/2013	9:58	40.98	644233	237438	41.0	
10/29/13 10:57	10/29/2013	10:57	40.90	705619	61386	41.0	
10/30/13 14:50	10/30/2013	14:50	40.94	774271	68652	41.0	
11/5/13 9:44	11/5/2013	9:44	40.95	1118489	56509	40.9	
11/11/13 10:58	11/11/2013	10:58	40.78	1474968	356479	40.9	
11/12/13 10:25	11/12/2013	10:25	40.74	1532332	57364	40.8	
11/13/13 10:57	11/13/2013	10:57	40.65	1592450	60118	40.8	
11/14/13 10:33	11/14/2013	10:33	40.87	1650175	57725	40.8	
11/18/13 11:03	11/18/2013	11:03	41.35	1885748	235573	40.7	
11/19/13 10:18	11/19/2013	10:18	40.16	1942334	56586	40.6	
11/20/13 10:51	11/20/2013	10:51	40.34	2002025	59691	40.5	
11/21/13 11:03	11/21/2013	11:03	40.20	2060772	58747	40.5	
11/25/13 11:05	11/25/2013	11:05	38.90	2290468	229696	39.9	
12/2/13 10:39	12/2/2013	10:39	39.05	2681887	391419	38.9	
12/3/13 13:52	12/3/2013	13:52	38.96	2745430	63543	38.9	
12/4/13 13:34	12/4/2013	13:34	38.80	2800674	55244	38.8	
12/5/13 15:30	12/5/2013	15:30	38.83	2867833	67159	43.2	
12/10/13 9:44	12/10/2013	9:44	38.56	3125810	257977	37.6	
12/12/13 9:58	12/12/2013	9:58 AM	38.63	3237624	111814	38.6	
12/16/13 11:08	12/16/2013	11:08 AM	39.87	3459456	221832	38.1	
12/17/13 11:56	12/17/2013	11:56 AM	37.55	3518131	58675	39.4	
12/18/13 10:07	12/18/2013	10:07 AM	39.89	3569188	51057	38.4	
12/19/13 14:50	12/19/2013	2:50 PM	37.74	3636376	67188	39.0	
12/23/13 11:37	12/23/2013	11:37 AM	38.10	3850296	213920	38.4	
12/27/13 12:52	12/27/2013	12:52 PM	38.11	4076687	226391	38.8	
12/30/13 13:55	12/30/2013	1:55 PM	39.95	4246201	169514	38.7	
12/31/13 10:39	12/31/2013	10:39 AM	40.11	4294399	48198	38.7	
1/2/14 10:29	1/2/2014	10:29 AM	38.27	4405620	111221	38.8	
1/6/14 10:02	1/6/2014	10:02 AM	38.45	4627777	222157	38.8	
1/7/14 11:27	1/7/2014	11:27 AM	38.51	4687029	59252	38.9	
1/8/14 9:37	1/8/2014	9:37 AM	38.54	4738802	51773	38.9	
1/9/14 10:27	1/9/2014	10:27 AM	38.55	4796733	57931	38.9	
1/13/14 10:29	1/13/2014	10:29 AM	38.57	5021113	224380	38.9	
1/14/14 11:58	1/14/2014	11:58 AM	38.66	5080694	59581	39.0	
1/15/14 9:18	1/15/2014	9:18 AM	38.61	5130754	50060	39.1	
1/16/14 9:49	1/16/2014	9:49 AM	38.70	5188199	57445	39.1	
1/20/14 12:04	1/20/2014	12:04 PM	38.67	5417964	229765	39.0	
1/21/14 9:30	1/21/2014	9:30 AM	40.37	5468126	50162	39.0	
1/23/14 11:28	1/23/2014	11:28 AM	38.81	5584450	116324	38.8	
1/27/14 11:00	1/27/2014	11:00 AM	38.82	5806907	222457	38.8	
1/28/14 11:56	1/28/2014	11:56 AM	38.75	5864968	58061	38.8	
1/29/14 9:39	1/29/2014	9:39 AM	38.92	5915567	50599	38.8	
1/30/14 11:37	1/30/2014	11:37 AM	38.78	5976642	61075	39.2	
2/3/14 10:33	2/3/2014	10:33 AM	39.54	6198556	221914	39.0	
2/4/14 9:52	2/4/2014	9:52 AM	40.59	6253263	54707	39.1	
2/5/14 9:15	2/5/2014	9:15 AM	40.10	6308888	55625	39.6	
2/6/14 12:49	2/6/2014	12:49 PM	38.26	6373982	65094	39.4	
2/10/14 10:50	2/10/2014	10:50 AM	40.28	6592399	218417	38.7	
2/11/14 9:15	2/11/2014	9:15 AM	40.19	6644565	52166	38.8	
2/12/14 10:30	2/12/2014	10:30 AM	40.15	6703349	58784	38.8	
2/17/14 11:53	2/17/2014	11:53 AM	38.22	6983823	280474	38.5	
2/18/14 11:30	2/18/2014	11:30 AM	39.61	7037971	54148	38.2	
2/20/14 10:40	2/20/2014	10:40 AM	42.05	7155784	117813	41.6	
2/24/14 9:16	2/24/2014	9:16 AM	37.86	7392670	236886	41.7	
2/25/14 15:09	2/25/2014	3:09 PM	39.94	7459970	67300	37.5	
2/26/14 14:58	2/26/2014	2:58 PM	37.83	7514576	54606	38.2	
2/27/14 13:50	2/27/2014	1:50 PM	37.99	7567221	52645	38.4	
3/4/14 10:56	3/4/2014	10:56 AM	38.05	7834047	266826	38.0	
3/5/14 9:15	3/5/2014	9:15 AM	37.94	7884924	50877	38.0	
3/6/14 10:06	3/6/2014	10:06 AM	39.66	7941640	56716	38.0	
3/10/14 10:28	3/10/2014	10:28 AM	39.50	8159329	217689	37.6	
3/11/14 13:10	3/11/2014	1:10 PM	40.01	8213332	54003	33.7	
3/12/14 10:33	3/12/2014	10:33 AM	40.04	8262043	48711	38.0	
3/13/14 11:55	3/13/2014	11:55 AM	40.05	8320124	58081	38.2	
3/19/14 8:40	3/19/2014	8:40 AM	37.54	8640577	320453	37.9	
3/20/14 13:17	3/20/2014	1:17 PM	40.21	8700552	59975	34.9	
3/24/14 10:19	3/24/2014	10:19 AM	39.10	8923381	222829	39.9	
3/25/14 12:38	3/25/2014	12:38 PM	39.52	8986129	62748	39.7	
3/26/14 11:20	3/26/2014	11:20 AM	39.64	9040096	53967	39.6	
3/27/14 10:41	3/27/2014	10:41 AM	39.66	9096017	55921	39.9	
3/31/14 10:40	3/31/2014	10:40 AM	38.11	9324439	228422	39.7	
4/1/14 15:20	4/1/2014	3:20 PM	39.28	9392266	67827	39.4	
4/2/14 10:48	4/2/2014	10:48 AM	40.18	9439024	46758	40.0	
4/3/14 14:17	4/3/2014	2:17 PM	39.01	9504550	65526	39.7	
4/7/14 10:48	4/7/2014	10:48 AM	39.12	9723859	219309	39.5	
4/8/14 11:43	4/8/2014	11:43 AM	39.22	9782930	59071	39.5	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
4/9/14 11:05	4/9/2014	11:05 AM	38.54	9838222	55292	39.4	
4/10/14 9:51	4/10/2014	9:51 AM	39.04	9892063	53841	39.4	
4/14/14 12:29	4/14/2014	12:29 PM	39.10	10124712	232649	39.3	
4/15/14 11:52	4/15/2014	11:52 AM	39.01	10179859	55147	39.3	
4/16/14 9:23	4/16/2014	9:23 AM	38.54	10230650	50791	39.3	
4/17/14 9:52	4/17/2014	9:52 AM	38.95	10288289	57639	39.2	
4/22/14 10:40	4/22/2014	10:40 AM	40.16	10572132	283843	39.2	
4/23/14 10:26	4/23/2014	10:26 AM	38.88	10627997	55865	39.2	
4/24/14 10:04	4/24/2014	10:04 AM	38.66	10683481	55484	39.1	
4/28/14 10:12	4/28/2014	10:12 AM	38.20	10907768	224287	38.9	
4/29/14 11:52	4/29/2014	11:52 AM	38.77	10967574	59806	38.8	
4/30/14 10:33	4/30/2014	10:33 AM	38.36	11020130	52556	38.6	
5/1/14 12:16	5/1/2014	12:16 PM	38.71	11080264	60134	39.0	
5/5/14 10:46	5/5/2014	10:46 AM	38.58	11300269	220005	38.8	
5/6/14 9:14	5/6/2014	9:14 AM	39.77	11352657	52388	38.9	
5/7/14 10:07	5/7/2014	10:07 AM	38.61	11410252	57595	38.6	
5/8/14 10:07	5/8/2014	10:07 AM	38.69	11466157	55905	38.8	
5/12/14 11:05	5/12/2014	11:05 AM	38.21	11690468	224311	38.6	
5/13/14 15:54	5/13/2014	3:54 PM	38.17	11756906	66438	38.4	
5/14/14 11:20	5/14/2014	11:20 AM	39.60	11801790	44884	38.5	
5/15/14 14:53	5/15/2014	2:53 PM	39.48	11865227	63437	38.4	
5/19/14 14:10	5/19/2014	2:10 PM	38.20	12084782	219555	38.4	
5/20/14 10:25	5/20/2014	10:25 AM	39.30	12131867	47085	38.8	
5/21/14 14:12	5/21/2014	2:12 PM	40.21	12195010	63143	37.9	
5/22/14 13:14	5/22/2014	1:14 PM	38.66	12249297	54287	39.3	
5/27/14 11:44	5/27/2014	11:44 AM	38.61	12525261	275964	38.8	
5/28/14 10:55	5/28/2014	10:55 AM	38.57	12579307	54046	38.9	
5/29/14 12:21	5/29/2014	12:21 PM	38.41	12638102	58795	38.5	
6/2/14 11:59	6/2/2014	11:59 AM	39.47	12859832	221730	38.6	
6/3/14 11:06	6/3/2014	11:06 AM	38.04	12913121	53289	38.4	
6/4/14 9:20	6/4/2014	9:20 AM	38.42	12964693	51572	38.7	
6/5/14 10:35	6/5/2014	10:35 AM	38.28	13022755	58062	38.3	
6/9/14 10:26	6/9/2014	10:26 AM	38.11	13243957	221202	38.5	
6/10/14 14:14	6/10/2014	2:14 PM	39.35	13307735	63778	38.2	
6/12/14 10:02	6/12/2014	10:02 AM	38.04	13408815	101080	38.5	
6/17/14 10:56	6/17/2014	10:56 AM	37.96	13686403	277588	38.3	
6/18/14 9:14	6/18/2014	9:14 AM	37.90	13737620	51217	38.3	
6/19/14 10:13	6/19/2014	10:13 AM	37.95	13794915	57295	38.2	
6/23/14 9:57	6/23/2014	9:57 AM	37.97	14015128	220213	38.3	
6/24/14 10:17	6/24/2014	10:17 AM	39.20	14070741	55613	38.1	
6/25/14 11:40	6/25/2014	11:40 AM	39.15	14128608	57867	38.0	
6/26/14 9:32	6/26/2014	9:32 AM	37.94	14178630	50022	38.1	
6/30/14 10:18	6/30/2014	10:18 AM	37.94	14400204	221574	38.2	
7/1/14 10:35	7/1/2014	10:35 AM	37.46	14455552	55348	38.0	
7/2/14 9:08	7/2/2014	9:08 AM	37.61	14506927	51375	38.0	
7/3/14 14:08	7/3/2014	2:08 PM	37.48	14572799	65872	37.9	
7/7/14 14:47	7/7/2014	2:47 PM	37.44	14793344	220545	38.0	
7/8/14 9:17	7/8/2014	9:17 AM	39.11	14835540	42196	38.0	
7/9/14 9:00	7/9/2014	9:00 AM	39.17	14889356	53816	37.8	
7/10/14 8:47	7/10/2014	8:47 AM	37.66	14943220	53864	37.7	
7/14/14 9:24	7/14/2014	9:24 AM	39.31	15163430	220210	38.0	
7/15/14 10:18	7/15/2014	10:18 AM	39.15	15220037	56607	37.9	
7/16/14 9:03	7/16/2014	9:03 AM	37.46	15271668	51631	37.8	
7/17/14 9:40	7/17/2014	9:40 AM	37.57	15327733	56065	38.0	
7/24/14 9:04	7/24/2014	9:04 AM	37.73	15707438	379705	37.8	
7/28/14 10:44	7/28/2014	10:44 AM	37.88	15929110	221672	37.8	
7/29/14 10:02	7/29/2014	10:02 AM	37.64	15982234	53124	38.0	
7/30/14 9:21	7/30/2014	9:21 AM	37.57	16034882	52648	37.6	
7/31/14 10:38	7/31/2014	10:38 AM	37.66	16092427	57545	37.9	
8/4/14 11:07	8/4/2014	11:07 AM	37.75	16312057	219630	37.9	
8/5/14 8:54	8/5/2014	8:54 AM	37.85	16361549	49492	37.9	
8/6/14 8:30	8/6/2014	8:30 AM	N/A	16416387	54838	38.7	
8/7/14 9:57	8/7/2014	9:57 AM	40.50	16424879	8492	5.6	Pump and pipe cleaned
8/11/14 9:11	8/11/2014	9:11 AM	40.23	16648389	223510	39.1	
8/12/14 9:40	8/12/2014	9:40 AM	37.59	16704361	55972	38.1	
8/13/14 10:46	8/13/2014	10:46 AM	37.43	16761184	56823	37.7	
8/14/14 10:12	8/14/2014	10:12 AM	37.24	16813998	52814	37.6	
8/18/14 9:32	8/18/2014	9:32 AM	38.29	17026754	212756	37.2	
8/27/14 13:05	8/27/2014	1:05 PM	36.95	17514018	487264	37.0	
8/28/14 11:45	8/28/2014	11:45 AM	36.82	17564135	50117	36.9	
9/2/14 9:53	9/2/2014	9:53 AM	36.93	17825314	261179	36.8	
9/3/14 10:31	9/3/2014	10:31 AM	37.02	17880058	54744	37.0	
9/4/14 9:27	9/4/2014	9:27 AM	38.01	17931488	51430	37.4	
9/8/14 10:44	9/8/2014	10:44 AM	36.37	18146297	214809	36.8	
9/9/14 9:35	9/9/2014	9:35 AM	36.57	18196651	50354	36.7	
9/10/14 9:10	9/10/2014	9:10 AM	36.36	18248250	51599	36.5	
9/11/14 10:45	9/11/2014	10:45 AM	36.21	18304064	55814	36.4	
9/15/14 10:19	9/15/2014	10:19 AM	36.08	18512492	208428	36.3	
9/16/14 9:45	9/16/2014	9:45 AM	35.93	18563477	50985	36.3	
9/17/14 11:40	9/17/2014	11:40 AM	36.06	18619926	56449	36.3	
9/18/14 10:56	9/18/2014	10:56 AM	36.13	18670684	50758	36.4	
9/22/14 10:27	9/22/2014	10:27 AM	35.90	18876168	205484	35.9	
9/23/14 9:48	9/23/2014	9:48 AM	35.77	18926129	49961	35.7	
9/24/14 9:45	9/24/2014	9:45 AM	35.79	18977409	51280	35.7	
9/25/14 14:47	9/25/2014	2:47 PM	35.88	19039622	62213	35.7	
9/29/14 9:44	9/29/2014	9:44 AM	36.11	19235091	195469	35.8	
9/30/14 9:42	9/30/2014	9:42 AM	37.31	19286181	51090	35.5	
10/1/14 10:36	10/1/2014	10:36 AM	37.43	19339914	53733	36.0	
10/2/14 15:32	10/2/2014	3:32 PM	35.08	19402131	62217	35.8	
10/6/14 9:49	10/6/2014	9:49 AM	35.68	19595340	193209	35.7	
10/7/14 10:27	10/7/2014	10:27 AM	35.67	19648015	52675	35.6	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
10/8/14 11:38	10/8/2014	11:38 AM	35.61	19701790	53775	35.6	
10/9/14 10:41	10/9/2014	10:41 AM	35.48	19750717	48927	35.4	
10/13/14 9:50	10/13/2014	9:50 AM	35.40	19953165	202448	35.5	
10/14/14 14:51	10/14/2014	2:51 PM	35.61	20014687	61522	35.3	
10/15/14 9:54	10/15/2014	9:54 AM	35.24	20055140	40453	35.4	
10/16/14 15:04	10/16/2014	3:04 PM	35.40	20116684	61544	35.2	
10/20/14 11:13	10/20/2014	11:13 AM	35.53	20311858	195174	35.3	
10/21/14 10:40	10/21/2014	10:40 AM	35.35	20361490	49632	35.3	
10/22/14 10:01	10/22/2014	10:01 AM	35.31	20410995	49505	35.3	
10/23/14 10:51	10/23/2014	10:51 AM	35.41	20463689	52694	35.4	
10/27/14 10:21	10/27/2014	10:21 AM	35.41	20666408	202719	35.4	
10/28/14 8:57	10/28/2014	8:57 AM	35.40	20714396	47988	35.4	
10/29/14 11:14	10/29/2014	11:14 AM	36.75	20770182	55786	35.4	
10/30/14 11:00	10/30/2014	11:00 AM	36.76	20820861	50679	35.5	
11/3/14 11:27	11/3/2014	11:27 AM	34.77	21026079	205218	35.5	
11/4/14 10:55	11/4/2014	10:55 AM	36.69	21075586	49507	35.2	
11/5/14 9:34	11/5/2014	9:34 AM	36.71	21125454	49868	36.7	
11/6/14 11:42	11/6/2014	11:42 AM	36.73	21180745	55291	35.3	
11/10/14 11:22	11/10/2014	11:22 AM	34.69	21381634	200889	35.0	
11/11/14 10:05	11/11/2014	10:05 AM	36.55	21429468	47834	35.1	
11/12/14 9:32	11/12/2014	9:32 AM	34.68	21478765	49297	35.0	
11/18/14 10:40	11/18/2014	10:40 AM	37.11	21773543	294778	33.9	
11/19/14 10:28	11/19/2014	10:28 AM	36.98	21824032	50489	35.4	
11/20/14 10:38	11/20/2014	10:38 AM	34.29	21875802	51770	35.7	
11/24/14 9:47	11/24/2014	9:47 AM	34.10	22078430	202628	35.5	
11/25/14 11:10	11/25/2014	11:10 AM	34.34	22132781	54351	35.7	
11/26/14 9:47	11/26/2014	9:47 AM	34.46	22181431	48650	35.9	
11/28/14 10:51	11/28/2014	10:51 AM	38.01	22287367	105936	36.0	
12/1/14 10:20	12/1/2014	10:20 AM	37.85	22441361	153994	35.9	
12/2/14 10:55	12/2/2014	10:55 AM	34.29	22494226	52865	35.8	
12/3/14 14:42	12/3/2014	2:42 PM	34.49	22553451	59225	35.5	
12/4/14 15:19	12/4/2014	3:19 PM	34.40	22606008	52557	35.6	
12/8/14 14:27	12/8/2014	2:27 PM	37.20	22808869	202861	35.5	
12/9/14 10:08	12/9/2014	10:08 AM	34.50	22851275	42406	35.9	
12/11/14 9:18	12/11/2014	9:18 AM	34.38	22952204	100929	35.7	
12/12/14 10:16	12/12/2014	10:16 AM	34.69	23005957	53753	35.9	
12/15/14 10:30	12/15/2014	10:30 AM	34.48	23160175	154218	35.6	
12/16/14 12:52	12/16/2014	12:52 PM	35.20	23213345	53170	33.6	
12/17/14 9:13	12/17/2014	9:13 AM	34.78	23256480	43135	35.3	
12/18/14 14:33	12/18/2014	2:33 PM	34.17	23318933	62453	35.5	
12/22/14 11:30	12/22/2014	11:30 AM	34.15	23515187	196254	35.2	
12/23/14 10:41	12/23/2014	10:41 AM	36.63	23563658	48471	34.8	
12/24/14 14:45	12/24/2014	2:45 PM	34.55	23622854	59196	35.2	
12/29/14 11:27	12/29/2014	11:27 AM	34.04	23868972	246118	35.1	
12/30/14 10:43	12/30/2014	10:43 AM	34.46	23917705	48733	34.9	
12/31/14 9:39	12/31/2014	9:39 AM	37.45	23966364	48659	35.4	
1/5/15 10:50	1/5/2015	10:50 AM	37.24	24226491	260127	35.8	
1/6/15 10:49	1/6/2015	10:49 AM	37.37	24278038	51547	35.8	
1/7/15 10:36	1/7/2015	10:36 AM	34.88	24328743	50705	35.5	
1/8/15 11:33	1/8/2015	11:33 AM	34.74	24381581	52838	35.3	
1/12/15 9:30	1/12/2015	9:30 AM	34.66	24580270	198689	35.2	
1/16/15 15:30	1/16/2015	3:30 PM	34.56	24794901	214631	35.1	
1/19/15 10:50	1/19/2015	10:50 AM	34.68	24936811	141910	35.1	
1/20/15 10:28	1/20/2015	10:28 AM	34.57	24986513	49702	35.1	
1/21/15 10:25	1/21/2015	10:25 AM	34.85	25036398	49885	34.7	
1/22/15 9:45	1/22/2015	9:45 AM	34.70	25085635	49237	35.2	
1/26/15 10:54	1/26/2015	10:54 AM	34.05	25288090	202455	34.7	
1/27/15 10:31	1/27/2015	10:31 AM	34.06	25337879	49789	35.1	
1/28/15 9:26	1/28/2015	9:26 AM	34.11	25385425	47546	34.6	
1/29/15 10:57	1/29/2015	10:57 AM	33.60	25439086	53661	35.0	
2/2/15 11:25	2/2/2015	11:25 AM	33.99	25640374	201288	34.8	
2/3/15 11:29	2/3/2015	11:29 AM	33.81	25690064	49690	34.4	
2/4/15 11:31	2/4/2015	11:31 AM	36.41	25740262	50198	34.8	
2/5/15 11:46	2/5/2015	11:46 AM	34.02	25790509	50247	34.5	
2/9/15 11:27	2/9/2015	11:27 AM	36.11	25987967	197458	34.4	
2/10/15 10:55	2/10/2015	10:55 AM	33.95	26036533	48566	34.5	
2/11/15 9:38	2/11/2015	9:38 AM	33.49	26083313	46780	34.3	
2/12/15 10:57	2/12/2015	10:57 AM	33.97	26135438	52125	34.3	
2/17/15 10:13	2/17/2015	10:13 AM	34.14	26381175	245737	34.3	
2/18/15 10:00	2/18/2015	10:00 AM	34.19	26430248	49073	34.4	
2/19/15 10:45	2/19/2015	10:45 AM	34.11	26480822	50574	34.1	
2/23/15 10:42	2/23/2015	10:42 AM	34.15	26677671	196849	34.2	
2/24/15 10:43	2/24/2015	10:43 AM	34.22	26728054	50383	35.0	
2/26/15 10:51	2/26/2015	10:51 AM	34.12	26826573	98519	34.1	
3/2/15 11:36	3/2/2015	11:36 AM	34.64	27026572	199999	34.5	
3/3/15 12:25	3/3/2015	12:25 PM	34.74	27078153	51581	34.6	
3/4/15 11:02	3/4/2015	11:02 AM	35.03	27125544	47391	34.9	
3/9/15 9:49	3/9/2015	9:49 AM	37.58	27377276	251732	35.3	
3/10/15 11:28	3/10/2015	11:28 AM	35.11	27425105	47829	31.1	
3/11/15 14:59	3/11/2015	2:59 PM	34.93	27483467	58362	35.3	
3/12/15 11:38	3/12/2015	11:38 AM	37.27	27528030	44563	36.0	
3/16/15 11:18	3/16/2015	11:18 AM	37.61	27732039	204009	35.5	
3/17/15 9:53	3/17/2015	9:53 AM	35.16	27781057	49018	36.2	
3/18/15 15:38	3/18/2015	3:38 PM	37.64	27844690	63633	35.6	
3/19/15 11:49	3/19/2015	11:49 AM	37.50	27888384	43694	36.1	
3/23/15 10:53	3/23/2015	10:53 AM	35.40	28093130	204746	35.9	
3/24/15 10:02	3/24/2015	10:02 AM	35.45	28143122	49992	36.0	
3/25/15 13:37	3/25/2015	1:37 PM	34.85	28203235	60113	36.3	
3/26/15 11:47	3/26/2015	11:47 AM	35.39	28251143	47908	36.0	
3/30/15 15:36	3/30/2015	3:36 PM	37.94	28467313	216170	36.1	
3/31/15 11:17	3/31/2015	11:17 AM	37.91	28509735	42422	35.9	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
4/1/15 10:18	4/1/2015	10:18 AM	35.26	28559836	50101	36.3	
4/2/15 11:54	4/2/2015	11:54 AM	37.91	28615463	55627	36.2	
4/6/15 15:13	4/6/2015	3:13 PM	35.31	28830722	215259	36.1	
4/7/15 15:06	4/7/2015	3:06 PM	35.49	28882358	51636	36.0	
4/8/15 15:26	4/8/2015	3:26 PM	38.21	28935631	53273	36.5	
4/9/15 11:50	4/9/2015	11:50 AM	35.32	28979979	44348	36.2	
4/13/15 10:14	4/13/2015	10:14 AM	35.60	29185112	205133	36.2	
4/14/15 11:06	4/14/2015	11:06 AM	35.71	29239191	54079	36.2	
4/15/15 10:08	4/15/2015	10:08 AM	37.73	29289838	50647	36.6	
4/16/15 9:45	4/16/2015	9:45 AM	35.75	29341821	51983	36.7	
4/20/15 12:04	4/20/2015	12:04 PM	36.36	29556435	214614	36.4	
4/21/15 10:28	4/21/2015	10:28 AM	36.33	29605887	49452	36.8	
4/22/15 10:34	4/22/2015	10:34 AM	35.80	29658392	52505	36.3	
4/23/15 10:33	4/23/2015	10:33 AM	36.45	29711430	53038	36.9	
4/27/15 10:32	4/27/2015	10:32 AM	38.61	29923990	212560	36.9	
4/28/15 9:15	4/28/2015	9:15 AM	38.68	29974789	50799	37.3	
4/29/15 11:31	4/29/2015	11:31 AM	36.04	30032589	57800	36.7	
4/30/15 11:38	4/30/2015	11:38 AM	36.10	30085511	52922	36.6	
5/4/15 10:02	5/4/2015	10:02 AM	35.88	30293164	207653	36.7	
5/5/15 10:23	5/5/2015	10:23 AM	38.32	30346257	53093	36.3	
5/6/15 10:09	5/6/2015	10:09 AM	38.46	30398147	51890	36.4	
5/7/15 10:03	5/7/2015	10:03 AM	36.03	30450695	52548	36.6	
5/9/15 12:46	5/9/2015	12:46 PM	36.00	30563401	112706	37.0	
5/11/15 11:39	5/11/2015	11:39 AM	38.45	30670645	107244	38.1	
5/12/15 9:40	5/12/2015	9:40 AM	36.19	30719137	48492	36.7	
5/13/15 15:21	5/13/2015	3:21 PM	36.26	30784588	65451	36.7	
5/14/15 10:34	5/14/2015	10:34 AM	36.42	30827325	42737	37.1	
5/18/15 10:41	5/18/2015	10:41 AM	38.35	31037937	210612	36.5	
5/19/15 9:35	5/19/2015	9:35 AM	38.95	31088572	50635	36.9	
5/20/15 10:51	5/20/2015	10:51 AM	35.68	31136908	48336	31.9	
5/21/15 11:55	5/21/2015	11:55 AM	38.89	31192450	55542	36.9	
5/26/15 10:19	5/26/2015	10:19 AM	38.81	31454231	261781	36.8	
5/27/15 12:58	5/27/2015	12:58 PM	36.03	31513420	59189	37.0	
5/28/15 10:00	5/28/2015	10:00 AM	36.07	31559744	46324	36.7	
6/2/15 13:38	6/2/2015	1:38 PM	38.54	31831649	271905	36.7	
6/8/15 10:03	6/8/2015	10:03 AM	36.83	32142004	310355	36.8	
6/9/15 9:28	6/9/2015	9:28 AM	36.45	32193707	51703	36.8	
6/10/15 9:00	6/10/2015	9:00 AM	37.13	32245837	52130	36.9	
6/11/15 10:58	6/11/2015	10:58 AM	36.45	32302942	57105	36.7	
6/15/15 13:38	6/15/2015	1:38 PM	36.90	32521237	218295	36.9	
6/16/15 12:16	6/16/2015	12:16 PM	36.92	32571201	49964	36.8	
6/17/15 9:56	6/17/2015	9:56 AM	36.87	32619090	47889	36.8	
6/18/15 10:30	6/18/2015	10:30 AM	36.66	32673981	54891	37.2	
6/22/15 10:45	6/22/2015	10:45 AM	36.64	32887066	213085	36.9	
6/23/15 9:48	6/23/2015	9:48 AM	39.07	32938272	51206	37.0	
6/24/15 10:29	6/24/2015	10:29 AM	37.41	32994129	55857	37.7	
6/25/15 10:18	6/25/2015	10:18 AM	37.09	33047865	53736	37.6	
6/29/15 9:58	6/29/2015	9:58 AM	37.41	33261684	213819	37.3	
6/30/15 10:01	6/30/2015	10:01 AM	37.22	33315719	54035	37.4	
7/1/15 10:01	7/1/2015	10:01 AM	37.02	33369507	53788	37.4	
7/2/15 8:30	7/2/2015	8:30 AM	37.36	33419969	50462	37.4	Off while jetting tank discharge line
7/6/15 10:24	7/6/2015	10:24 AM	36.20	33621713	201744	34.3	
7/7/15 15:13	7/7/2015	3:13 PM	38.71	33685486	63773	36.9	
7/8/15 9:54	7/8/2015	9:54 AM	36.52	33727175	41689	37.2	
7/9/15 10:22	7/9/2015	10:22 AM	36.71	33781662	54487	37.1	
7/13/15 9:40	7/13/2015	9:40 AM	37.00	33992564	210902	36.9	
7/14/15 9:48	7/14/2015	9:48 AM	37.21	34046629	54065	37.3	
7/15/15 10:36	7/15/2015	10:36 AM	38.72	34103745	57116	38.4	
7/16/15 11:07	7/16/2015	11:07 AM	38.87	34160747	57002	38.8	
7/20/15 9:46	7/20/2015	9:46 AM	39.01	34369491	208744	36.8	
7/21/15 9:44	7/21/2015	9:44 AM	38.77	34422329	52838	36.7	
7/23/15 9:57	7/23/2015	9:57 AM	35.18	34528292	105963	36.6	
7/27/15 15:26	7/27/2015	3:26 PM	38.87	34753001	224709	36.9	
7/28/15 10:21	7/28/2015	10:21 AM	38.87	34796211	43210	38.1	
7/29/15 9:45	7/29/2015	9:45 AM	38.90	34848928	52717	37.5	
7/30/15 9:45	7/30/2015	9:45 AM	38.90	34902790	53862	37.4	
8/3/15 10:10	8/3/2015	10:10 AM	35.83	35116180	213390	36.9	
8/4/15 9:45	8/4/2015	9:45 AM	35.78	35168126	51946	36.7	
8/5/15 15:22	8/5/2015	3:22 PM	35.91	35233086	64960	36.6	
8/6/15 10:45	8/6/2015	10:45 AM	36.15	35275986	42900	36.9	
8/10/15 13:03	8/10/2015	1:03 PM	38.31	35491938	215952	36.6	
8/11/15 9:13	8/11/2015	9:13 AM	36.11	35535906	43968	36.3	
8/12/15 10:00	8/12/2015	10:00 AM	35.87	35589593	53687	36.1	
8/13/15 10:18	8/13/2015	10:18 AM	36.11	35643210	53617	36.8	
8/17/15 9:27	8/17/2015	9:27 AM	36.65	35851098	207888	36.4	
8/18/15 10:17	8/18/2015	10:17 AM	36.39	35905369	54271	36.4	
8/19/15 10:26	8/19/2015	10:26 AM	36.24	35959089	53720	37.1	
8/20/15 9:37	8/20/2015	9:37 AM	36.65	36010139	51050	36.7	
8/25/15 8:38	8/25/2015	8:38 AM	36.98	36275819	265680	37.2	PW-1 pump replaced
8/27/15 8:22	8/27/2015	8:22 AM	42.55	36324750	48931	17.1	
8/28/15 9:11	8/28/2015	9:11 AM	43.39	36375183	50433	33.9	
8/31/15 11:53	8/31/2015	11:53 AM	37.33	36543455	168272	37.5	
9/1/15 10:33	9/1/2015	10:33 AM	36.86	36593838	50383	37.0	
9/2/15 10:06	9/2/2015	10:06 AM	36.80	36646144	52306	37.0	
9/3/15 10:21	9/3/2015	10:21 AM	36.77	36699870	53726	36.9	
9/8/15 10:13	9/8/2015	10:13 AM	36.54	36964956	265086	36.9	
9/9/15 13:37	9/9/2015	1:37 PM	36.62	37025455	60499	36.8	
9/10/15 10:13	9/10/2015	10:13 AM	36.49	37070909	45454	36.8	
9/14/15 10:07	9/14/2015	10:07 AM	36.73	37283058	212149	36.9	
9/15/15 11:54	9/15/2015	11:54 AM	36.91	37336030	52972	34.2	
9/16/15 13:45	9/16/2015	1:45 PM	36.85	37393244	57214	36.9	
9/17/15 10:08	9/17/2015	10:08 AM	36.93	37438333	45089	36.9	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
9/21/15 11:01	9/21/2015	11:01 AM	36.50	37652438	214105	36.8	
9/22/15 11:42	9/22/2015	11:42 AM	35.79	37702424	49986	33.8	
9/23/15 8:55	9/23/2015	8:55 AM	35.29	37748350	45926	36.1	
9/24/15 8:55	9/24/2015	8:55 AM	37.74	37799696	51346	35.7	
9/28/15 12:47	9/28/2015	12:47 PM	37.70	38013099	213403	35.6	
9/29/15 10:53	9/29/2015	10:53 AM	34.73	38059833	46734	35.2	
9/30/15 9:08	9/30/2015	9:08 AM	34.86	38107233	47400	35.5	
10/1/15 9:53	10/1/2015	9:53 AM	37.76	38159277	52044	35.0	
10/5/15 9:47	10/5/2015	9:47 AM	37.32	38366920	207643	36.1	
10/6/15 12:29	10/6/2015	12:29 PM	37.34	38422907	55987	34.9	
10/7/15 10:34	10/7/2015	10:34 AM	34.06	38469018	46111	34.8	
10/8/15 11:20	10/8/2015	11:20 AM	34.00	38520708	51690	34.8	
10/12/15 10:01	10/12/2015	10:01 AM	33.70	38718885	198177	34.9	
10/13/15 9:48	10/13/2015	9:48 AM	33.81	38768698	49813	34.9	
10/14/15 13:39	10/14/2015	1:39 PM	36.83	38827200	58502	35.0	
10/15/15 11:01	10/15/2015	11:01 AM	36.25	38871338	44138	34.4	
10/19/15 10:47	10/19/2015	10:47 AM	36.90	39071131	199793	34.8	
10/20/15 14:08	10/20/2015	2:08 PM	36.89	39128777	57646	35.1	
10/21/15 9:24	10/21/2015	9:24 AM	33.74	39168213	39436	34.1	
10/22/15 10:21	10/22/2015	10:21 AM	37.88	39215662	47449	31.7	
10/26/15 13:25	10/26/2015	1:25 PM	37.64	39426981	211319	35.6	
10/27/15 12:02	10/27/2015	12:02 PM	33.77	39474720	47739	35.2	
10/28/15 10:15	10/28/2015	10:15 AM	37.54	39521420	46700	35.0	
10/29/15 10:10	10/29/2015	10:10 AM	33.62	39572531	51111	35.6	
11/2/15 9:40	11/2/2015	9:40 AM	37.15	39774479	201948	35.2	
11/3/15 9:15	11/3/2015	9:15 AM	33.40	39823982	49503	35.0	
11/4/15 9:33	11/4/2015	9:33 AM	33.02	39873931	49949	34.3	
11/5/15 12:54	11/5/2015	12:54 PM	33.32	39931665	57734	35.2	
11/9/15 10:07	11/9/2015	10:07 AM	33.50	40125771	194106	34.7	
11/10/15 9:52	11/10/2015	9:52 AM	37.15	40176222	50451	35.4	
11/11/15 9:52	11/11/2015	9:52 AM	33.26	40225767	49545	34.4	
11/12/15 10:25	11/12/2015	10:25 AM	37.12	40276947	51180	34.7	
11/16/15 10:37	11/16/2015	10:37 AM	33.12	40476953	200006	34.7	
11/17/15 12:14	11/17/2015	12:14 PM	37.61	40531350	54397	35.4	
11/18/15 9:58	11/18/2015	9:58 AM	33.78	40577470	46120	35.4	
11/19/15 9:26	11/19/2015	9:26 AM	33.91	40626602	49132	34.9	
11/22/15 12:08	11/22/2015	12:08 PM	37.59	40785070	158468	35.4	
11/30/15 10:44	11/30/2015	10:44 AM	37.52	41187433	402363	35.2	
12/1/15 9:20	12/1/2015	9:20 AM	33.67	41234902	47469	35.0	
12/2/15 9:32	12/2/2015	9:32 AM	37.48	41286194	51292	35.3	
12/3/15 11:18	12/3/2015	11:18 AM	33.51	41339815	53621	34.7	
12/7/15 13:43	12/7/2015	1:43 PM	37.66	41547951	208136	35.2	
12/8/15 9:42	12/8/2015	9:42 AM	37.54	41590001	42050	35.1	
12/9/15 9:36	12/9/2015	9:36 AM	33.60	41640072	50071	34.9	
12/10/15 14:54	12/10/2015	2:54 PM	37.55	41702410	62338	35.5	
12/14/15 12:50	12/14/2015	12:50 PM	33.90	41901459	199049	35.3	
12/15/15 15:40	12/15/2015	3:40 PM	37.13	41957629	56170	34.9	
12/16/15 9:55	12/16/2015	9:55 AM	37.20	41996513	38884	35.5	
12/17/15 11:07	12/17/2015	11:07 AM	33.94	42050670	54157	35.8	
12/21/15 11:33	12/21/2015	11:33 AM	33.54	42254108	203438	35.2	
12/23/15 9:21	12/23/2015	9:21 AM	37.37	42350091	95983	34.9	
12/28/15 15:15	12/28/2015	3:15 PM	37.16	42613652	263561	34.9	
12/29/15 11:27	12/29/2015	11:27 AM	37.22	42655985	42333	34.9	
12/30/15 14:20	12/30/2015	2:20 PM	33.66	42712447	56462	35.0	
1/4/16 10:47	1/4/2016	10:47 AM	33.77	42957837	245390	35.1	
1/5/16 10:37	1/5/2016	10:37 AM	33.80	43007908	50071	35.0	
1/6/16 15:53	1/6/2016	3:53 PM	37.32	43069007	61099	34.8	
1/7/16 10:15	1/7/2016	10:15 AM	33.90	43107537	38530	35.0	
1/11/16 10:15	1/11/2016	10:15 AM	33.91	43309310	201773	35.0	
1/12/16 10:22	1/12/2016	10:22 AM	37.41	43359933	50623	35.0	
1/13/16 10:29	1/13/2016	10:29 AM	33.51	43410841	50908	35.2	
1/14/16 9:19	1/14/2016	9:19 AM	33.80	43458830	47989	35.0	
1/21/16 10:38	1/21/2016	10:38 AM	38.11	43816402	357572	35.2	
1/25/16 14:55	1/25/2016	2:55 PM	37.85	44031899	215497	35.8	
1/27/16 10:26	1/27/2016	10:26 AM	33.84	44124910	93011	35.6	
1/28/16 13:45	1/28/2016	1:45 PM	37.66	44183560	58650	35.8	
2/1/16 14:00	2/1/2016	2:00 PM	33.67	44388058	204498	35.4	
2/4/16 9:49	2/4/2016	9:49 AM	33.70	44530830	142772	35.1	
2/8/16 14:36	2/8/2016	2:36 PM	37.83	44744831	214001	35.4	
2/9/16 10:04	2/9/2016	10:04 AM	33.71	44786232	41401	35.4	
2/11/16 11:30	2/11/2016	11:30 AM	38.22	44892085	105853	35.7	
2/15/16 9:46	2/15/2016	9:46 AM	37.78	45092743	200658	35.5	
2/18/16 9:45	2/18/2016	9:45 AM	37.62	45245890	153147	35.5	
2/22/16 9:47	2/22/2016	9:47 AM	33.01	45450470	204580	35.5	
2/25/16 9:26	2/25/2016	9:26 AM	33.17	45603124	152654	35.5	
2/29/16 10:43	2/29/2016	10:43 AM	37.69	45809108	205984	35.3	
3/1/16 9:12	3/1/2016	9:12 AM	33.17	45855901	46793	34.7	
3/3/16 10:29	3/3/2016	10:29 AM	37.80	45959344	103443	35.0	
3/7/16 9:20	3/7/2016	9:20 AM	37.44	46159475	200131	35.2	
3/8/16 9:17	3/8/2016	9:17 AM	39.82	46211727	52252	36.4	
3/10/16 9:52	3/10/2016	9:52 AM	39.62	46321612	109885	37.7	
3/14/16 10:11	3/14/2016	10:11 AM	34.56	46535844	214232	37.1	
3/17/16 15:06	3/17/2016	3:06 PM	34.81	46704215	168371	36.5	
3/21/16 9:14	3/21/2016	9:14 AM	38.72	46904909	200694	37.1	
3/22/16 11:09	3/22/2016	11:09 AM	34.86	46960528	55619	35.8	
3/23/16 8:45	3/23/2016	8:45 AM	34.44	47006689	46161	35.6	On March 23, 2016; NCC cleaned the 2" piping and the check valve at the railroad bridge.
3/24/16 10:47	3/24/2016	10:47 AM	40.16	47060823	54134	34.7	
3/28/16 14:13	3/28/2016	2:13 PM	35.81	47282472	221649	37.2	
3/31/16 9:50	3/31/2016	9:50 AM	38.99	47430026	147554	36.4	
4/4/16 10:10	4/4/2016	10:10 AM	35.49	47640200	210174	36.4	
4/5/16 9:59	4/5/2016	9:59 AM	35.16	47691840	51640	36.1	
4/6/16 9:03	4/6/2016	9:03 AM	34.98	47741784	49944	36.1	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
4/7/16 10:55	4/7/2016	10:55 AM	38.40	47798444	56660	36.5	
4/11/16 12:03	4/11/2016	12:03 PM	34.57	48008592	210148	36.1	
4/13/16 15:18	4/13/2016	3:18 PM	34.90	48118210	109618	35.6	
4/14/16 10:19	4/14/2016	10:19 AM	34.74	48159183	40973	35.9	
4/18/16 10:03	4/18/2016	10:03 AM	37.57	48364840	205657	35.8	
4/19/16 9:46	4/19/2016	9:46 AM	37.99	48415869	51029	35.9	
4/20/16 9:58	4/20/2016	9:58 AM	37.92	48467428	51559	35.5	
4/21/16 11:41	4/21/2016	11:41 AM	37.90	48522407	54979	35.6	
4/25/16 9:56	4/25/2016	9:56 AM	37.93	48723626	201219	35.6	
4/28/16 10:50	4/28/2016	10:50 AM	34.66	48879027	155401	35.5	
5/2/16 10:12	5/2/2016	10:12 AM	37.88	49082973	203946	35.6	
5/3/16 9:30	5/3/2016	9:30 AM	37.72	49132788	49815	35.6	
5/4/16 16:10	5/4/2016	4:10 PM	39.67	49187089	54301	29.5	
5/9/16 9:15	5/9/2016	9:15 AM	33.07	49439550	252461	37.2	
5/10/16 8:58	5/10/2016	8:58 AM	32.89	49491611	52061	36.6	On May 10, 2016; the 4" ductile iron line between the PW-1/LFExS connection and the tie-in at the NCC force main was flushed using NCC equipment and personnel.
5/11/16 9:20	5/11/2016	9:20 AM	40.65	49544064	52453	35.9	
5/12/16 9:19	5/12/2016	9:19 AM	34.22	49592527	48463	33.7	To meet discharge permit flow limitations, the Trust decreased the discharge from well PW-1(U) slightly following clean out of the discharge line on March 23 and May 10, 2016.
5/16/16 10:40	5/16/2016	10:40 AM	33.83	49780776	188249	32.2	
5/19/16 10:58	5/19/2016	10:58 AM	29.50	49918344	137568	31.7	
5/23/16 11:18	5/23/2016	11:18 AM	33.50	50101800	183456	31.7	
5/26/16 10:22	5/26/2016	10:22 AM	33.08	50238299	136499	32.0	
5/31/16 9:40	5/31/2016	9:40 AM	33.08	50466047	227748	31.8	
6/1/16 9:46	6/1/2016	9:46 AM	33.13	50512070	46023	31.8	
6/2/16 11:08	6/2/2016	11:08 AM	29.06	50560328	48258	31.7	
6/6/16 9:20	6/6/2016	9:20 AM	29.07	50739549	179221	31.7	
6/7/16 9:44	6/7/2016	9:44 AM	33.06	50784475	44926	30.7	
6/8/16 9:54	6/8/2016	9:54 AM	32.78	50829416	44941	31.0	
6/9/16 11:59	6/9/2016	11:59 AM	28.73	50877889	48473	31.0	
6/13/16 14:48	6/13/2016	2:48 PM	28.58	51059798	181909	30.7	
6/14/16 10:00	6/14/2016	10:00 AM	28.62	51095345	35547	30.9	
6/16/16 10:38	6/16/2016	10:38 AM	29.10	51185344	89999	30.8	
6/20/16 9:04	6/20/2016	9:04 AM	29.20	51362004	176660	31.2	
6/23/16 9:26	6/23/2016	9:26 AM	33.17	51496513	134509	31.0	
6/27/16 10:14	6/27/2016	10:14 AM	32.57	51676457	179944	31.0	
6/30/16 12:07	6/30/2016	12:07 PM	28.76	51813586	137129	30.9	
7/5/16 11:49	7/5/2016	11:49 AM	33.45	52035254	221668	30.9	
7/6/16 9:15	7/6/2016	9:15 AM	33.13	52075081	39827	31.0	
7/7/16 9:58	7/7/2016	9:58 AM	32.96	52121310	46229	31.2	
7/8/16 8:58	7/8/2016	8:58 AM	32.90	52164002	42692	30.9	
7/11/16 8:41	7/11/2016	8:41 AM	29.09	52296857	132855	30.9	
7/12/16 8:44	7/12/2016	8:44 AM	28.87	52341246	44389	30.8	
7/13/16 9:17	7/13/2016	9:17 AM	28.92	52386408	45162	30.7	
7/14/16 9:01	7/14/2016	9:01 AM	28.87	52429928	43520	30.6	
7/18/16 11:21	7/18/2016	11:21 AM	28.79	52610724	180796	30.6	
7/19/16 9:07	7/19/2016	9:07 AM	28.79	52650703	39979	30.6	
7/21/16 9:15	7/21/2016	9:15 AM	28.86	52738848	88145	30.5	
7/25/16 9:16	7/25/2016	9:16 AM	28.80	52915030	176182	30.6	
7/26/16 8:55	7/26/2016	8:55 AM	28.66	52958451	43421	30.6	
7/27/16 13:31	7/27/2016	1:31 PM	33.22	53012738	54287	31.6	
8/1/16 8:53	8/1/2016	8:53 AM	32.55	53236534	223796	32.3	
8/2/16 9:22	8/2/2016	9:22 AM	32.42	53286038	49504	33.7	
8/3/16 8:52	8/3/2016	8:52 AM	32.34	53334043	48005	34.0	
8/4/16 11:10	8/4/2016	11:10 AM	32.46	53387881	53838	34.1	
8/10/16 11:01	8/10/2016	11:01 AM	36.26	53681719	293838	34.0	
8/11/16 9:12	8/11/2016	9:12 AM	32.20	53726164	44445	33.4	
8/15/16 9:40	8/15/2016	9:40 AM	31.98	53921659	195495	33.8	
8/18/16 9:35	8/18/2016	9:35 AM	31.90	54065421	143762	33.3	
8/24/16 13:21	8/24/2016	1:21 PM	31.89	54364456	299035	33.7	
8/25/16 9:47	8/25/2016	9:47 AM	31.80	54406184	41728	34.0	
8/29/16 14:32	8/29/2016	2:32 PM	31.92	54609506	203322	33.6	
8/31/16 10:34	8/31/2016	10:34 AM	35.62	54697554	88048	33.3	
9/6/16 9:30	9/6/2016	9:30 AM	31.82	54987242	289688	33.8	
9/8/16 12:20	9/8/2016	12:20 PM	31.54	55089263	102021	33.4	
9/12/16 10:00	9/12/2016	10:00 AM	32.77	55270106	180843	32.2	
9/13/16 10:41	9/13/2016	10:41 AM	32.46	55321903	51797	35.0	
9/15/16 10:35	9/15/2016	10:35 AM	32.43	55422879	100976	35.1	
9/19/16 13:14	9/19/2016	1:14 PM	36.38	55627729	204850	34.6	
9/22/16 10:33	9/22/2016	10:33 AM	36.10	55768958	141229	34.0	
9/26/16 9:05	9/26/2016	9:05 AM	31.99	55967590	198632	35.0	
9/27/16 9:25	9/27/2016	9:25 AM	36.29	56004873	37283	25.5	
9/28/16 8:47	9/28/2016	8:47 AM	36.57	56055073	50200	35.8	
9/29/16 12:50	9/29/2016	12:50 PM	36.38	56115498	60425	35.9	
10/3/16 11:24	10/3/2016	11:24 AM	32.31	56313182	197684	34.8	
10/6/16 10:30	10/6/2016	10:30 AM	31.94	56460277	147095	34.5	
10/13/16 9:29	10/13/2016	9:29 AM	31.77	56800299	340022	33.9	
10/17/16 10:34	10/17/2016	10:34 AM	34.86	56998158	197859	34.0	
10/18/16 8:58	10/18/2016	8:58 AM	35.27	57042272	44114	32.8	
10/19/16 8:25	10/19/2016	8:25 AM	35.24	57091907	49635	35.3	
10/20/16 11:04	10/20/2016	11:04 AM	36.35	57097033	5126	3.2	
10/24/16 9:28	10/24/2016	9:28 AM	32.81	57296764	199731	35.3	
10/26/16 9:51	10/26/2016	9:51 AM	36.43	57399078	102314	35.2	
10/27/16 10:54	10/27/2016	10:54 AM	36.33	57452635	53557	35.6	
10/31/16 10:49	10/31/2016	10:49 AM	35.67	57655232	202597	35.2	
11/1/16 13:06	11/1/2016	1:06 PM	32.88	57710440	55208	35.0	
11/2/16 9:05	11/2/2016	9:05 AM	32.82	57751415	40975	34.2	
11/3/16 10:22	11/3/2016	10:22 AM	32.83	57804244	52829	34.8	
11/7/16 13:49	11/7/2016	1:49 PM	35.05	58014023	209779	35.2	
11/9/16 11:00	11/9/2016	11:00 AM	36.11	58107147	93124	34.4	
11/10/16 11:58	11/10/2016	11:58 AM	35.36	58159330	52183	34.8	
11/14/16 11:44	11/14/2016	11:44 AM	32.90	58359757	200427	34.9	
11/17/16 11:07	11/17/2016	11:07 AM	32.82	58506368	146611	34.2	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
11/21/16 11:13	11/21/2016	11:13 AM	35.76	58704904	198536	34.4	
11/23/16 10:24	11/23/2016	10:24 AM	32.67	58801516	96612	34.1	
11/28/16 11:34	11/28/2016	11:34 AM	35.17	59051578	250062	34.4	
11/29/16 9:50	11/29/2016	9:50 AM	35.01	59097150	45572	34.1	
12/1/16 11:30	12/1/2016	11:30 AM	35.09	59198939	101789	34.2	
12/5/16 9:16	12/5/2016	9:16 AM	31.30	59391312	192373	34.2	
12/8/16 10:48	12/8/2016	10:48 AM	30.73	59541287	149975	34.0	
12/12/16 9:00	12/12/2016	9:00 AM	34.72	59733517	192230	34.0	
12/14/16 10:00	12/14/2016	10:00 AM	34.09	59832546	99029	33.7	
12/15/16 9:40	12/15/2016	9:40 AM	34.84	59879867	47321	33.3	
12/19/16 15:05	12/19/2016	3:05 PM	35.24	60084195	204328	33.6	
12/21/16 9:42	12/21/2016	9:42 AM	34.67	60168288	84093	32.9	
12/23/16 11:33	12/23/2016	11:33 AM	34.10	60267435	99147	33.1	
12/27/16 10:24	12/27/2016	10:24 AM	34.17	60455226	187791	33.0	
1/3/17 10:50	1/3/2017	10:50 AM	33.85	60787783	332557	32.9	
1/5/17 10:18	1/5/2017	10:18 AM	33.15	60880150	92367	32.4	
1/9/17 11:08	1/9/2017	11:08 AM	33.73	61069694	189544	32.6	
1/11/17 9:27	1/11/2017	9:27 AM	34.18	61160600	90906	32.7	
1/12/17 8:47	1/12/2017	8:47 AM	33.89	61206844	46244	33.0	
1/16/17 9:58	1/16/2017	9:58 AM	34.13	61395783	188939	32.4	
1/19/17 10:15	1/19/2017	10:15 AM	30.18	61537428	141645	32.7	
1/23/17 10:03	1/23/2017	10:03 AM	33.77	61724689	187261	32.6	
1/25/17 12:24	1/25/2017	12:24 PM	31.50	61822697	98008	32.4	
1/26/17 11:48	1/26/2017	11:48 AM	34.03	61867848	45151	32.2	
1/30/17 11:04	1/30/2017	11:04 AM	34.18	62053829	185981	32.5	
1/31/17 9:20	1/31/2017	9:20 AM	29.88	62097631	43802	32.8	
2/2/17 10:34	2/2/2017	10:34 AM	33.74	62193515	95884	32.5	
2/6/17 10:19	2/6/2017	10:19 AM	33.51	62381002	187487	32.6	
2/8/17 13:04	2/8/2017	1:04 PM	34.70	62478280	97278	31.9	
2/9/17 12:20	2/9/2017	12:20 PM	33.55	62522961	44681	32.0	
2/13/17 9:36	2/13/2017	9:36 AM	29.93	62706304	183343	32.8	
2/16/17 10:26	2/16/2017	10:26 AM	30.01	62847604	141300	32.3	
2/20/17 9:51	2/20/2017	9:51 AM	31.79	63037961	190357	33.3	
2/23/17 9:25	2/23/2017	9:25 AM	30.34	63178377	140416	32.7	
2/27/17 10:25	2/27/2017	10:25 AM	35.63	63371664	193287	33.2	
2/28/17 13:19	2/28/2017	1:19 PM	32.95	63426182	54518	33.8	
3/1/17 9:00	3/1/2017	9:00 AM	30.67	63465795	39613	33.5	
3/2/17 10:32	3/2/2017	10:32 AM	31.06	63514996	49201	32.1	
3/6/17 11:05	3/6/2017	11:05 AM	30.52	63704952	189956	32.8	
3/9/17 9:10	3/9/2017	9:10 AM	30.96	63841045	136093	32.4	
3/13/17 9:38	3/13/2017	9:38 AM	36.93	64026700	185655	32.1	
3/15/17 9:37	3/15/2017	9:37 AM	35.18	64124969	98269	34.1	
3/16/17 9:45	3/16/2017	9:45 AM	35.18	64174897	49928	34.5	
3/20/17 9:33	3/20/2017	9:33 AM	35.15	64375863	200966	35.0	
3/21/17 9:34	3/21/2017	9:34 AM	35.09	64426433	50570	35.1	
3/22/17 9:54	3/22/2017	9:54 AM	35.04	64477562	51129	35.0	
3/23/17 10:39	3/23/2017	10:39 AM	35.20	64529412	51850	34.9	
3/27/17 9:31	3/27/2017	9:31 AM	35.04	64728222	198810	34.9	
4/3/17 10:58	4/3/2017	10:58 AM	35.19	65084109	355887	35.0	
4/4/17 13:34	4/4/2017	1:34 PM	35.00	65139862	55753	34.9	
4/5/17 11:27	4/5/2017	11:27 AM	35.10	65185540	45678	34.8	
4/10/17 9:40	4/10/2017	9:40 AM	35.18	65431332	245792	34.7	
4/11/17 10:29	4/11/2017	10:29 AM	35.77	65482679	51347	34.5	
4/12/17 9:55	4/12/2017	9:55 AM	34.76	65531160	48481	34.5	
4/13/17 12:44	4/13/2017	12:44 PM	35.00	65586700	55540	34.5	
4/17/17 9:15	4/17/2017	9:15 AM	34.74	65779660	192960	34.8	
4/18/17 11:52	4/18/2017	11:52 AM	35.83	65835041	55381	34.7	
4/19/17 10:40	4/19/2017	10:40 AM	34.16	65882763	47722	34.9	
4/20/17 11:30	4/20/2017	11:30 AM	34.48	65934135	51372	34.5	
4/24/17 9:26	4/24/2017	9:26 AM	34.45	66129131	194996	34.6	
4/27/17 11:25	4/27/2017	11:25 AM	36.22	66282757	153626	34.6	
5/1/17 9:14	5/1/2017	9:14 AM	34.63	66476953	194196	34.5	
5/3/17 10:33	5/3/2017	10:33 AM	34.32	66578725	101772	34.4	
5/8/17 12:56	5/8/2017	12:56 PM	34.21	66831694	252969	34.5	
5/9/17 10:02	5/9/2017	10:02 AM	35.65	66875207	43513	34.4	
5/10/17 9:15	5/10/2017	9:15 AM	35.63	66923283	48076	34.5	
5/11/17 11:47	5/11/2017	11:47 AM	34.33	66978100	54817	34.4	
5/15/17 9:45	5/15/2017	9:45 AM	35.04	67172391	194291	34.5	
5/17/17 10:57	5/17/2017	10:57 AM	33.78	67272753	100362	34.0	
5/18/17 11:51	5/18/2017	11:51 AM	33.66	67323849	51096	34.2	
5/22/17 12:59	5/22/2017	12:59 PM	33.85	67522105	198256	34.0	
5/25/17 9:42	5/25/2017	9:42 AM	35.28	67662861	140756	34.1	
5/30/17 14:46	5/30/2017	2:46 PM	33.51	67918964	256103	34.1	
6/1/17 9:43	6/1/2017	9:43 AM	33.61	68006328	87364	33.9	
6/5/17 9:00	6/5/2017	9:00 AM	33.67	68200702	194374	34.0	
6/6/17 9:44	6/6/2017	9:44 AM	34.19	68250968	50266	33.9	
6/7/17 11:32	6/7/2017	11:32 AM	33.88	68303751	52783	34.1	
6/8/17 10:32	6/8/2017	10:32 AM	34.07	68350852	47101	34.1	
6/13/17 9:36	6/13/2017	9:36 AM	34.12	68593467	242615	34.0	
6/14/17 9:46	6/14/2017	9:46 AM	35.18	68642658	49191	33.9	
6/15/17 15:34	6/15/2017	3:34 PM	36.70	68647326	4668	2.6	
6/19/17 9:27	6/19/2017	9:27 AM	36.63	68842707	195381	36.2	
6/20/17 10:48	6/20/2017	10:48 AM	35.82	68897211	54504	35.8	
6/21/17 9:09	6/21/2017	9:09 AM	35.32	68945374	48163	35.9	
6/22/17 12:46	6/22/2017	12:46 PM	36.02	69004560	59186	35.7	
6/26/17 9:54	6/26/2017	9:54 AM	36.21	69204160	199600	35.7	
6/27/17 10:22	6/27/2017	10:22 AM	36.18	69256223	52063	35.5	
6/29/17 9:28	6/29/2017	9:28 AM	35.47	69356066	99843	35.3	
7/6/17 10:32	7/6/2017	10:32 AM	34.58	69712851	356785	35.2	
7/10/17 10:53	7/10/2017	10:53 AM	35.17	69915147	202296	35.0	
7/12/17 10:15	7/12/2017	10:15 AM	34.03	70013566	98419	34.6	
7/13/17 9:57	7/13/2017	9:57 AM	34.15	70062390	48824	34.3	
7/17/17 9:41	7/17/2017	9:41 AM	34.49	70258075	195685	34.1	
7/19/17 14:56	7/19/2017	2:56 PM	36.21	70366892	108817	34.1	

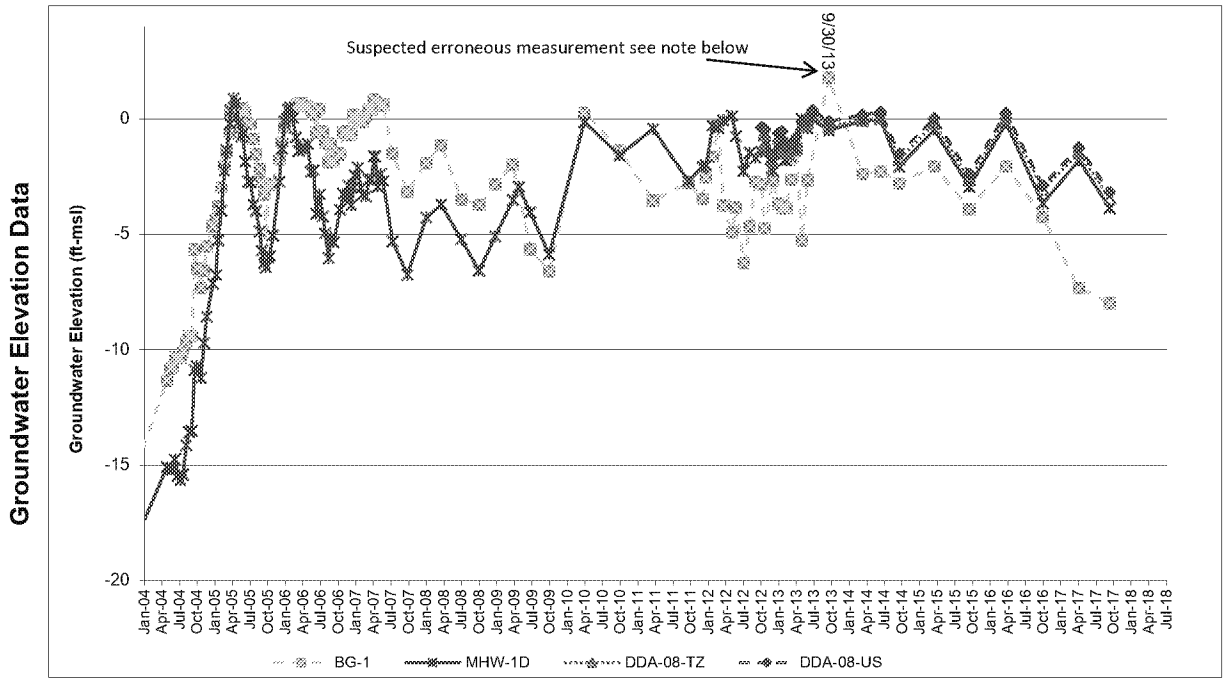
Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

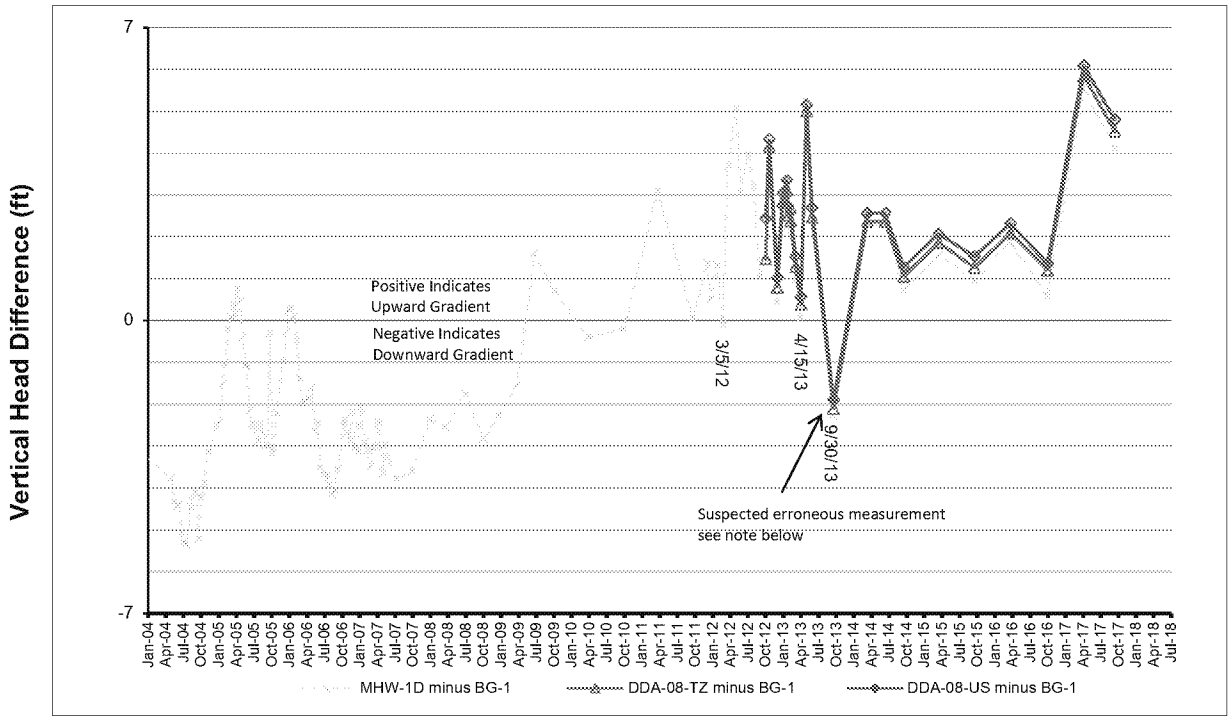
Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
7/20/17 9:34	7/20/2017	9:34 AM	34.26	70404697	37805	33.8	
7/24/17 9:08	7/24/2017	9:08 AM	35.20	70596464	191767	33.4	
7/25/17 10:10	7/25/2017	10:10 AM	33.70	70646728	50264	33.5	
7/27/17 9:45	7/27/2017	9:45 AM	33.15	70742261	95533	33.5	
7/31/17 9:29	7/31/2017	9:29 AM	33.59	70934032	191771	33.4	
8/1/17 9:18	8/1/2017	9:18 AM	34.43	70981541	47509	33.2	
8/2/17 13:10	8/2/2017	1:10 PM	33.65	71037018	55477	33.2	
8/3/17 9:28	8/3/2017	9:28 AM	33.58	71077375	40357	33.1	
8/7/17 9:46	8/7/2017	9:46 AM	35.51	71268576	191201	33.1	
8/8/17 10:27	8/8/2017	10:27 AM	34.11	71311463	42887	29.0	
8/9/17 9:32	8/9/2017	9:32 AM	33.44	71363002	51539	37.2	
8/10/17 8:57	8/10/2017	8:57 AM	33.03	71408952	45950	32.7	
8/14/17 11:26	8/14/2017	11:26 AM	34.30	71601121	192169	32.5	
8/15/17 9:26	8/15/2017	9:26 AM	32.77	71643712	42591	32.3	
8/16/17 14:13	8/16/2017	2:13 PM	35.21	71699571	55859	32.3	
8/17/17 10:47	8/17/2017	10:47 AM	32.14	71739188	39617	32.1	
8/21/17 10:27	8/21/2017	10:27 AM	33.34	71923180	183992	32.1	
8/22/17 8:38	8/22/2017	8:38 AM	32.14	71965536	42356	31.8	
8/23/17 10:22	8/23/2017	10:22 AM	36.39	72005752	40216	26.0	
8/24/17 13:28	8/24/2017	1:28 PM	34.16	72060261	54509	33.5	
8/28/17 9:36	8/28/2017	9:36 AM	33.18	72240784	180523	32.7	
8/30/17 10:53	8/30/2017	10:53 AM	32.44	72336600	95816	32.4	
8/31/17 9:31	8/31/2017	9:31 AM	32.67	72380644	44044	32.4	
9/5/17 9:42	9/5/2017	9:42 AM	32.01	72612043	231399	32.1	
9/6/17 9:32	9/6/2017	9:32 AM	32.03	72657641	45598	31.9	
9/7/17 13:26	9/7/2017	1:26 PM	31.96	72710860	53219	31.8	
9/11/17 9:57	9/11/2017	9:57 AM	33.10	72885719	174859	31.5	
9/12/17 8:36	9/12/2017	8:36 AM	31.52	72928468	42749	31.5	
9/13/17 10:13	9/13/2017	10:13 AM	31.68	72976956	48488	31.5	
9/14/17 9:32	9/14/2017	9:32 AM	31.37	73021037	44081	31.5	
9/18/17 9:42	9/18/2017	9:42 AM	30.68	73199413	178376	30.9	
9/19/17 10:43	9/19/2017	10:43 AM	31.73	73245194	45781	30.5	
9/21/17 9:40	9/21/2017	9:40 AM	30.65	73331240	86046	30.5	
9/25/17 9:50	9/25/2017	9:50 AM	31.19	73507310	176070	30.5	
9/26/17 10:14	9/26/2017	10:14 AM	30.19	73551853	44543	30.4	
9/27/17 9:39	9/27/2017	9:39 AM	33.60	73594478	42625	30.3	
9/28/17 10:00	9/28/2017	10:00 AM	30.54	73638621	44143	30.2	
10/2/17 10:50	10/2/2017	10:50 AM	30.88	73813230	174609	30.1	
10/3/17 9:49	10/3/2017	9:49 AM	31.77	73854401	41171	29.9	
10/5/17 9:43	10/5/2017	9:43 AM	31.21	73940315	85914	29.9	
10/9/17 10:43	10/9/2017	10:43 AM	29.96	74114433	174118	29.9	
10/10/17 10:00	10/10/2017	10:00 AM	32.60	74156080	41647	29.8	
10/11/17 13:20	10/11/2017	1:20 PM	30.36	74204894	48814	29.8	
10/12/17 12:46	10/12/2017	12:46 PM	29.81	74246823	41929	29.8	
10/16/17 9:30	10/16/2017	9:30 AM	29.99	74412035	165212	29.7	
10/18/17 9:20	10/18/2017	9:20 AM	30.83	74496929	84894	29.6	
10/19/17 10:54	10/19/2017	10:54 AM	30.59	74542243	45314	29.5	
10/23/17 9:28	10/23/2017	9:28 AM	30.30	74710161	167918	29.6	
10/25/17 10:26	10/25/2017	10:26 AM	29.96	74797315	87154	29.7	
10/26/17 10:20	10/26/2017	10:20 AM	30.12	74839622	42307	29.5	
10/30/17 10:20	10/30/2017	10:20 AM	30.52	75010611	170989	29.7	
10/31/17 10:07	10/31/2017	10:07 AM	31.11	75053084	42473	29.8	
11/2/17 10:35	11/2/2017	10:35 AM	30.01	75139900	86816	29.9	
11/6/17 9:45	11/6/2017	9:45 AM	30.60	75312031	172131	30.1	
11/7/17 10:03	11/7/2017	10:03 AM	30.19	75355510	43479	29.8	
11/9/17 11:50	11/9/2017	11:50 AM	30.08	75444980	89470	30.0	
11/13/17 11:16	11/13/2017	11:16 AM	31.40	75616822	171842	30.0	
11/14/17 8:13	11/14/2017	8:13 AM	30.35	75654748	37926	30.2	
11/15/17 11:10	11/15/2017	11:10 AM	30.21	75703295	48547	30.0	
11/16/17 9:51	11/16/2017	9:51 AM	30.08	75744166	40871	30.0	
11/20/17 9:57	11/20/2017	9:57 AM	29.68	75945252	201086	34.9	
11/21/17 9:33	11/21/2017	9:33 AM	29.63	75956900	11648	8.2	
11/27/17 10:50	11/27/2017	10:50 AM	30.13	76214600	257700	29.6	
11/28/17 9:40	11/28/2017	9:40 AM	29.95	76254940	40340	29.4	
11/30/17 9:57	11/30/2017	9:57 AM	29.90	76340620	85680	29.6	
12/4/17 13:09	12/4/2017	1:09 PM	29.28	76515552	174932	29.4	
12/6/17 9:27	12/6/2017	9:27 AM	29.30	76593752	78200	29.4	
12/7/17 9:58	12/7/2017	9:58 AM	32.73	76629508	35756	24.3	
12/11/17 10:03	12/11/2017	10:03 AM	31.03	76805984	176476	30.6	
12/12/17 10:17	12/12/2017	10:17 AM	30.96	76850512	44528	30.6	
12/13/17 9:28	12/13/2017	9:28 AM	30.16	76892349	41837	30.1	
12/14/17 12:50	12/14/2017	12:50 PM	30.59	76941606	49257	30.0	
12/18/17 9:55	12/18/2017	9:55 AM	30.77	77110916	169310	30.3	
12/19/17 9:30	12/19/2017	9:30 AM	30.71	77154215	43299	30.6	
12/21/17 10:10	12/21/2017	10:10 AM	30.51	77243546	89331	30.6	
12/27/17 10:10	12/27/2017	10:10 AM	30.34	77507792	264246	30.6	
12/28/17 10:26	12/28/2017	10:26 AM	30.51	77552199	44407	30.5	

1) Flow readings and rates based on flow logs provided by DS&G Remedial Trust
2) gpm = gallons per minute
3) gal = gallons
4) OM&M = Operating, Maintenance, and Monitoring

Prepared by: BPC 2/9/2018
Checked by: LWL 2/9/2018
Reviewed by: TAM 2/27/2018

APPENDIX E
GROUNDWATER GRADIENT TREND PLOTS





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.
- September 30, 2013: Suspected erroneous measurement. Well BG-1 extracting at the time of measurement and the calculated groundwater elevation in well BG-1 (+1.78 ft-msl) was several feet higher than the groundwater elevations observed in nearby DDA monitoring wells (-1.57 to -1.82 ft-msl in wells B-2D, B-3D, and C-3D).

Vertical Head Difference - BG-1

Golder Associates	Project Number:	013-6052		FIGURE E-1
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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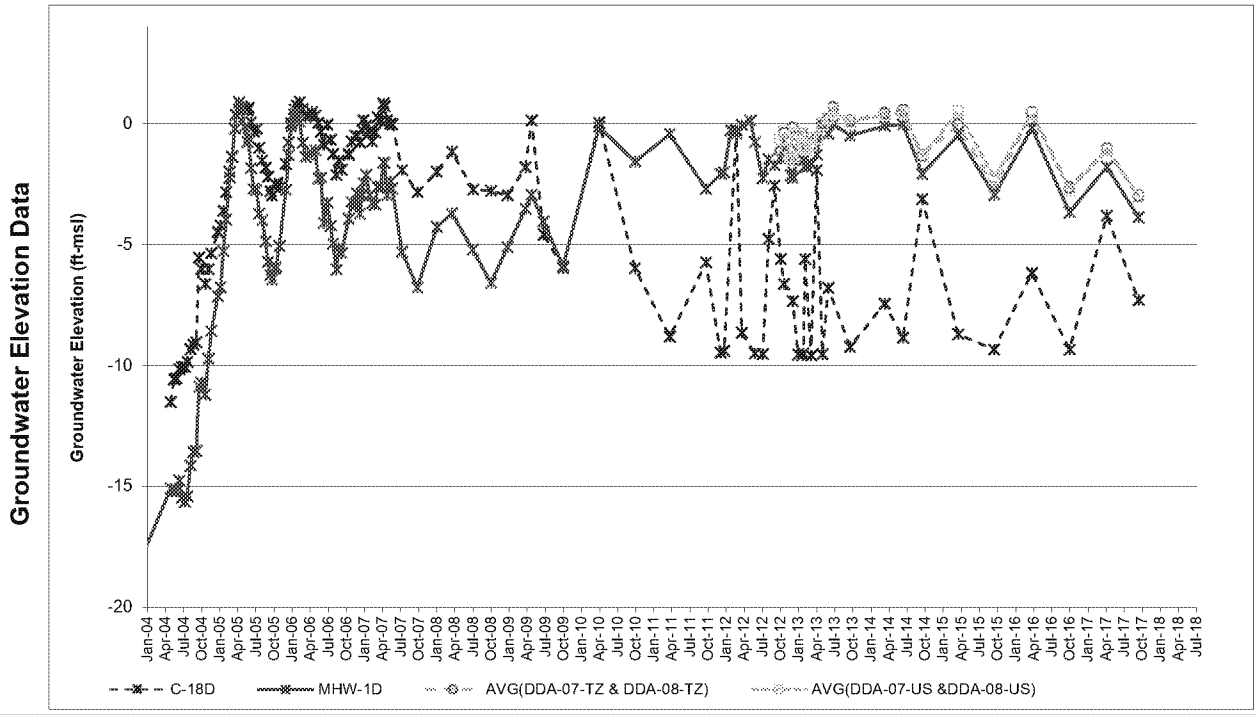
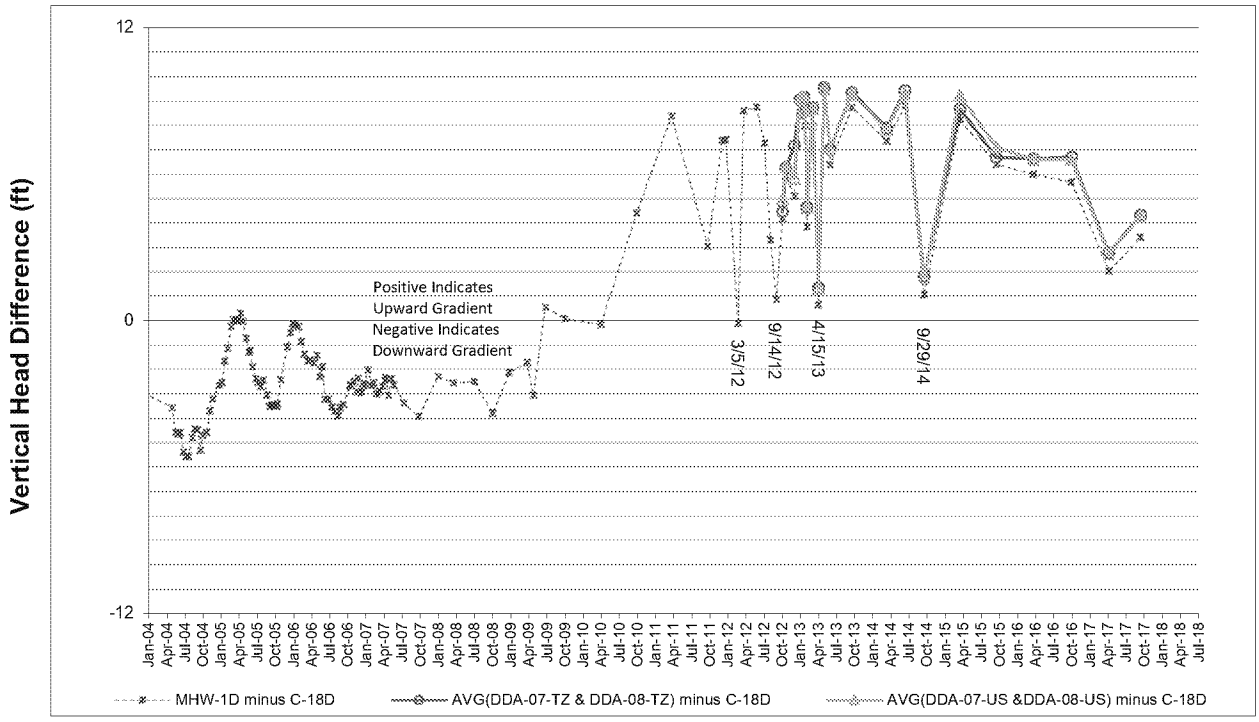
2/28/2018





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - C-18D

Golder Associates

Project Number:	013-6052		FIGURE E-2
Prepared by:	JMR	08/31/17	
Checked by:	BPC	02/14/18	Notes:
Reviewed by:	TAM	02/27/18	

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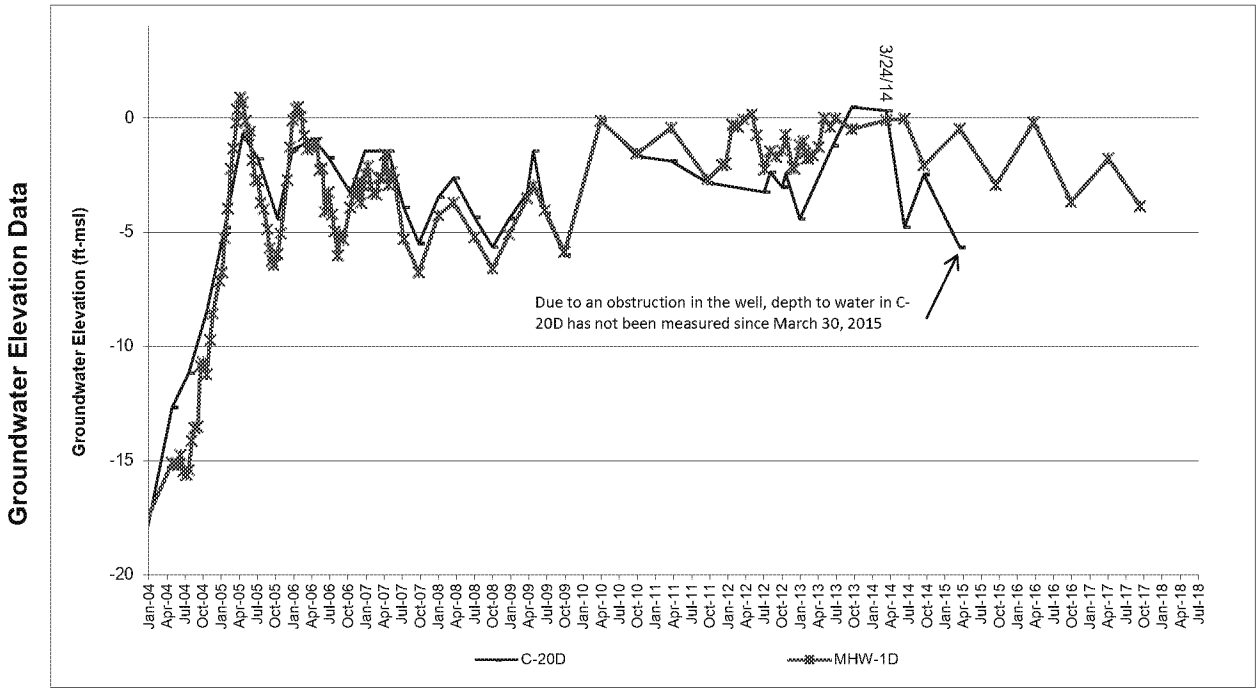
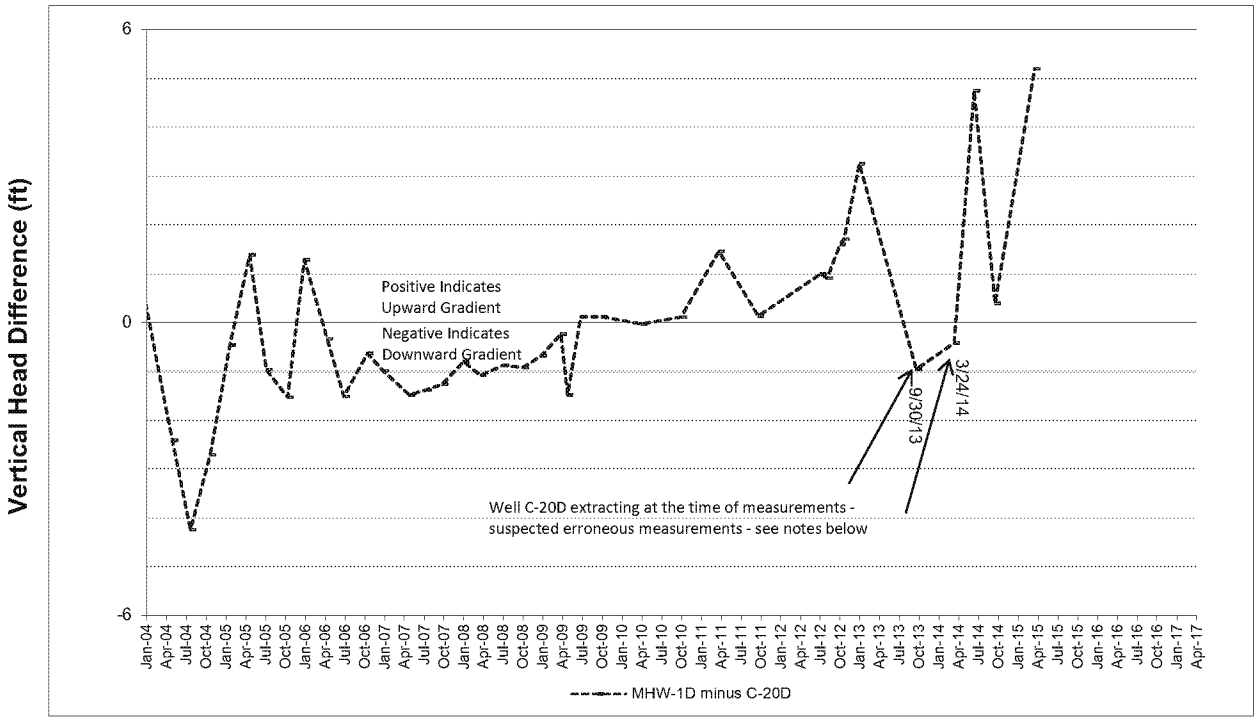
2/28/2018





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

C-20D connected to LFExS in December 2012

Specific events with reduced positive gradients or slightly negative gradients include:

September 30,2013: Suspected erroneous measurement. Well C-20D extracting at the time of measurement and the calculated groundwater elevation in well C-20D (+0.47 ft-msl) was over one foot higher than the groundwater elevations observed in nearby DDA monitoring wells (-0.97 to -2.00 ft-msl in wells B-2D, C-21D, MHW-1S, or MHW-1M).

March 24, 2014: Suspected erroneous measurement. Well C-20D extracting at the time of measurement and the calculated groundwater elevation in well C-20D (+0.32 ft-msl) was almost one foot higher than the groundwater elevations observed in nearby DDA monitoring wells (-0.49 to -2.14 ft-msl in wells B-2D, C-21D, MHW-1S, or MHW-1M).

Vertical Head Difference - C-20D

Golder Associates	Project Number:	013-6052		FIGURE E-3
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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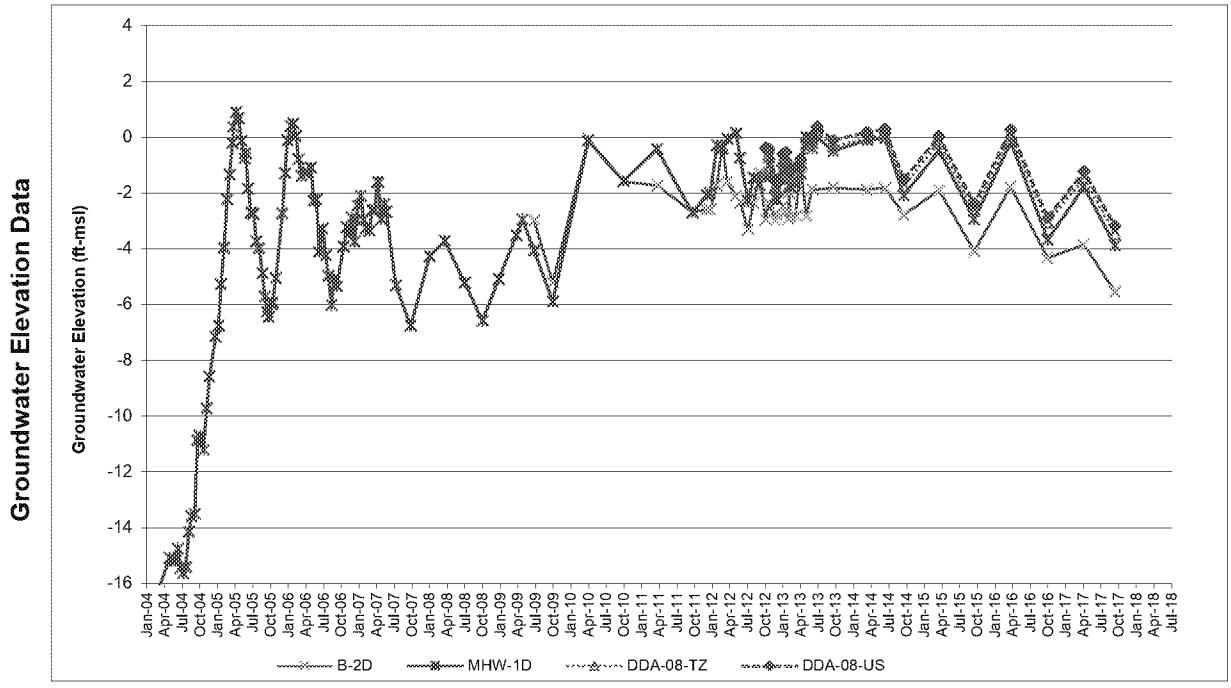

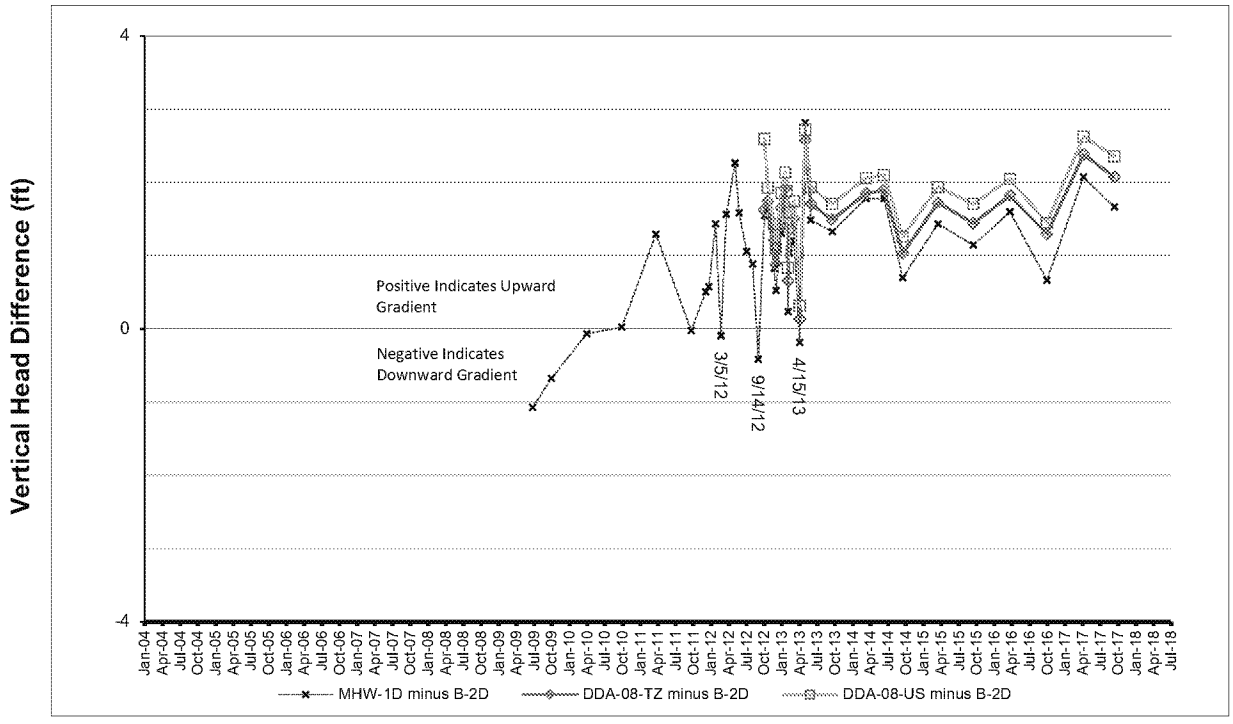

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - B-2D

Golder Associates	Project Number:	013-6052		FIGURE E-4
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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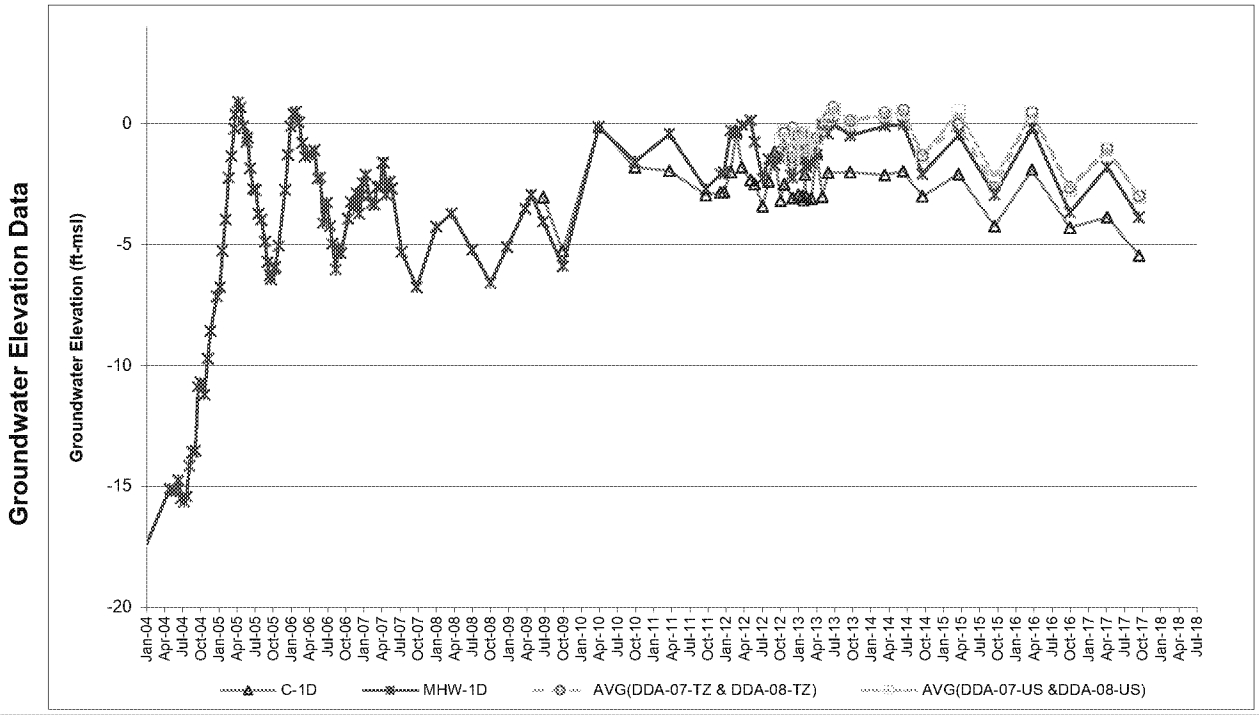
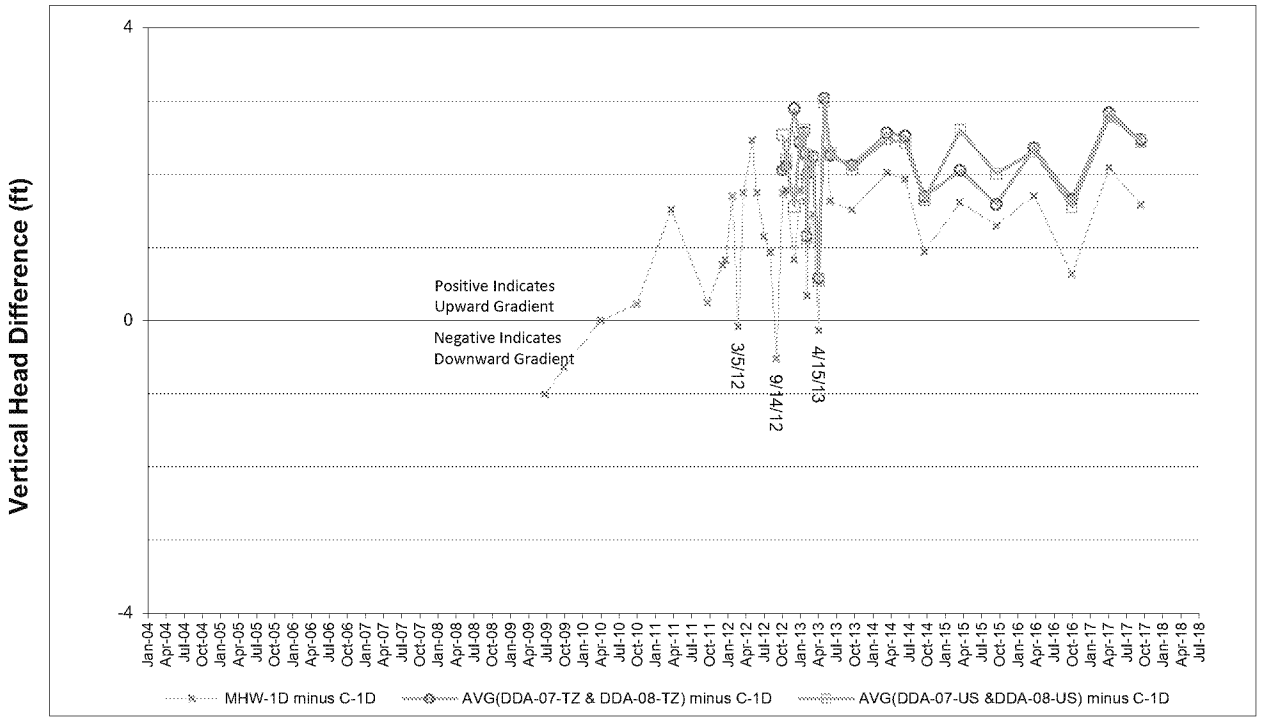
2/28/2018





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 15, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - C-1D

Golder Associates

Project Number:	013-6052		FIGURE E-5
Prepared by:	JMR	08/31/17	
Checked by:	BPC	02/14/18	Notes:
Reviewed by:	TAM	02/27/18	

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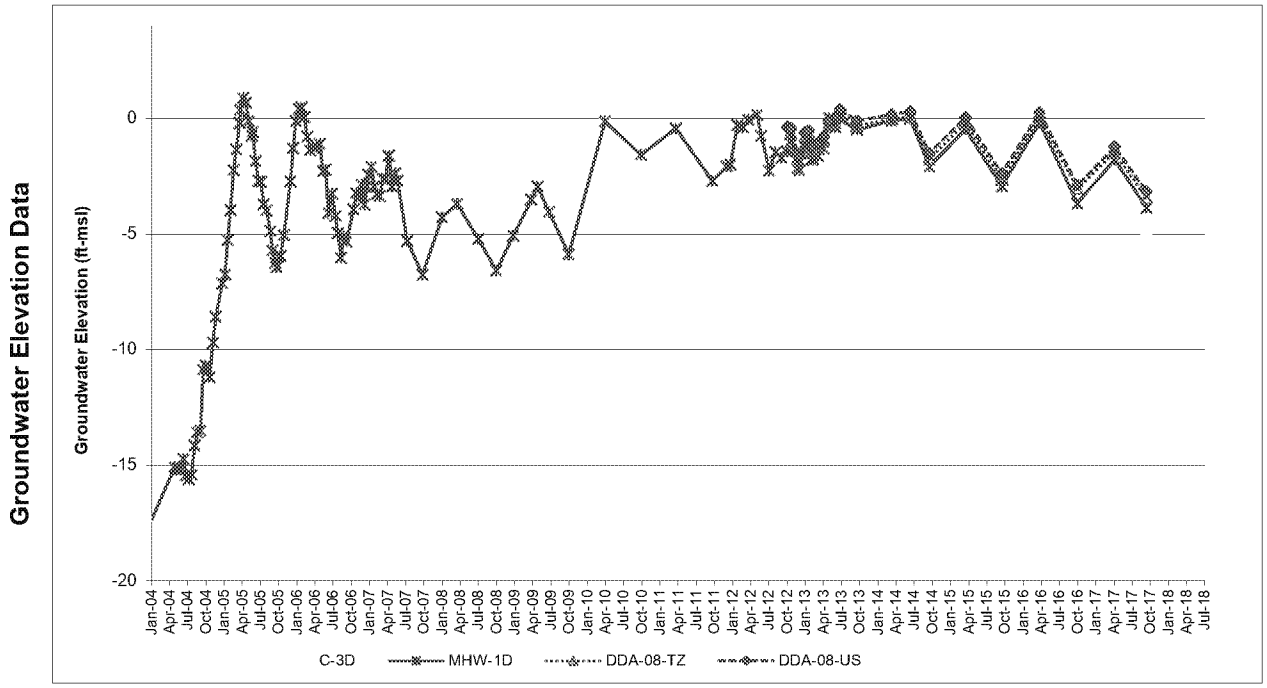
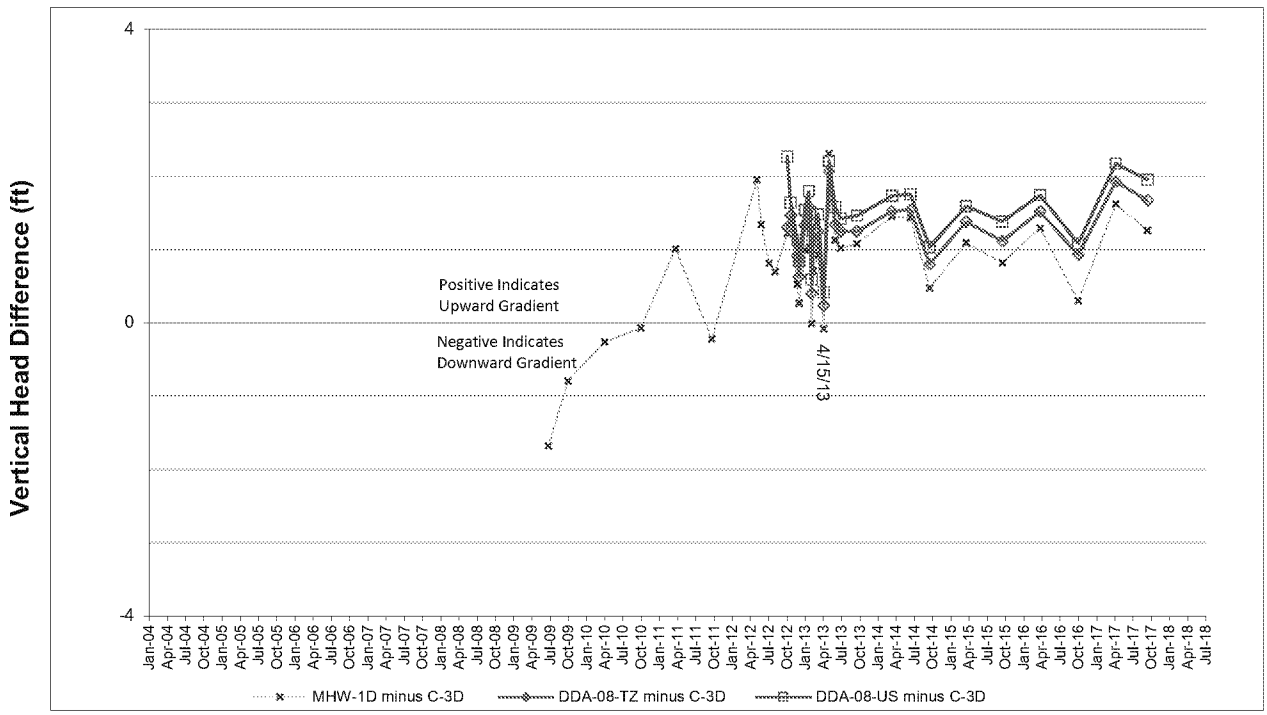
2/28/2018





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - C-3D

Golder Associates	Project Number:	013-6052		FIGURE E-6
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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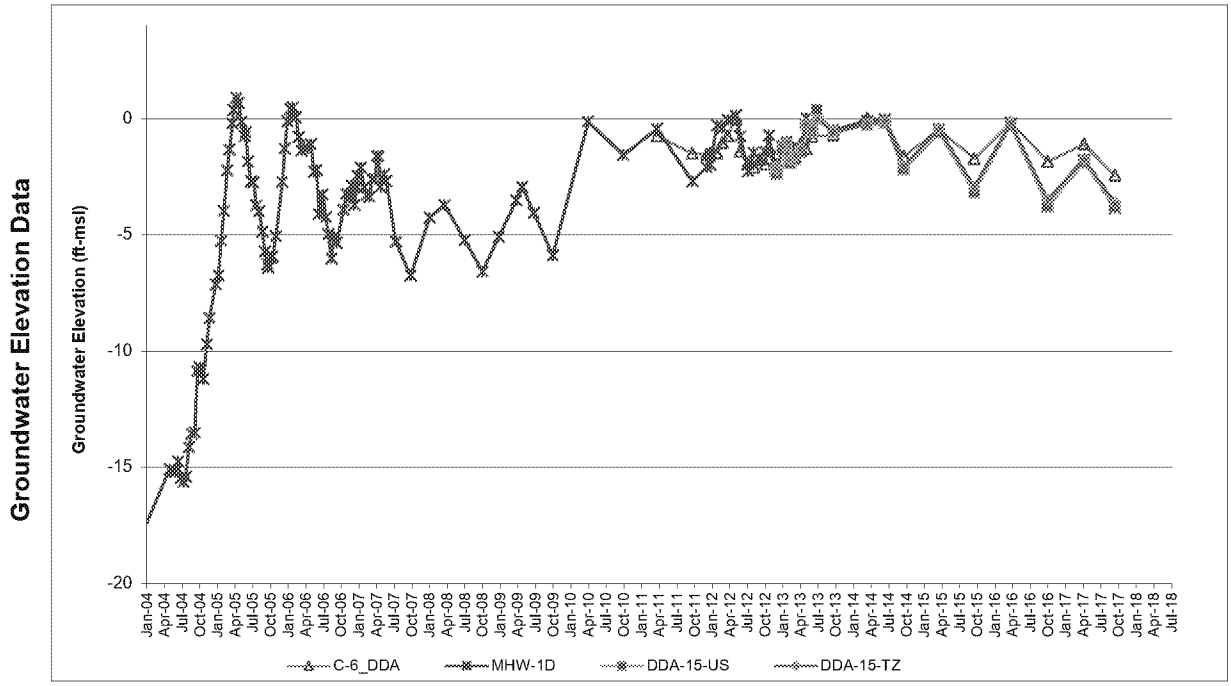
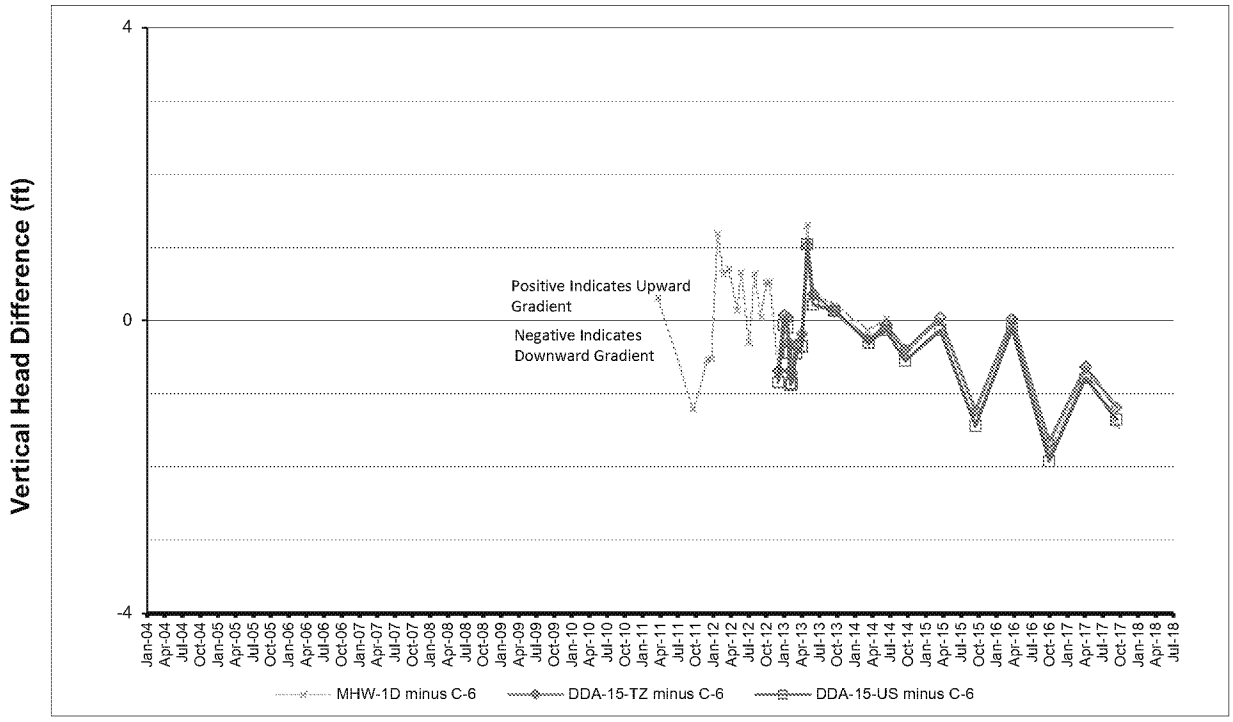
2/28/2018





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- The fluctuating vertical head differences calculated for well C-6 since 2011 are related to performance/operational issues associated with extraction well B-4DR, and indicate that well C-6 is at the eastern periphery of the well B-4DR and LFExS influence. Well C-6 is located in a portion of the containment area where thick UPCU is present and VOC and SVOC concentrations are low (e.g., BCEE was detected at 0.021 micrograms per liter [ug/l] in 2008, prior to LFExS startup).

Vertical Head Difference - C-6

Golder Associates	Project Number:	013-6052		FIGURE E-7
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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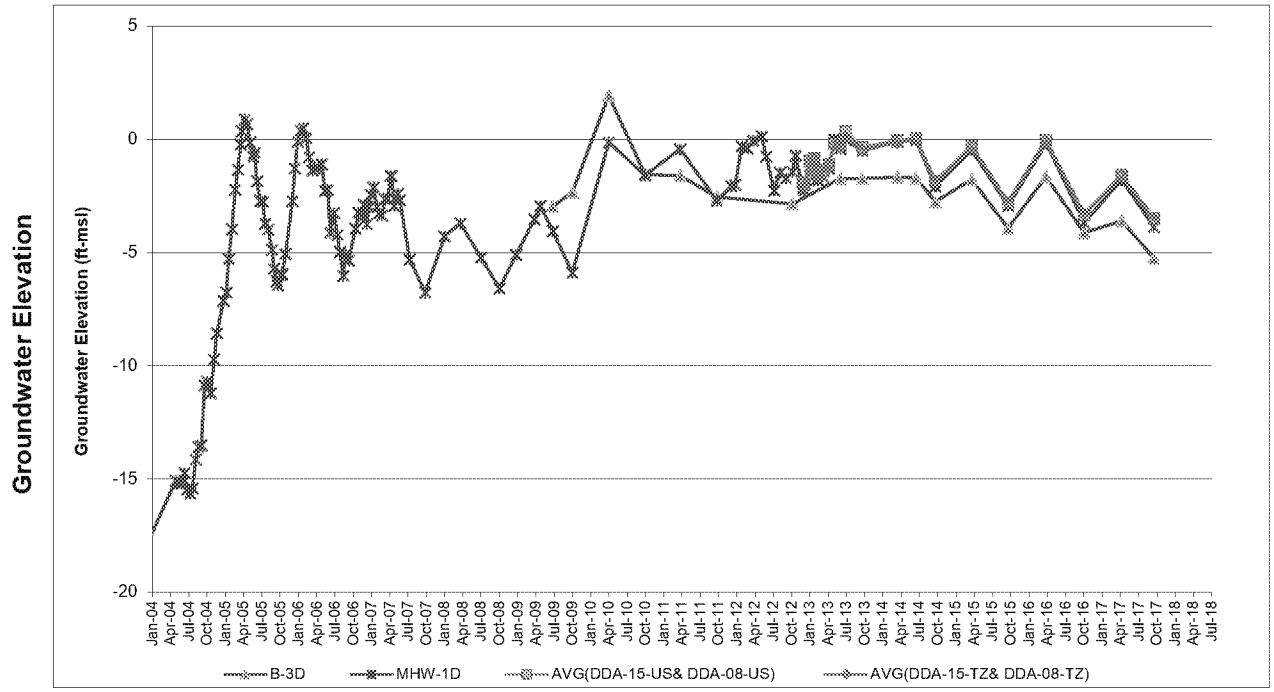
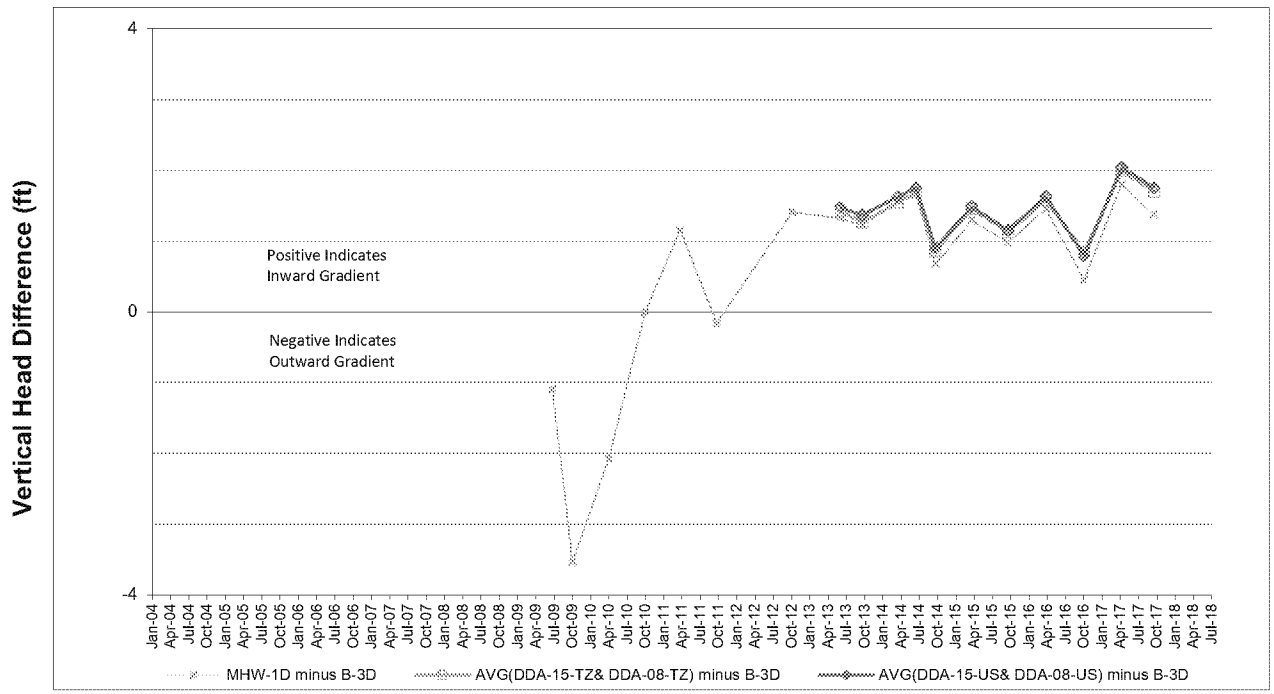
2/28/2018





Notes:
Elevations revised based on December 2012 re-survey
Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Vertical Head Difference - B-3D

Golder Associates	Project Number:	013-6052		FIGURE E-8
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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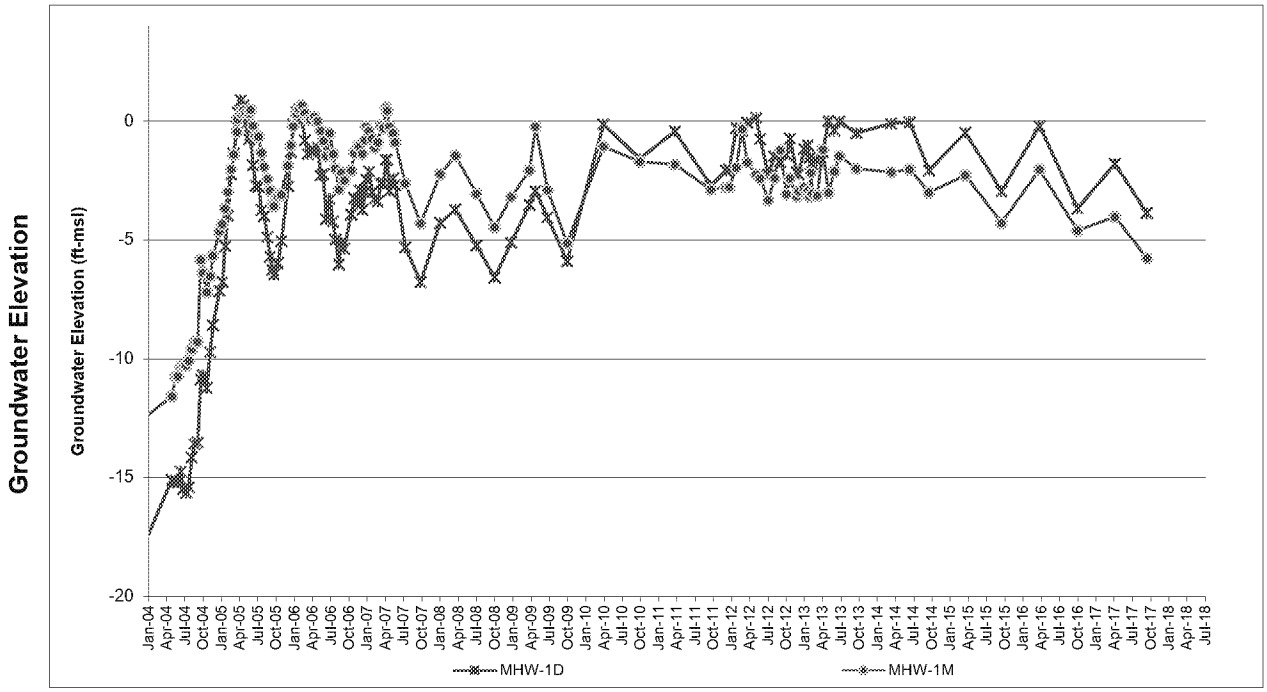
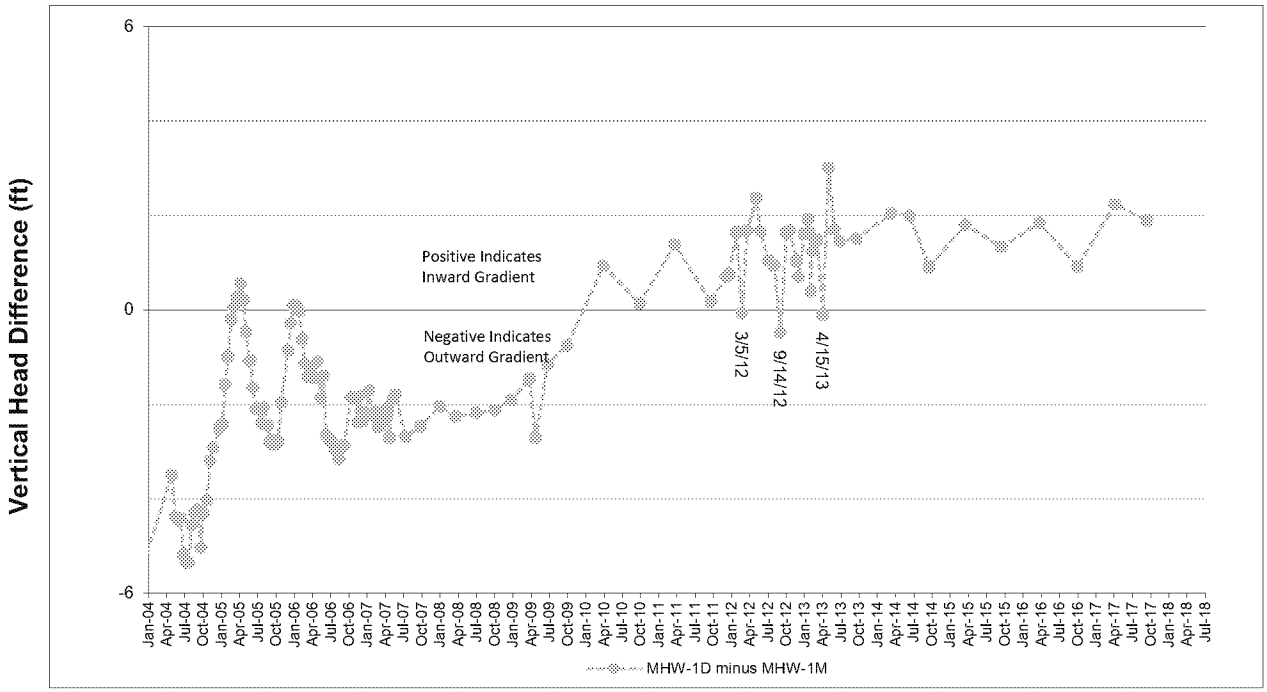
2/28/2018





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - MHW-1M

Golder Associates	Project Number:	013-6052		FIGURE E-9
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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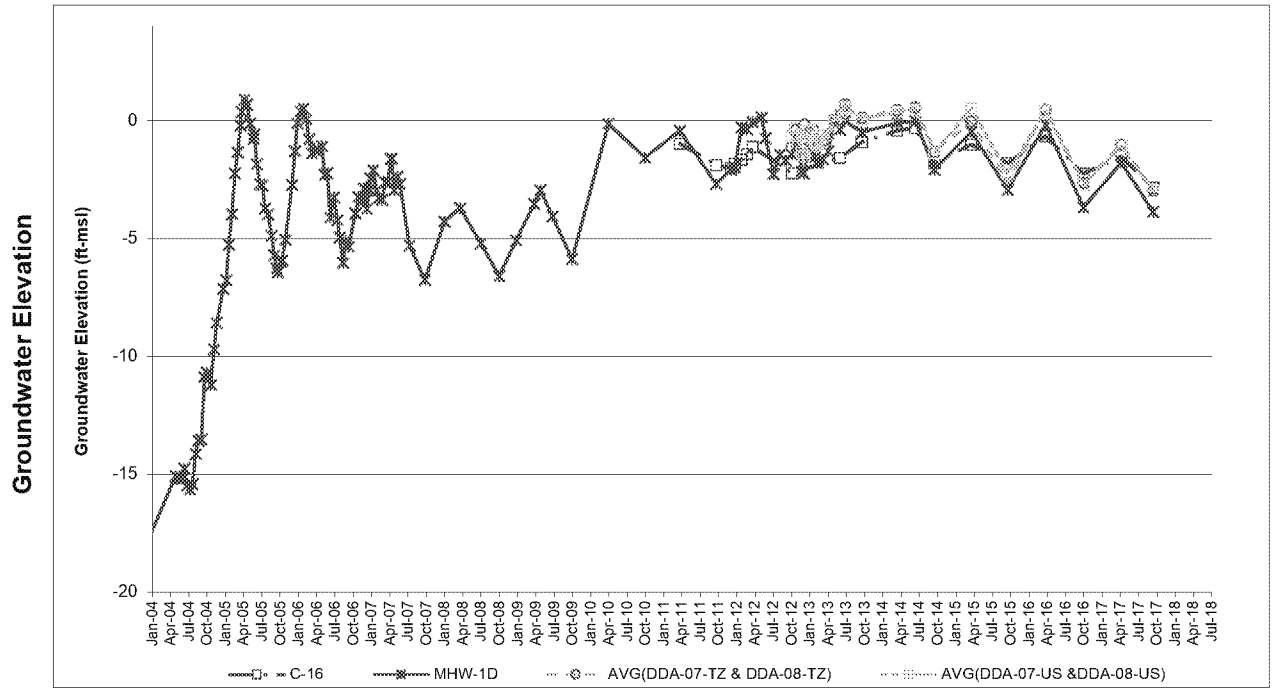

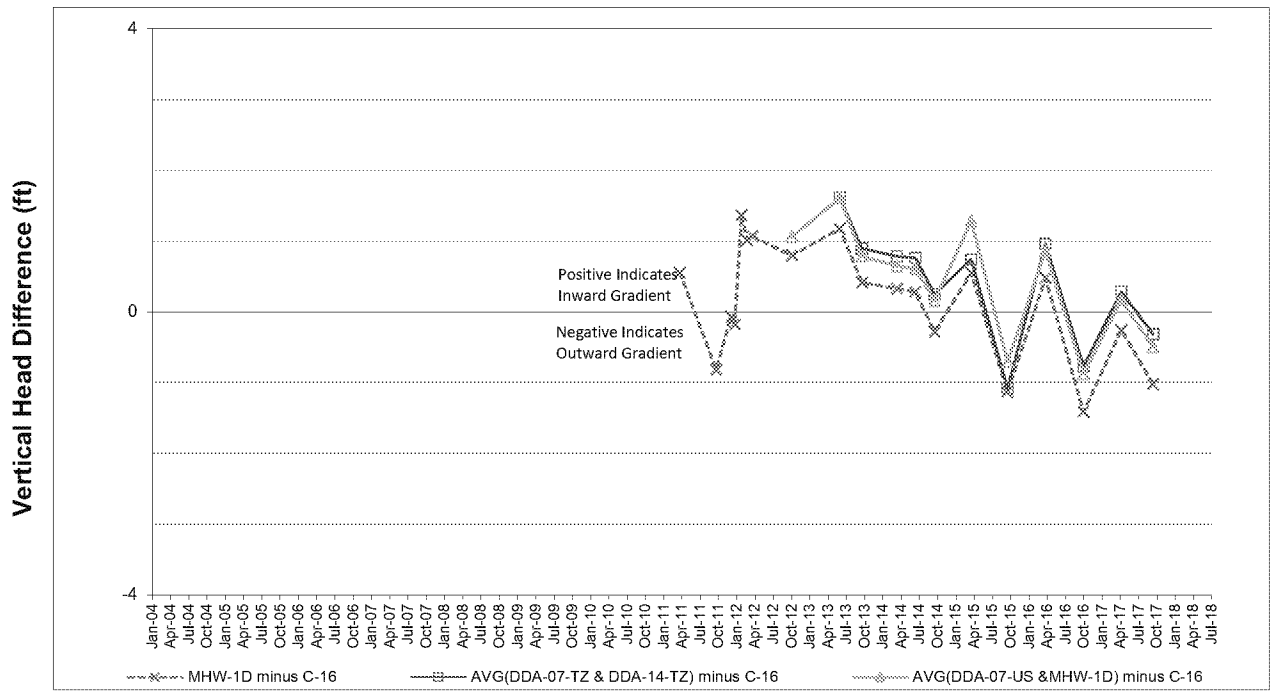

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- The fluctuating vertical head differences calculated for well C-16 since 2011 indicate that well C-16 suggesting that well C-16 is at the periphery of the LFExS influence and that gradients can temporarily reverse when UPA groundwater elevations are low. Well C-16 is located in a portion of the containment area where thick UPCU is present and VOC and SVOC concentrations are low (e.g., VOCs were non-detect and BCEE was detected at 0.053 micrograms per liter [ug/l] in 2008, prior to LFExS startup).

Vertical Head Difference - C-16

Golder Associates	Project Number:	013-6052		FIGURE E-10
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	02/27/18	

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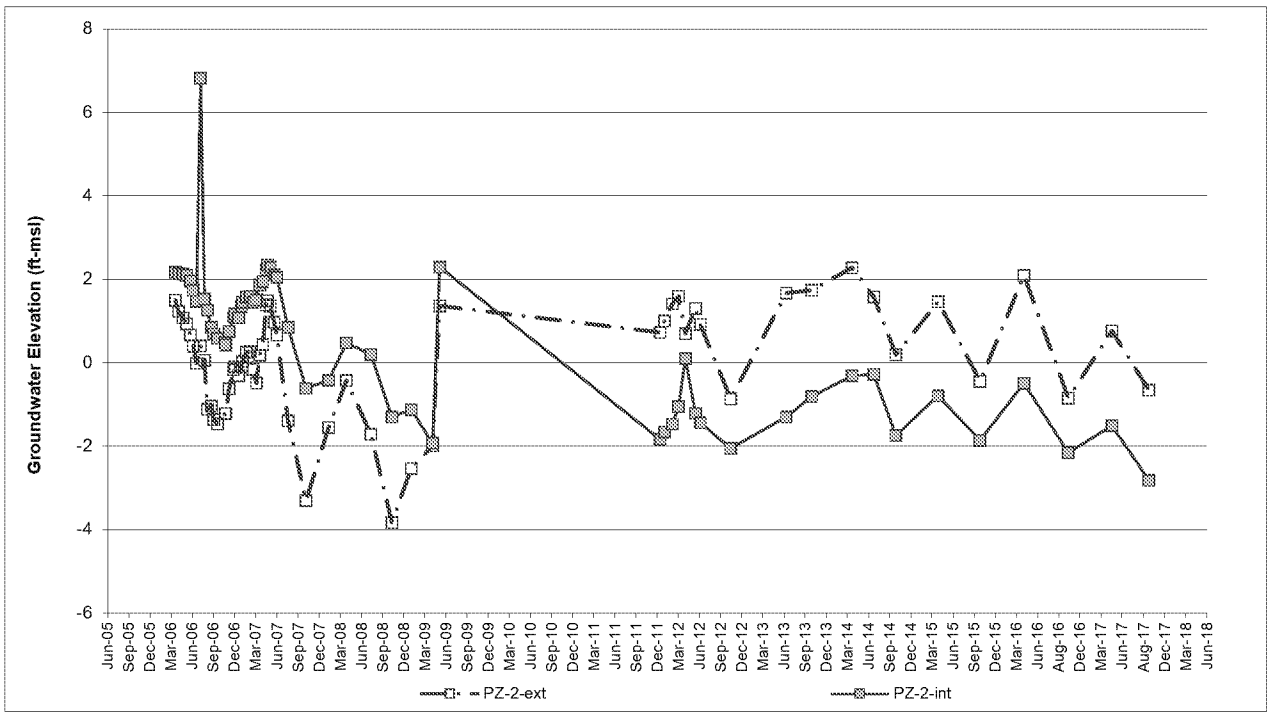
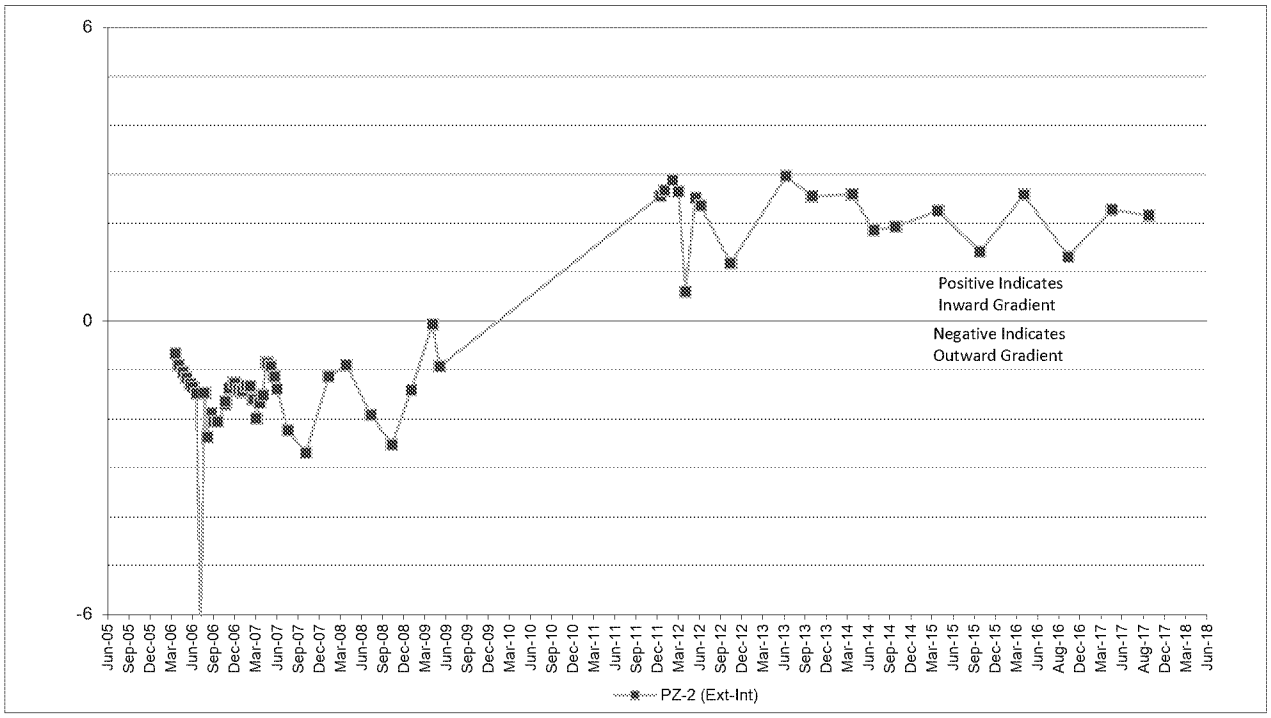
2/28/2018





Notes:
Elevations revised based on December 2012 re-survey
Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Horizontal Head Difference - PZ-2

Golder Associates	Project Number:	013-6052		FIGURE E-11
	Prepared by:	JMR	08/31/17	
	Checked by:	BPC	02/14/18	Notes:
	Reviewed by:	TAM	2/27/2018	

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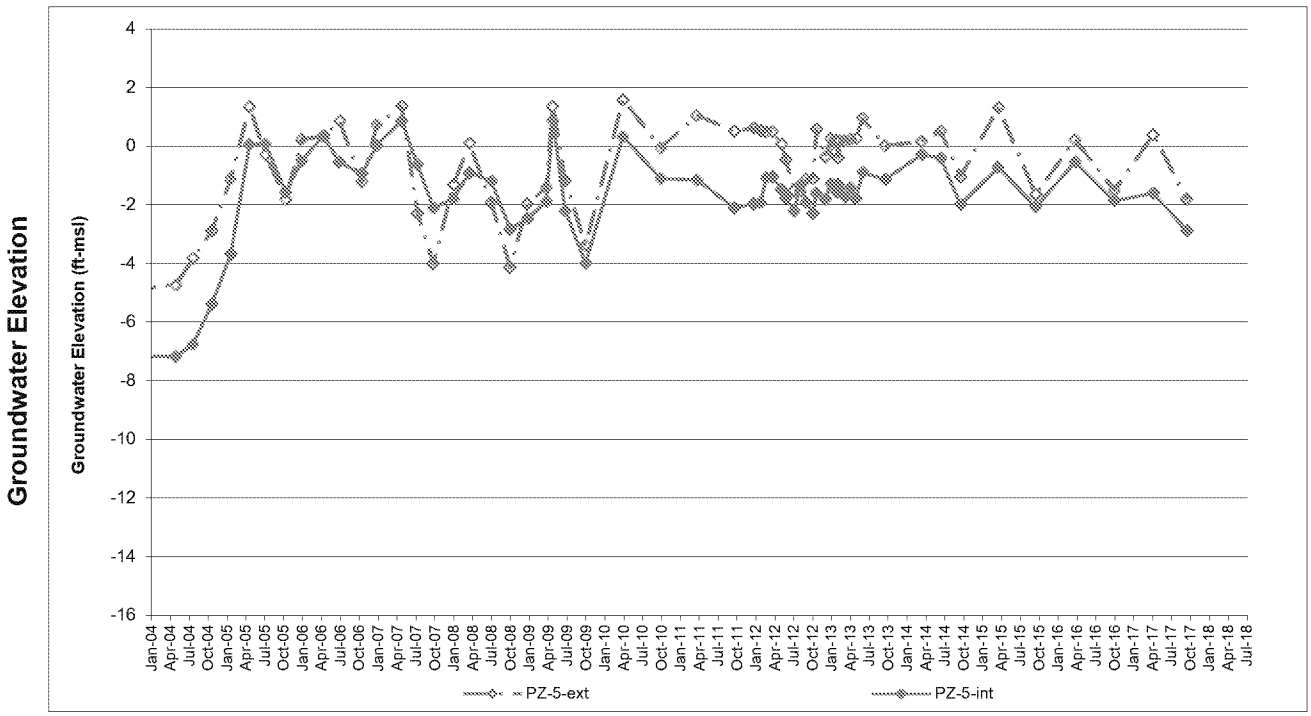

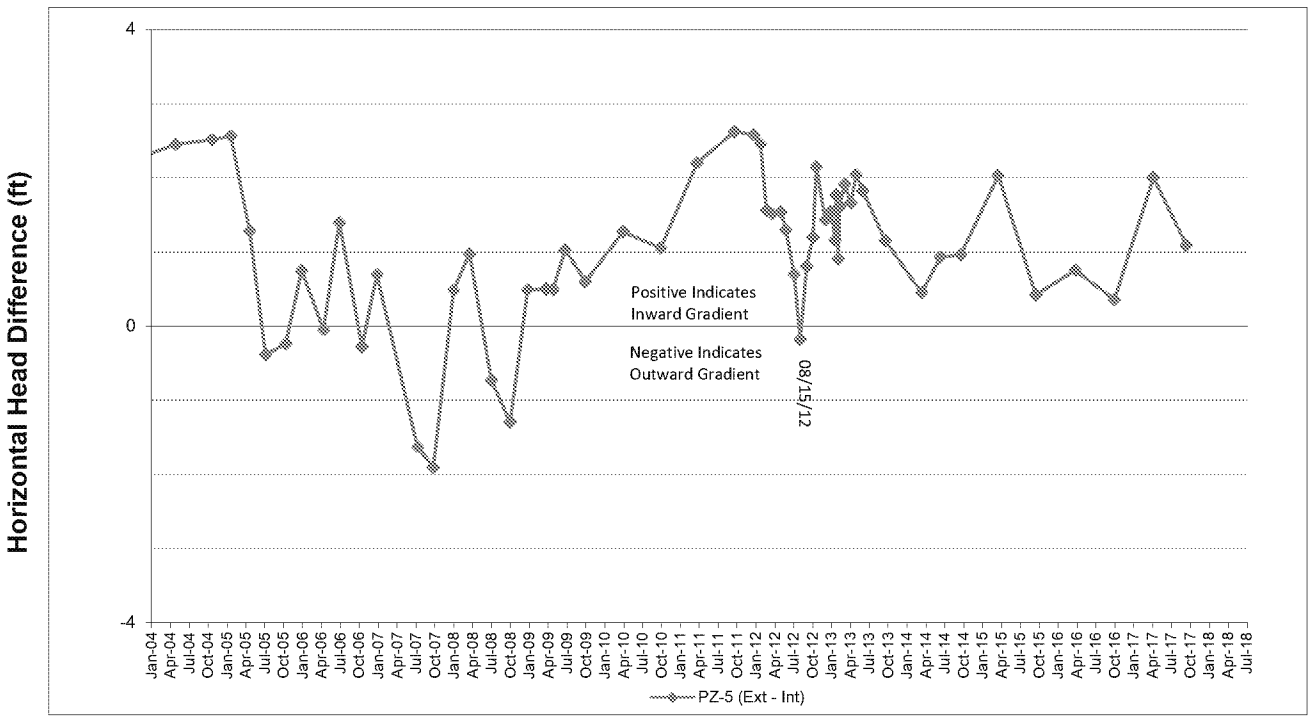

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- August 2012: Decreased extraction from nearby well C-4D due to restricted discharge capacity of the line.

Horizontal Head Difference - PZ-5

Golder Associates	Project Number:	013-6052	FIGURE E-12
	Prepared by:	JMR 08/31/17	
	Checked by:	BPC 02/14/18	Notes:
	Reviewed by:	TAM 2/27/2018	

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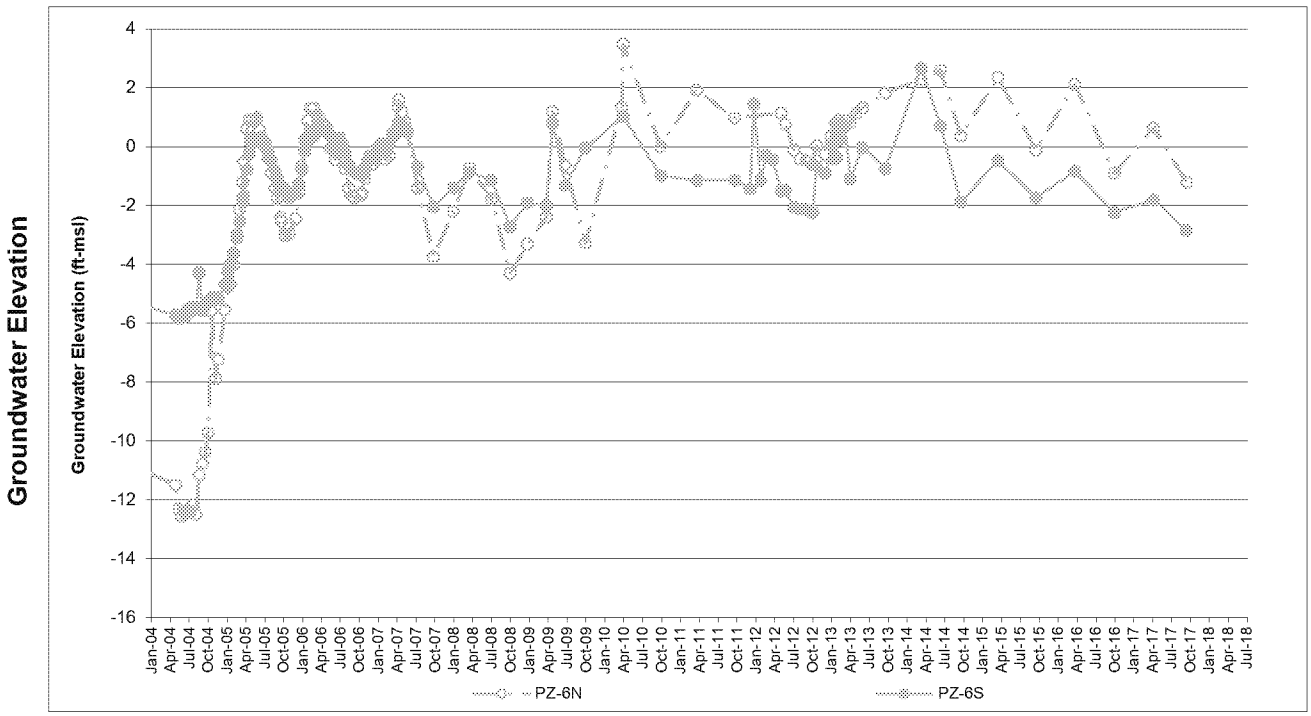

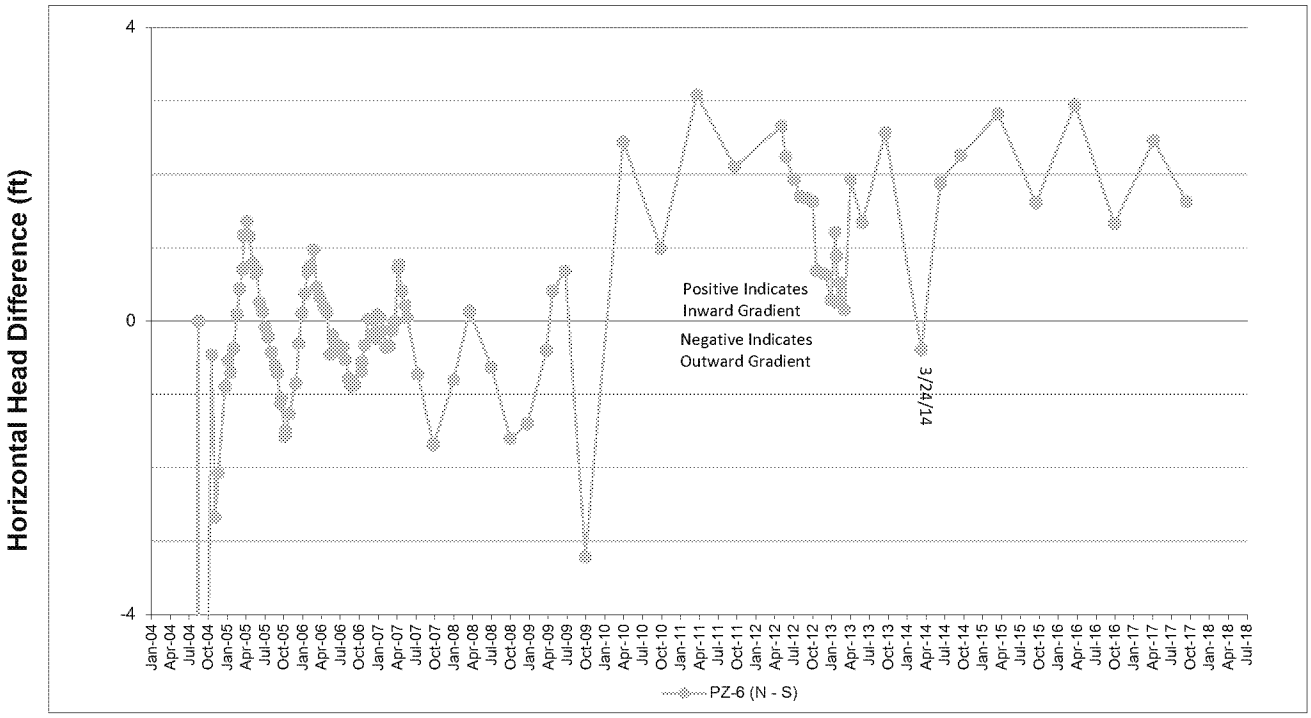

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- March 24, 2014: Decreased extraction from nearby well C-30 due to restricted discharge capacity of the line.

Horizontal Head Difference - PZ-6

Golder Associates	Project Number:	013-6052	FIGURE E-13
	Prepared by:	JMR 08/31/17	
	Checked by:	BPC 02/14/18	Notes:
	Reviewed by:	TAM 2/27/2018	

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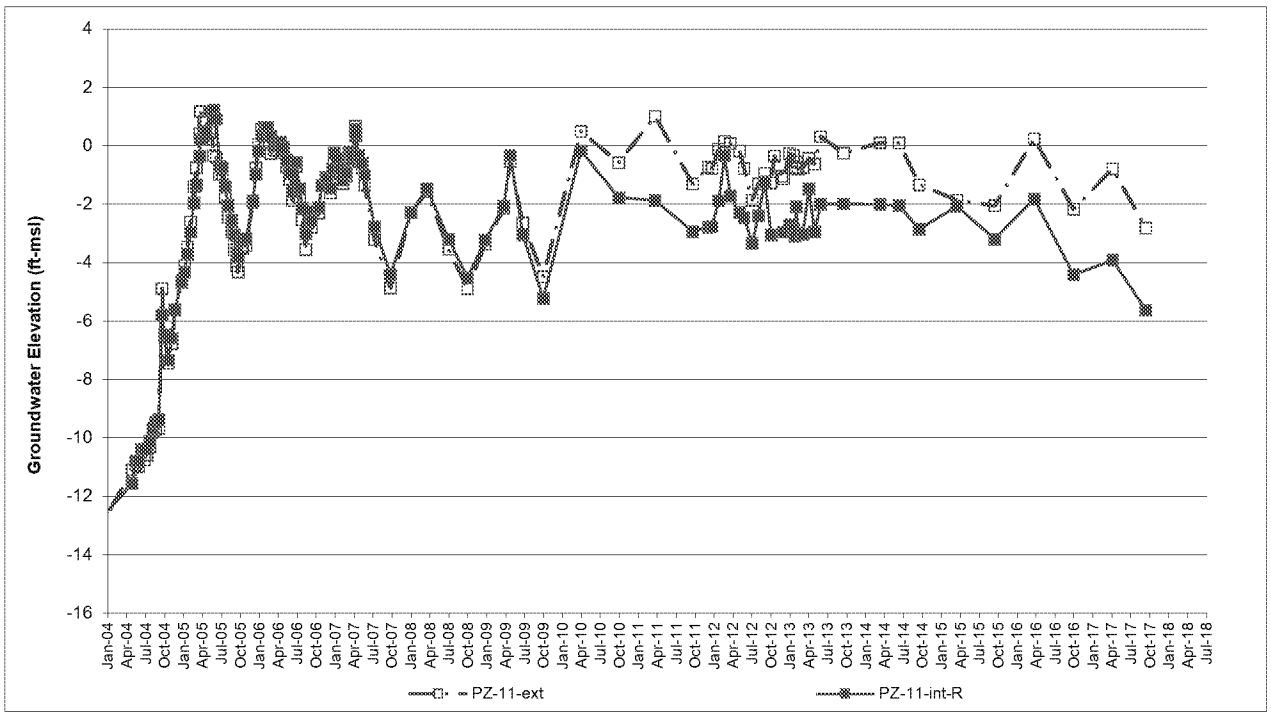

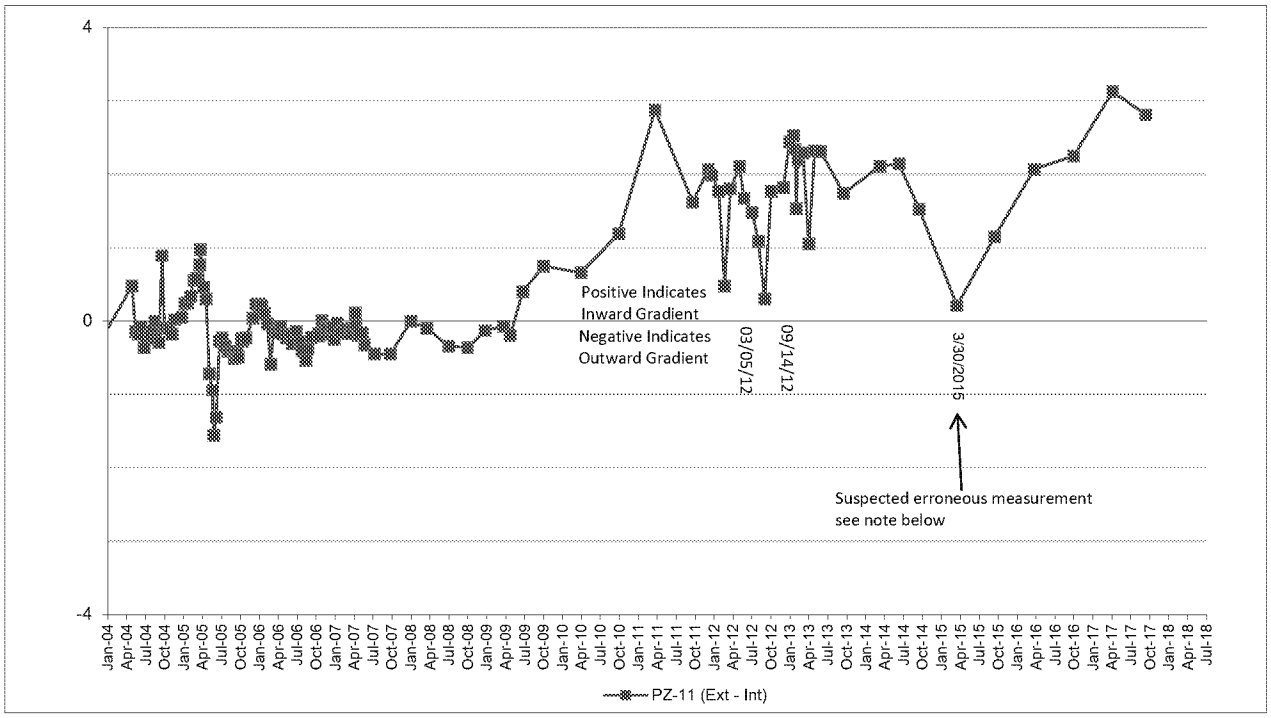

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- March 30, 2015 - Suspected erroneous measurement: the groundwater elevation in well PZ-11-EXT is typically less than one foot different from nearby well GA-101. In March 2015, the calculated groundwater elevation in PZ-11-EXT (-1.81 ft-msl) was more than two feet lower than well GA-101 (+0.63 ft-msl).

Horizontal Head Difference - PZ-11

Golder Associates	Project Number:	013-6052	FIGURE E-14
	Prepared by:	JMR 08/31/17	
	Checked by:	BPC 02/14/18	Notes:
	Reviewed by:	TAM 2/27/2018	

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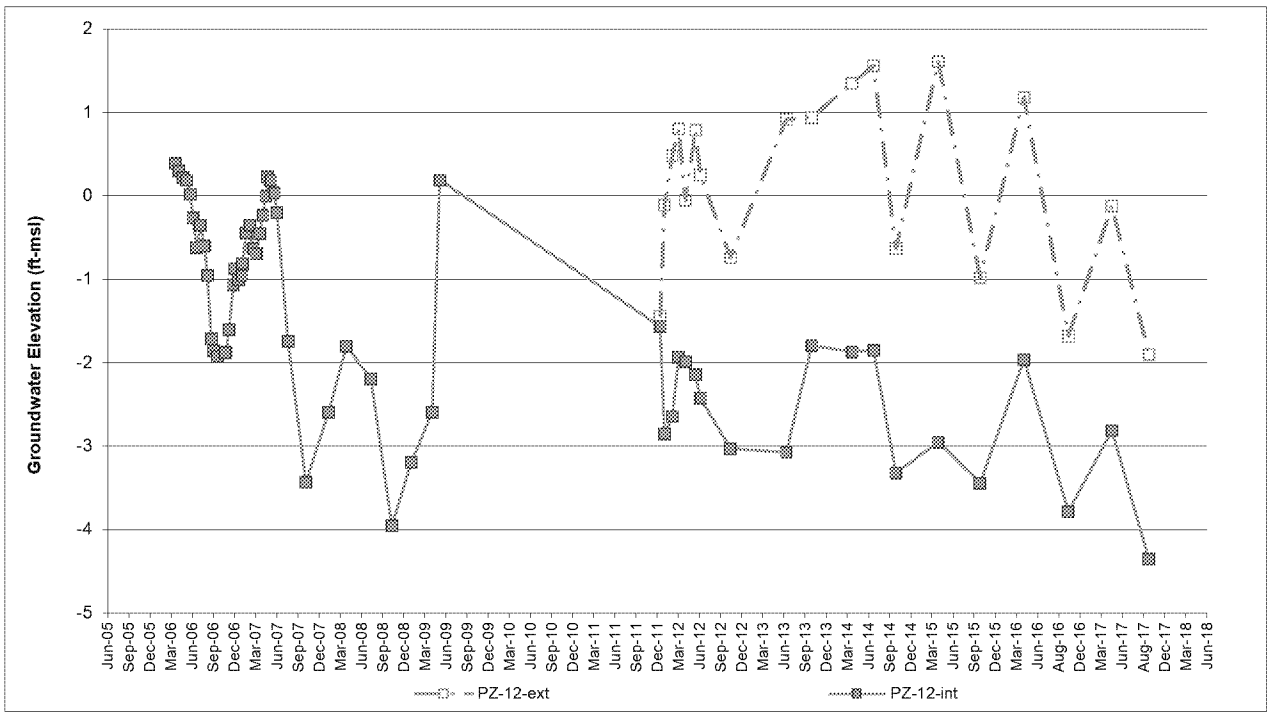

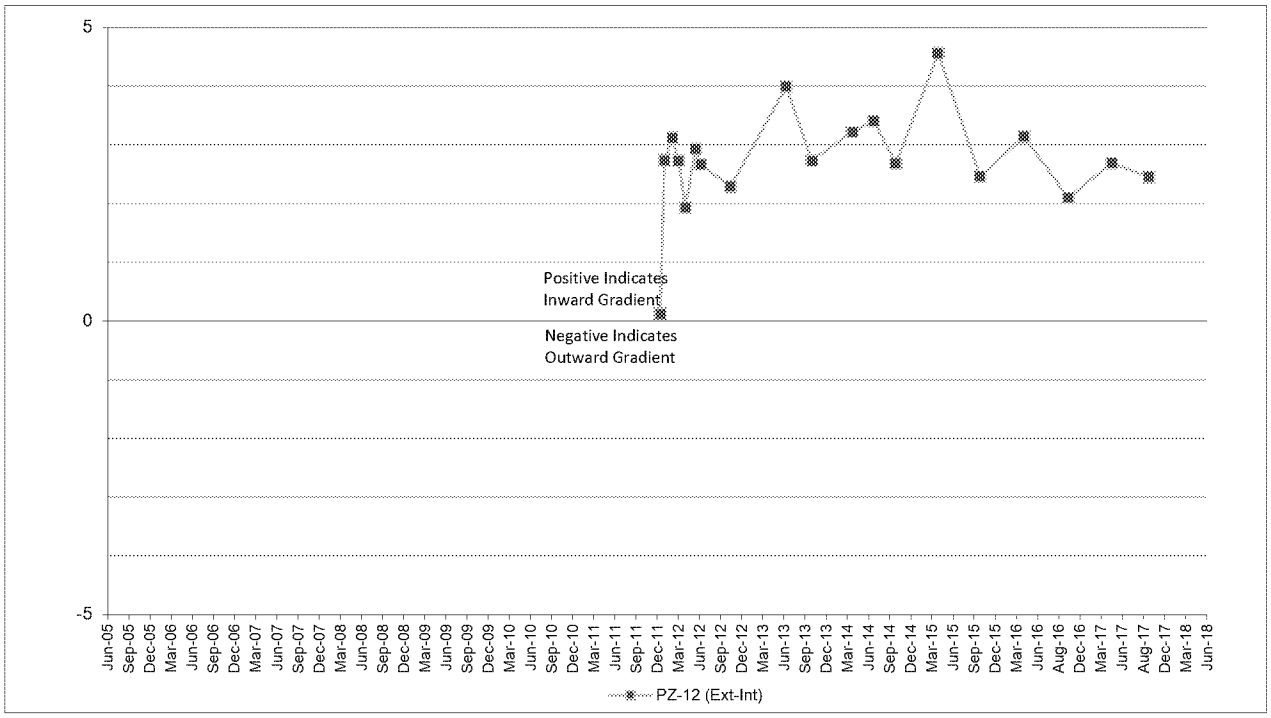

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Horizontal Head Difference - PZ-12

Golder Associates	Project Number:	013-6052	FIGURE E-15
	Prepared by:	JMR 08/31/17	
	Checked by:	BPC 02/14/18	Notes:
	Reviewed by:	TAM 2/27/2018	

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APPENDIX F
ANALYTICAL CHEMISTRY TREND PLOTS

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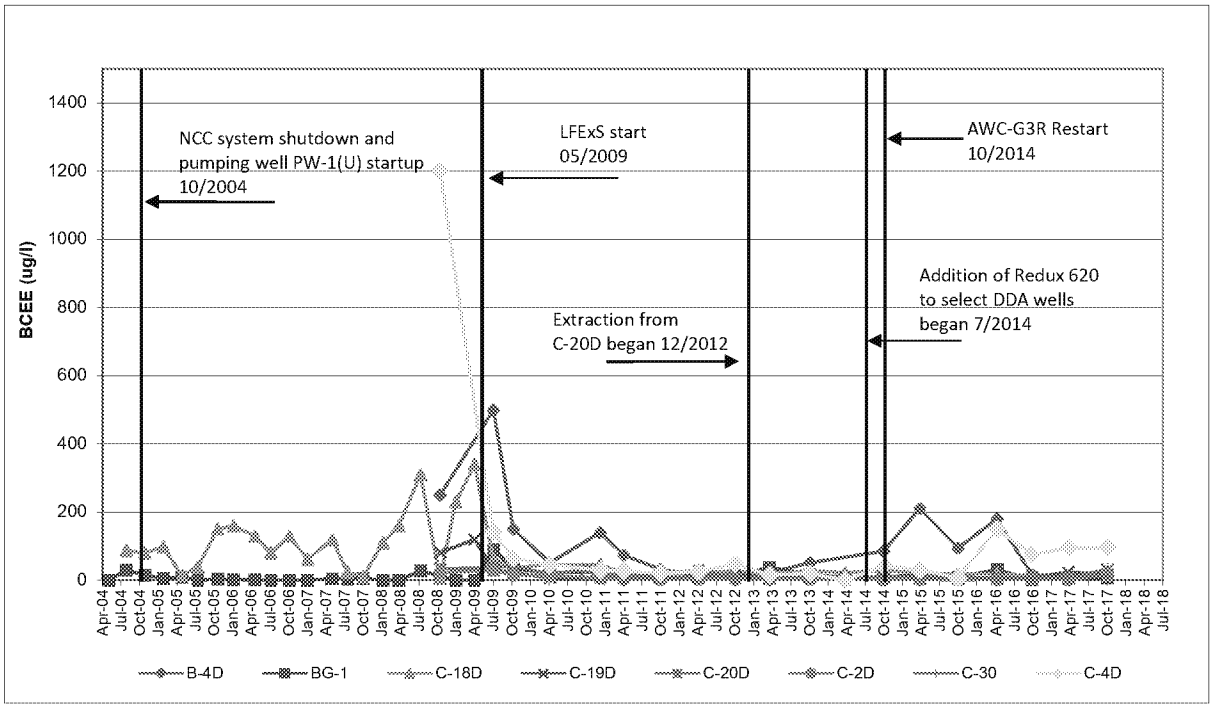

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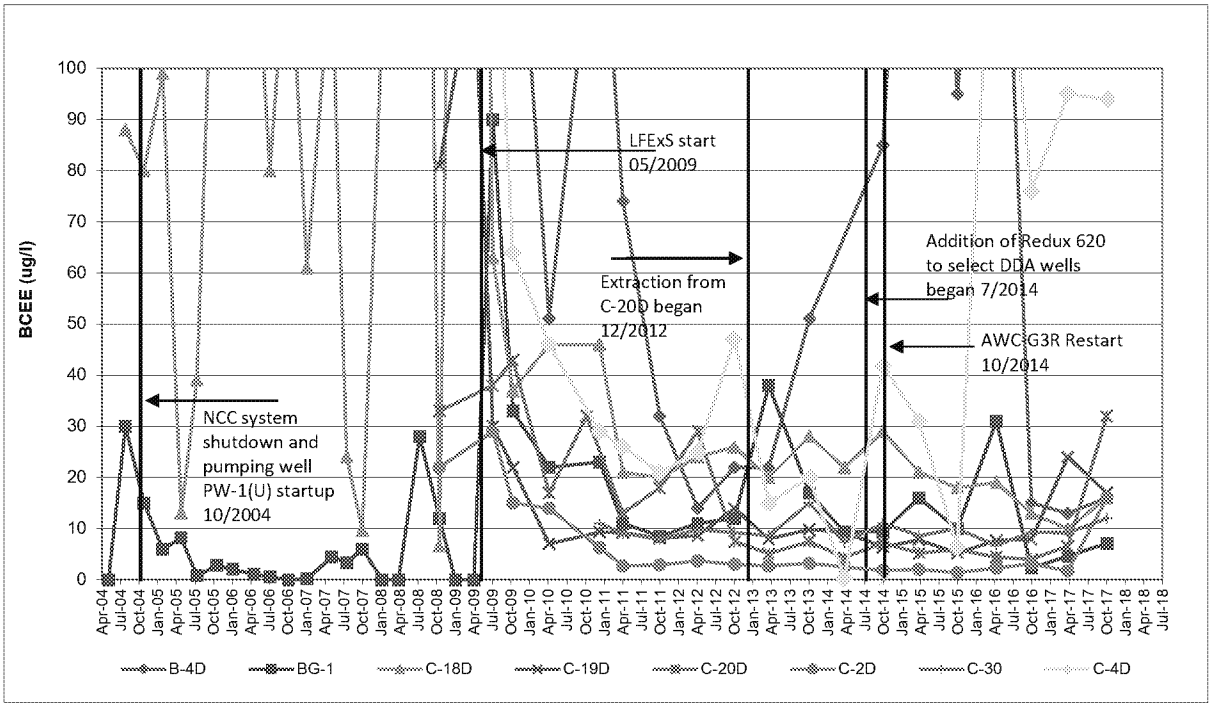

BCEE - DDA Groundwater - LFExS Extraction Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-1A
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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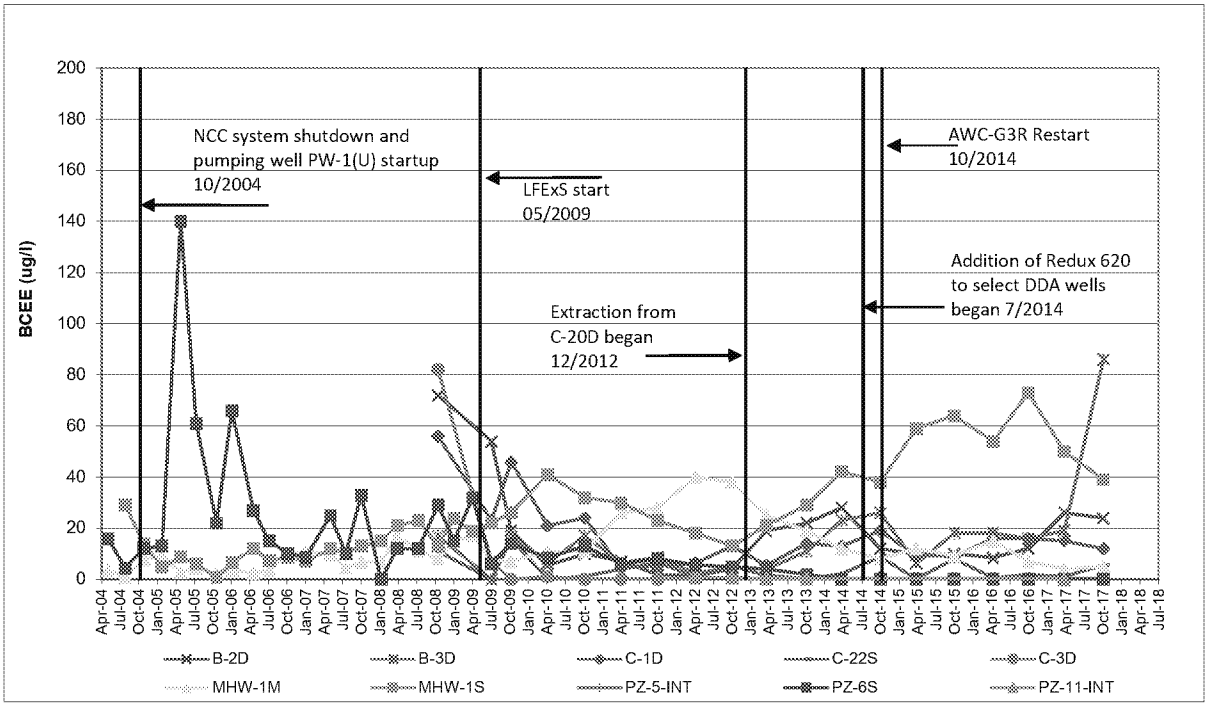

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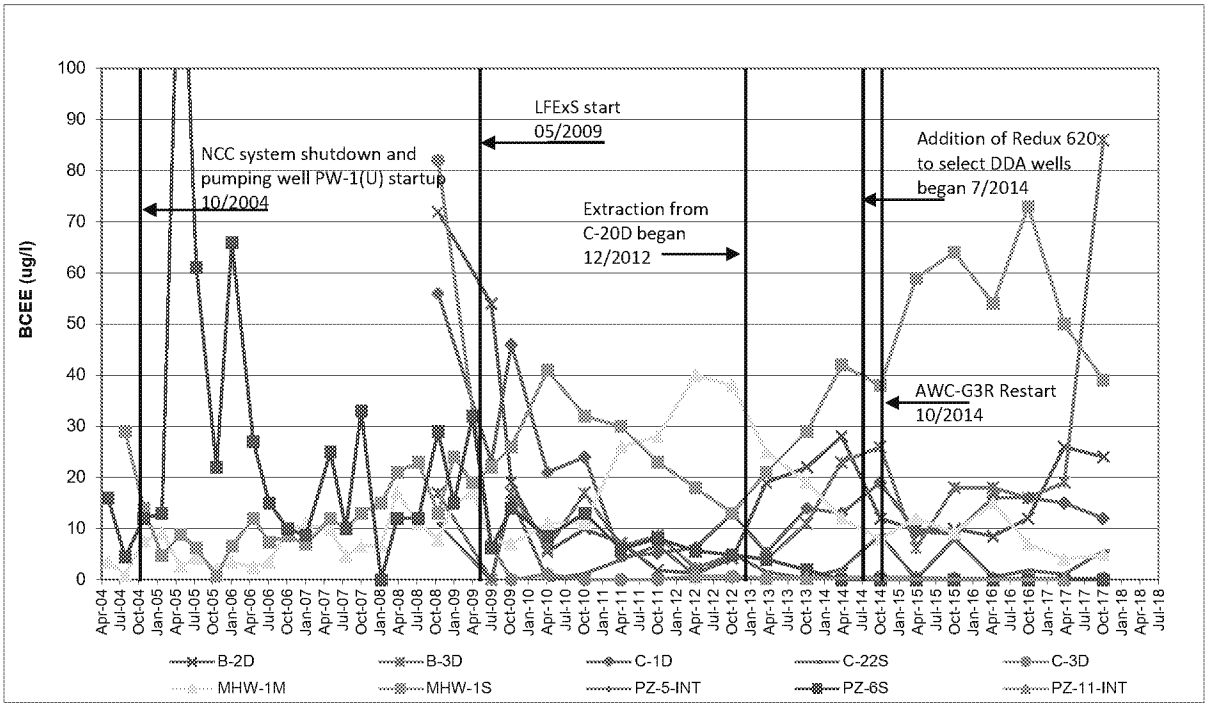

BCEE - DDA Groundwater - LFExS Monitoring Well Trends

Golder Associates

Project Number:	013-6052		FIGURE F-2A
Prepared by:	TGB	11/9/2017	
Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/27/2018	

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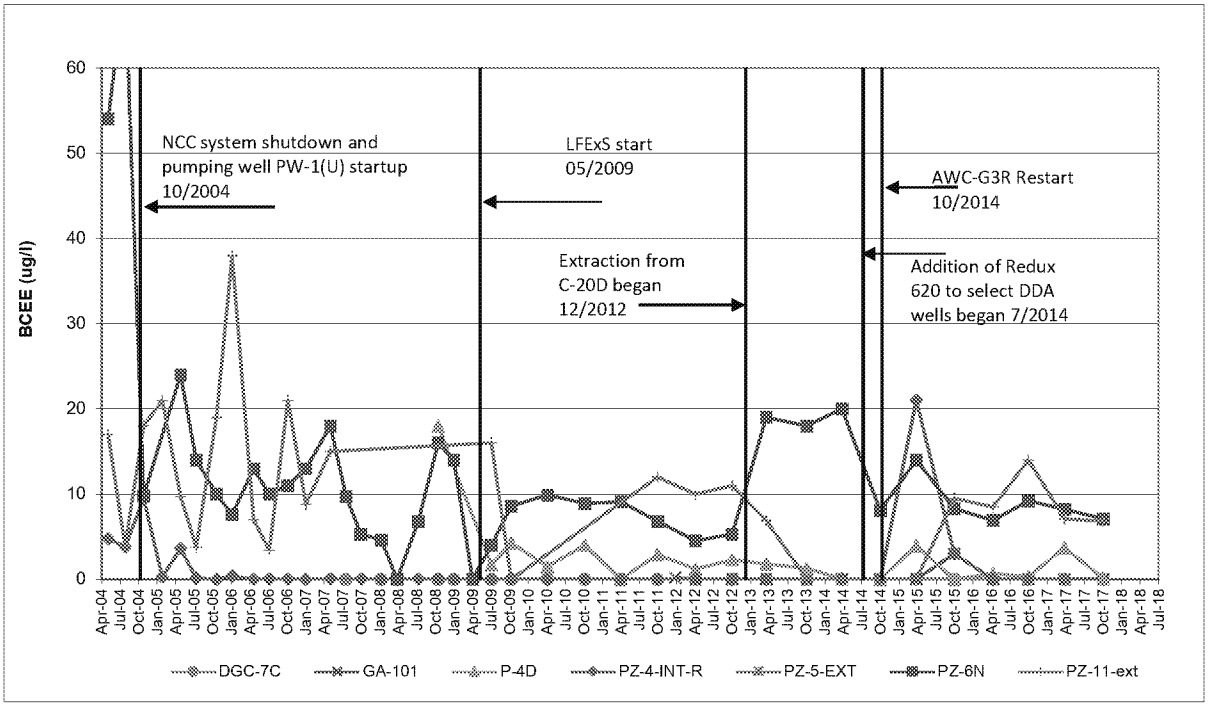

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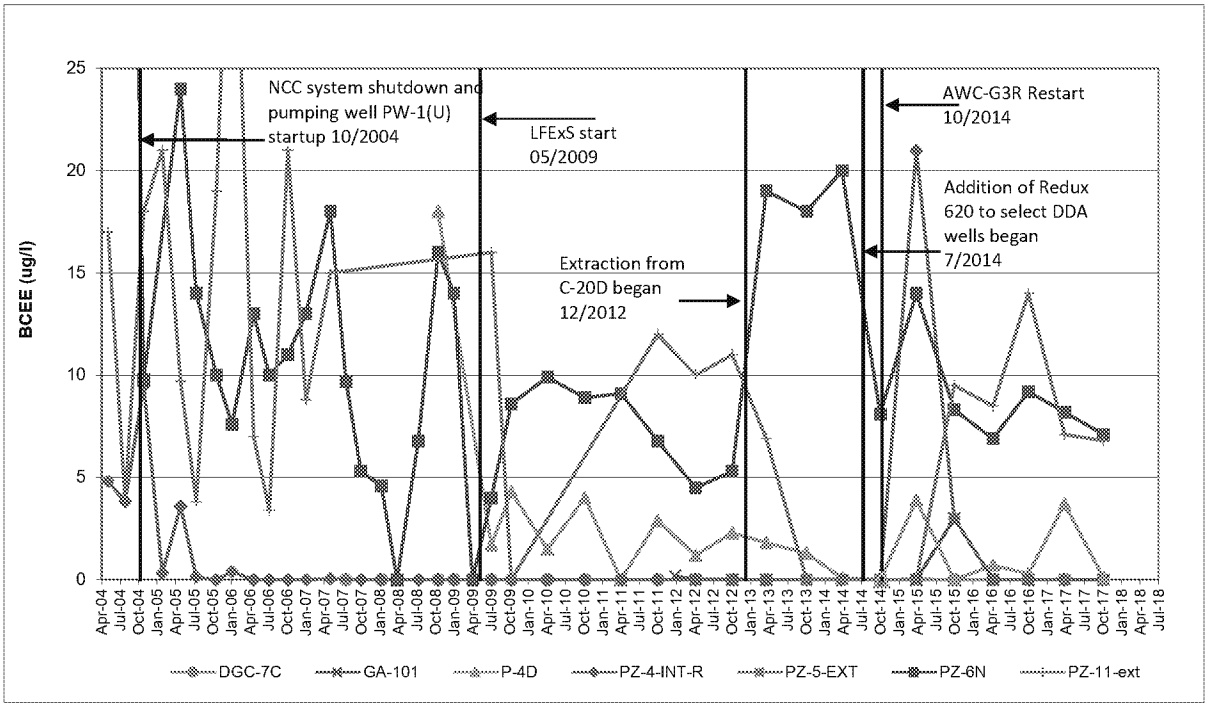

BCEE - DDA Monitoring Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-3A
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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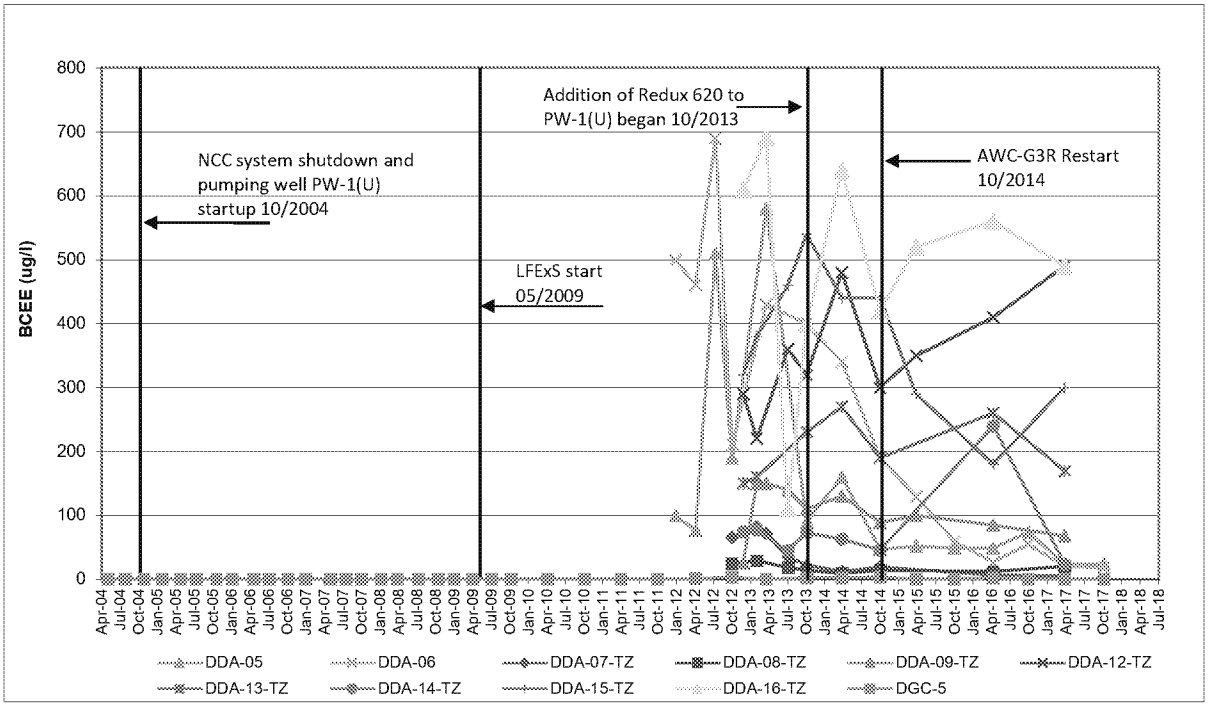

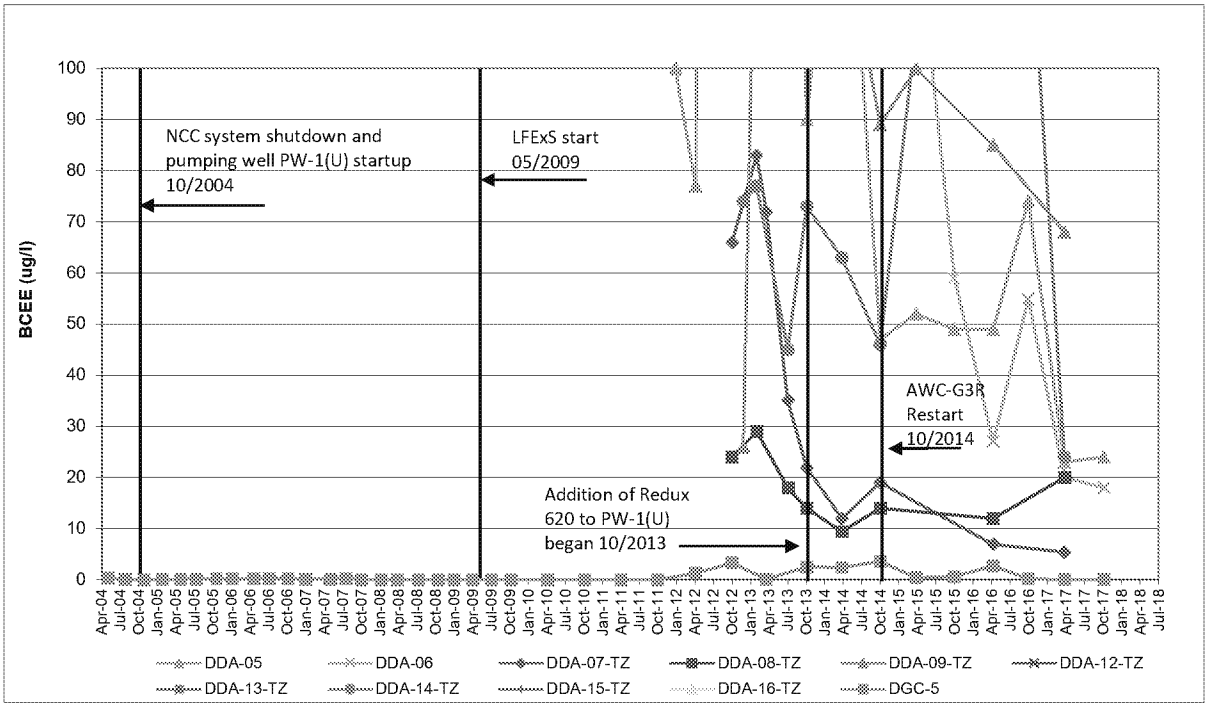

BCEE - DDA to Well PW-1(U) UPCU Transition Zone Trends

Golder Associates	Project Number:	013-6052	FIGURE F-4A
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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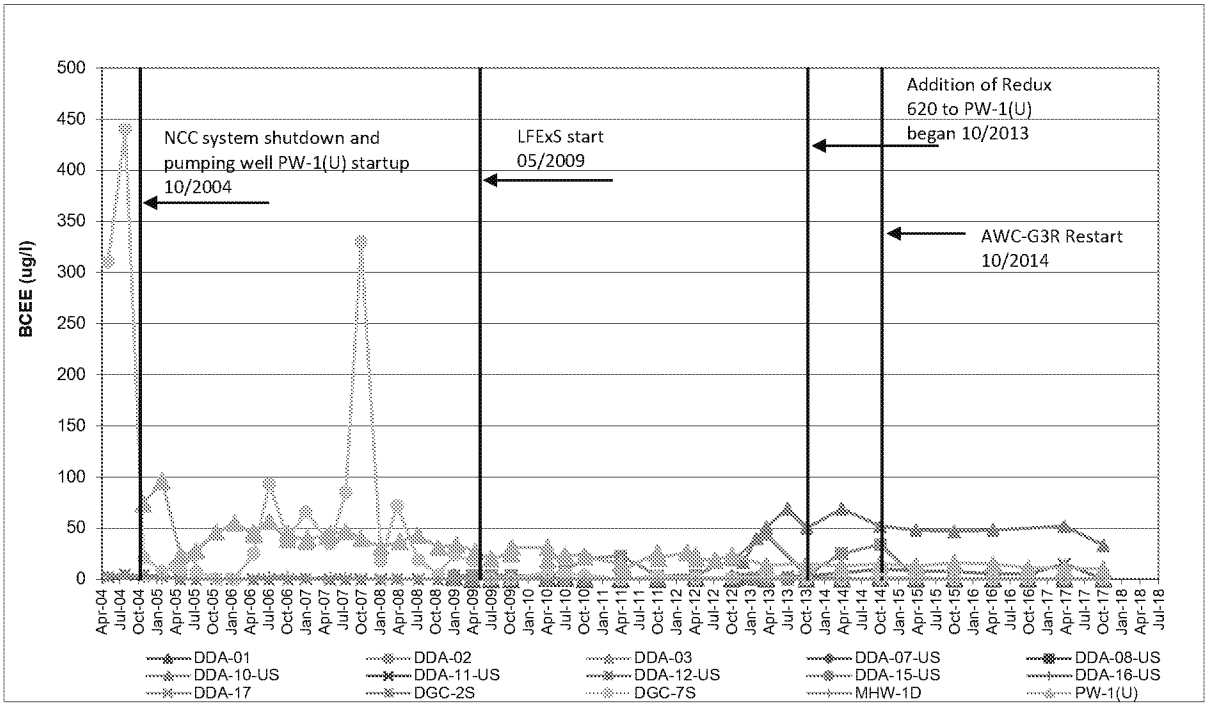

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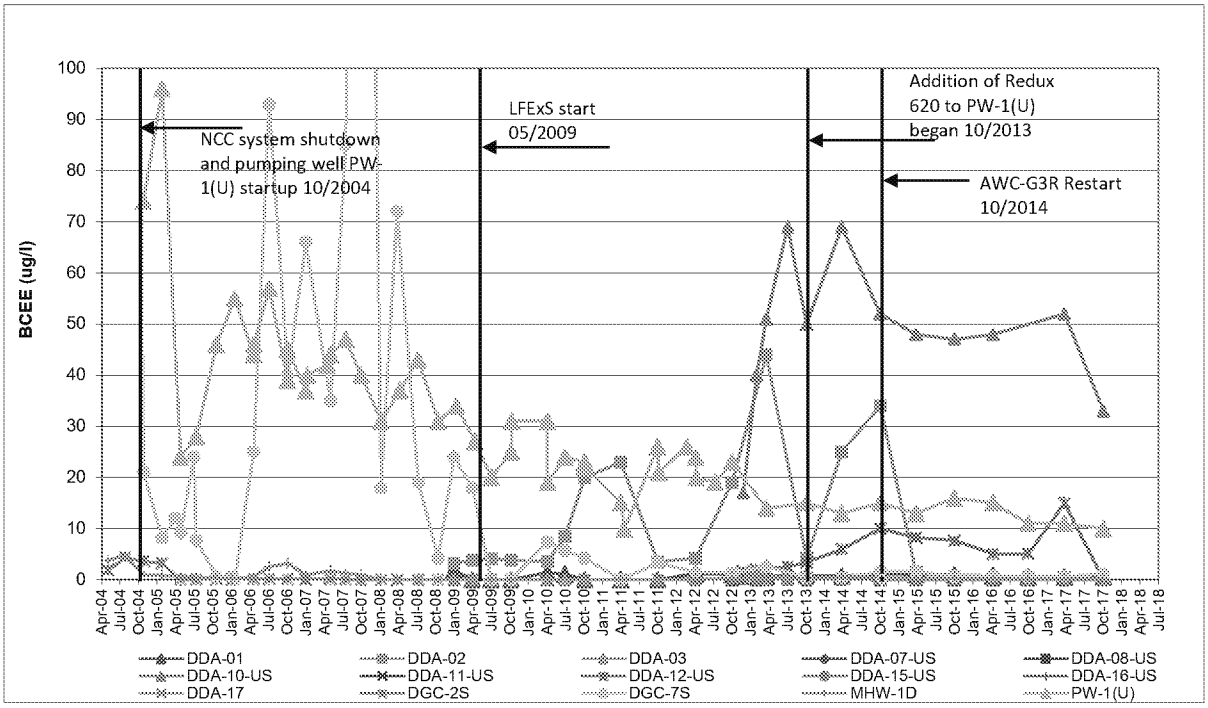

BCEE - DDA to Well PW-1(U) UPA Trends

Golder Associates	Project Number:	013-6052	FIGURE F-5A
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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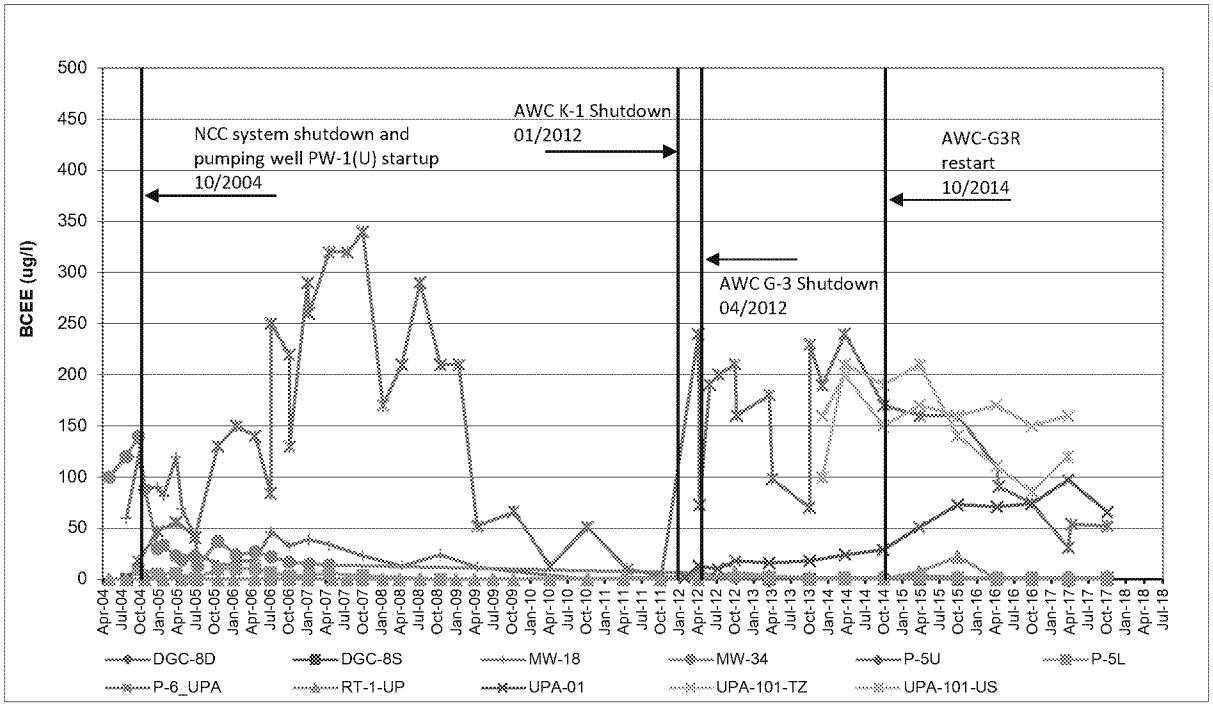

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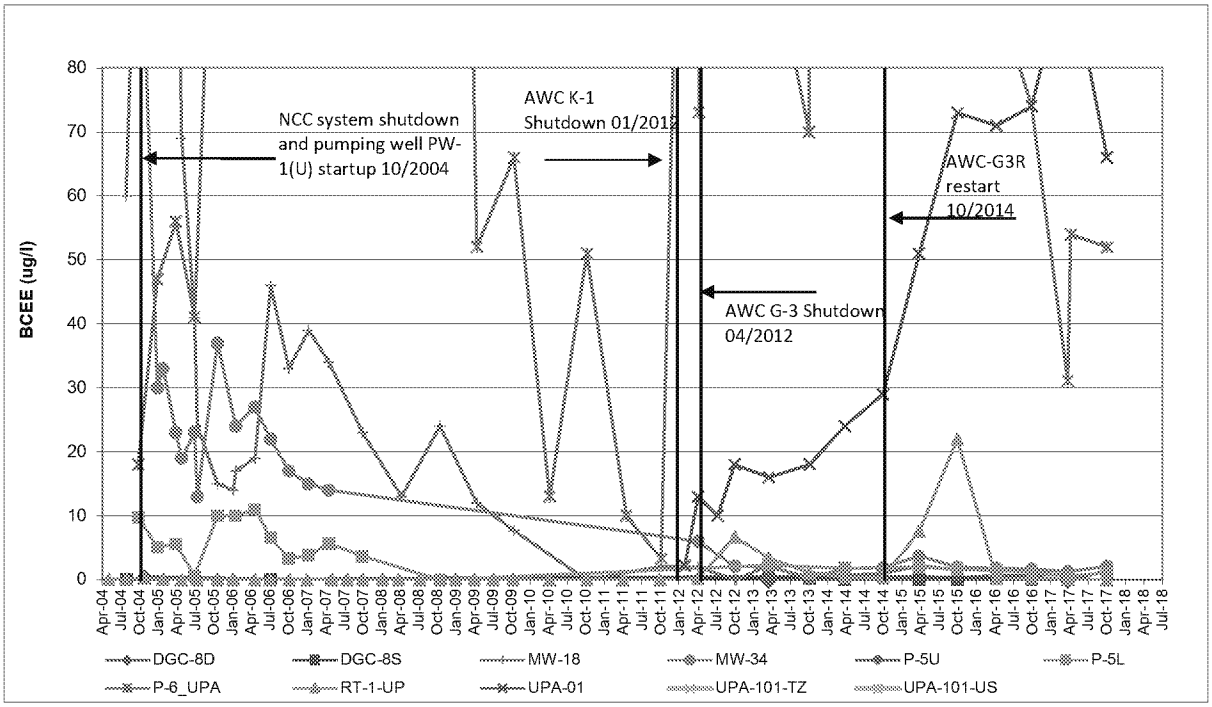

BCEE - UPA Downgradient of Well PW-1(U) Trends - Well P-6 Area

Golder Associates

Project Number:	013-6052		FIGURE F-6A
Prepared by:	TGB	11/9/2017	
Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/27/2018	

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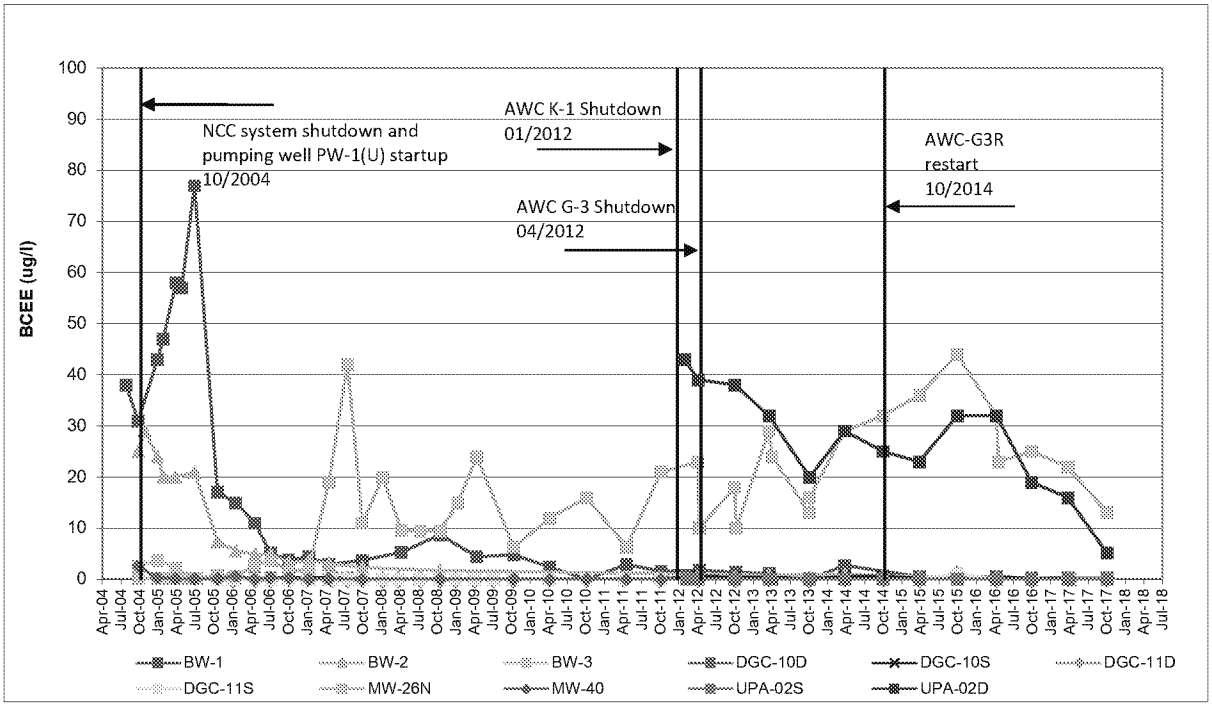

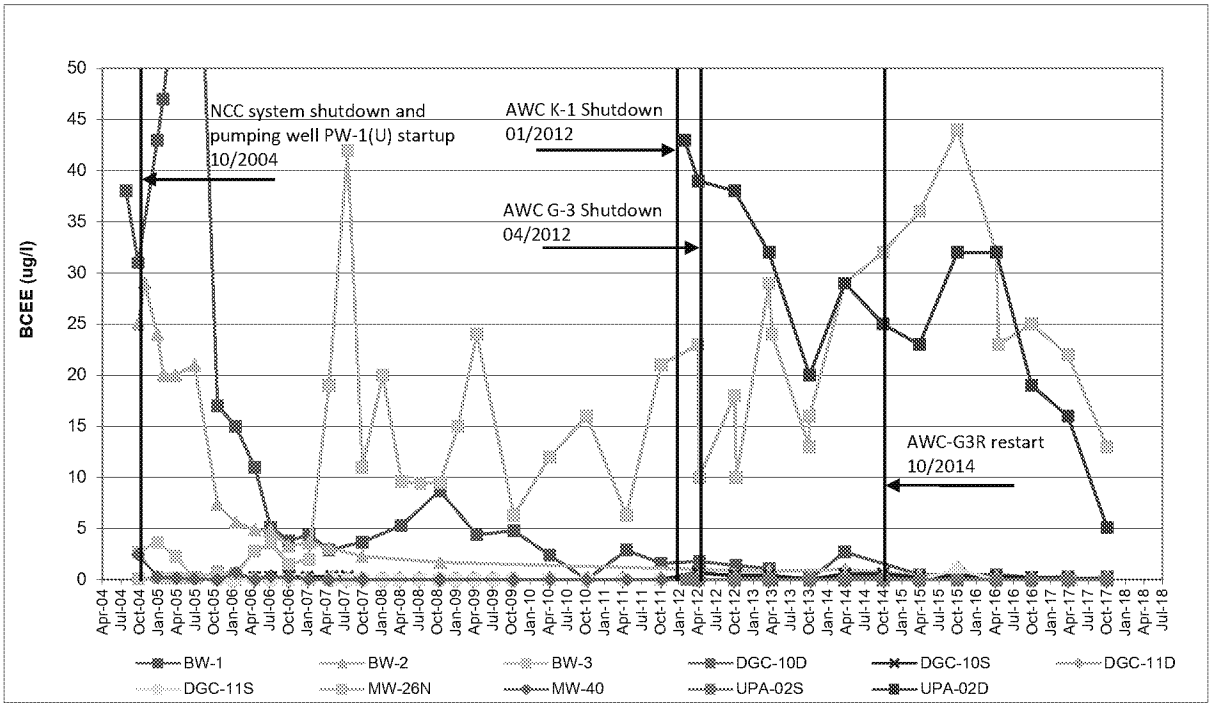

BCEE - UPA Downgradient of Well PW-1(U) Trends

Golder Associates

Project Number:	013-6052		FIGURE F-7A
Prepared by:	TGB	11/9/2017	
Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/27/2018	

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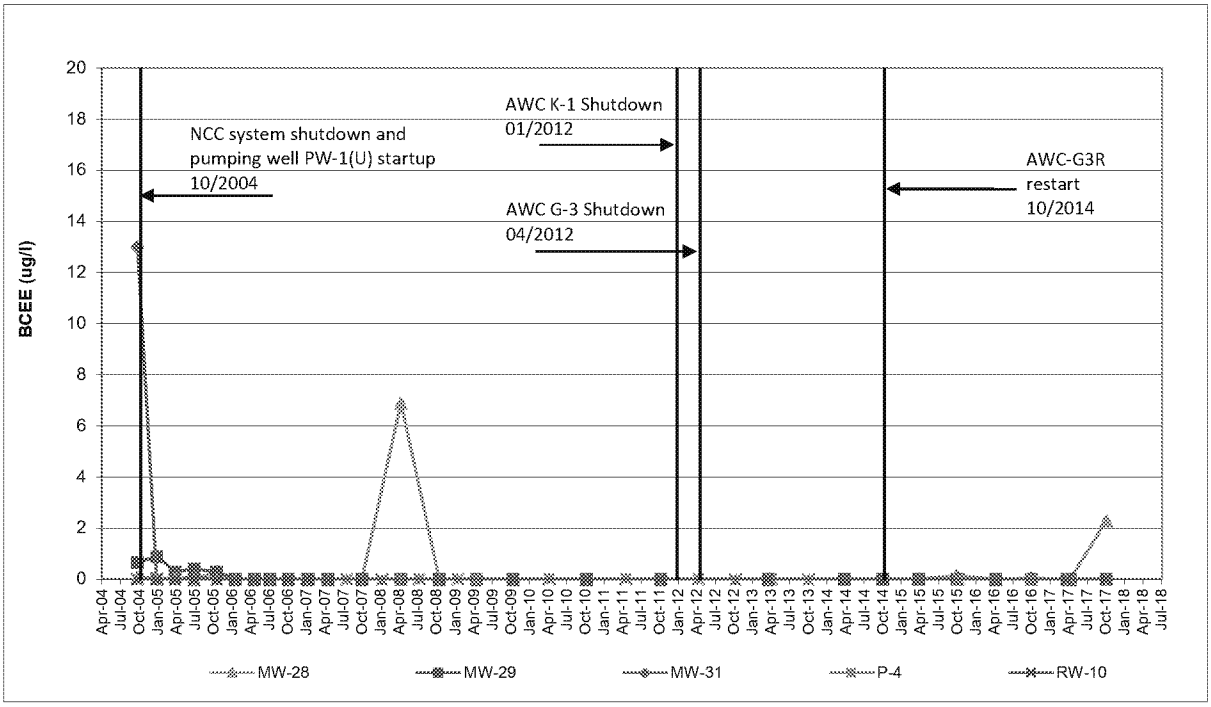

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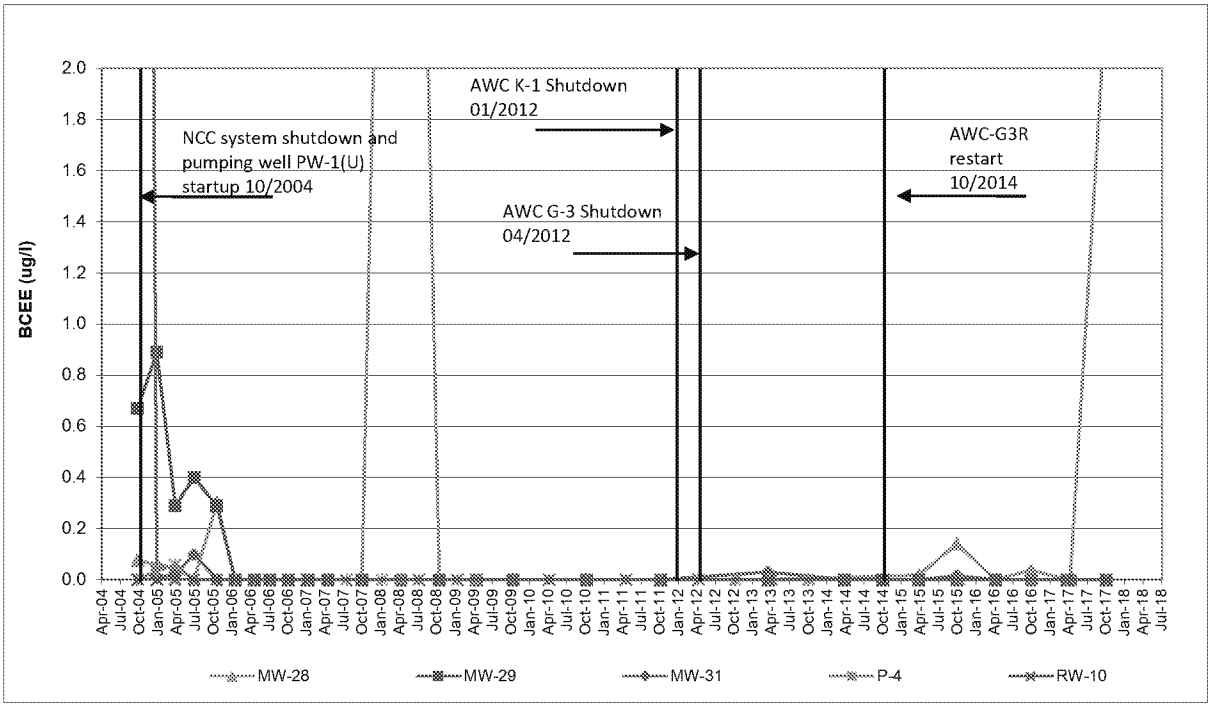

BCEE - UPA Downgradient - Western Edge NCC Well Trends

Golder Associates

Project Number:	013-6052		FIGURE F-8A
Prepared by:	TGB	11/9/2017	
Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/27/2018	

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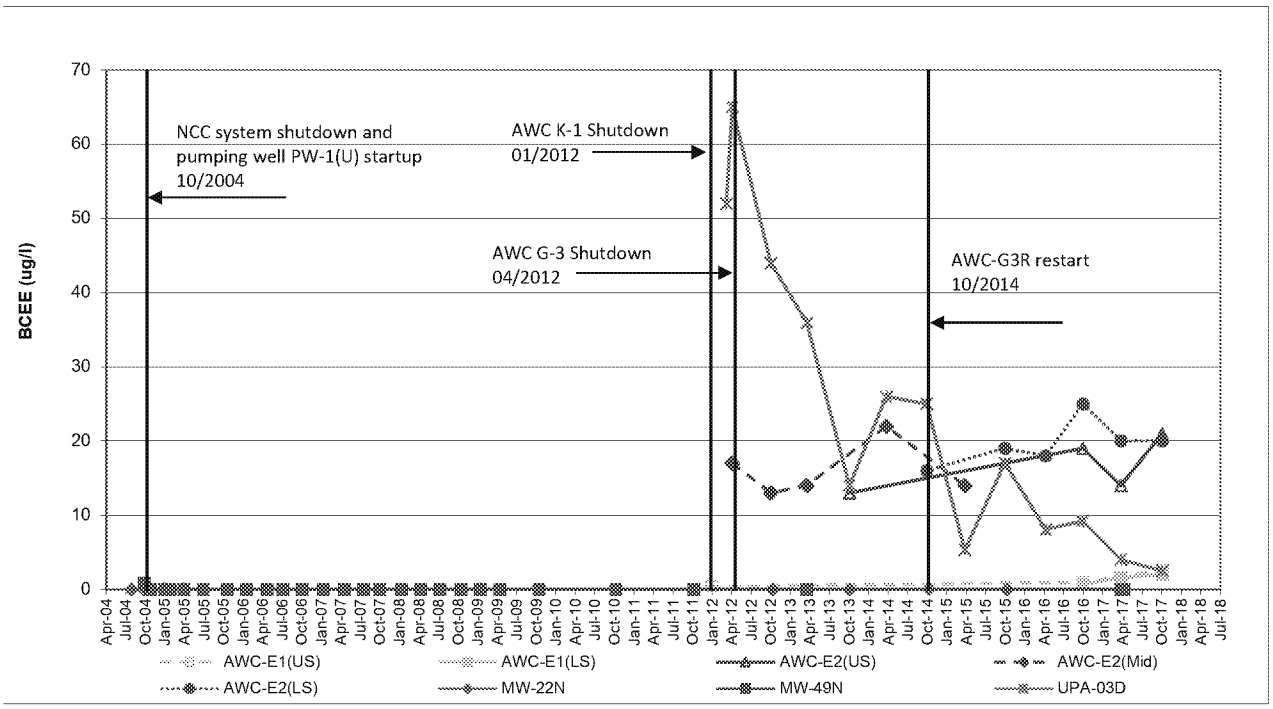

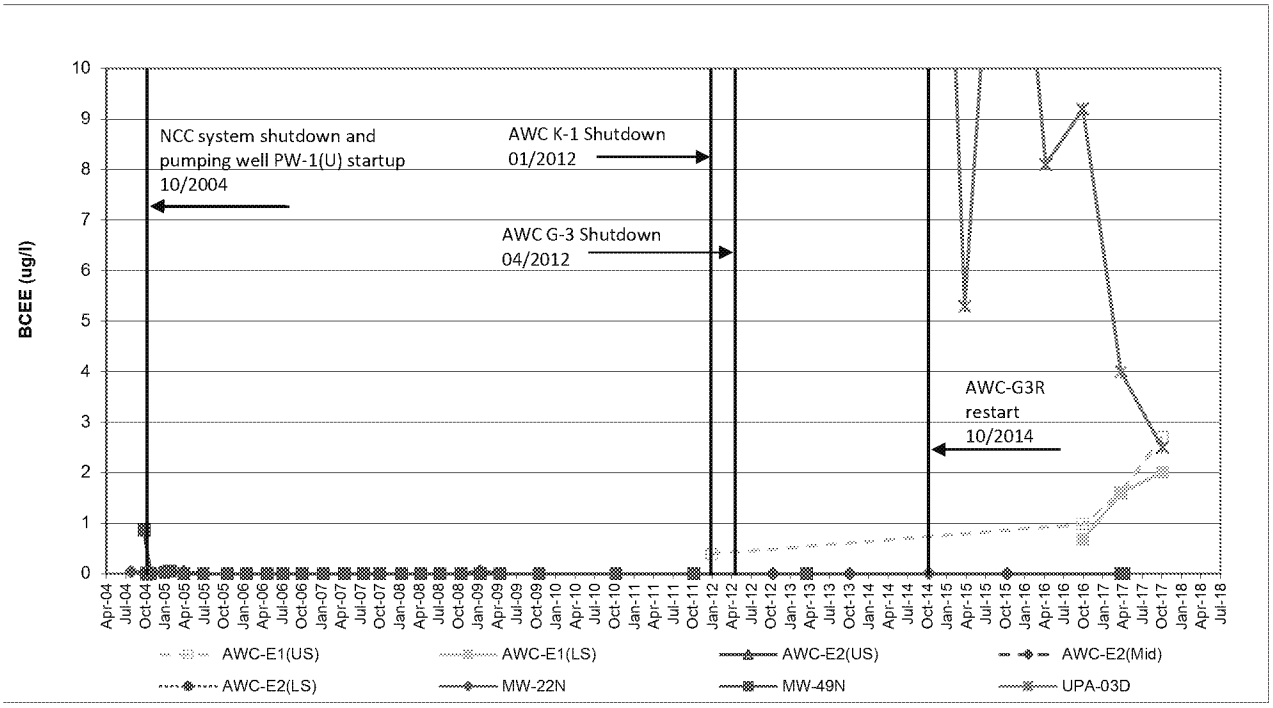

BCEE - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052		FIGURE F-9A
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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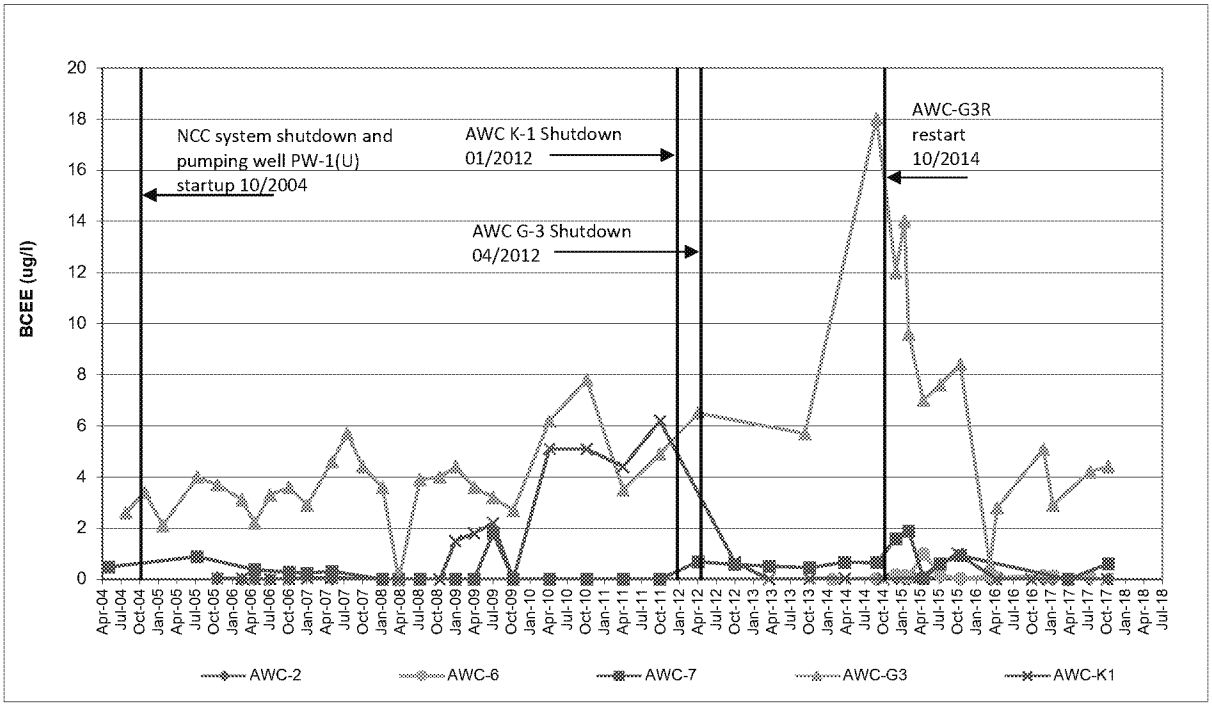

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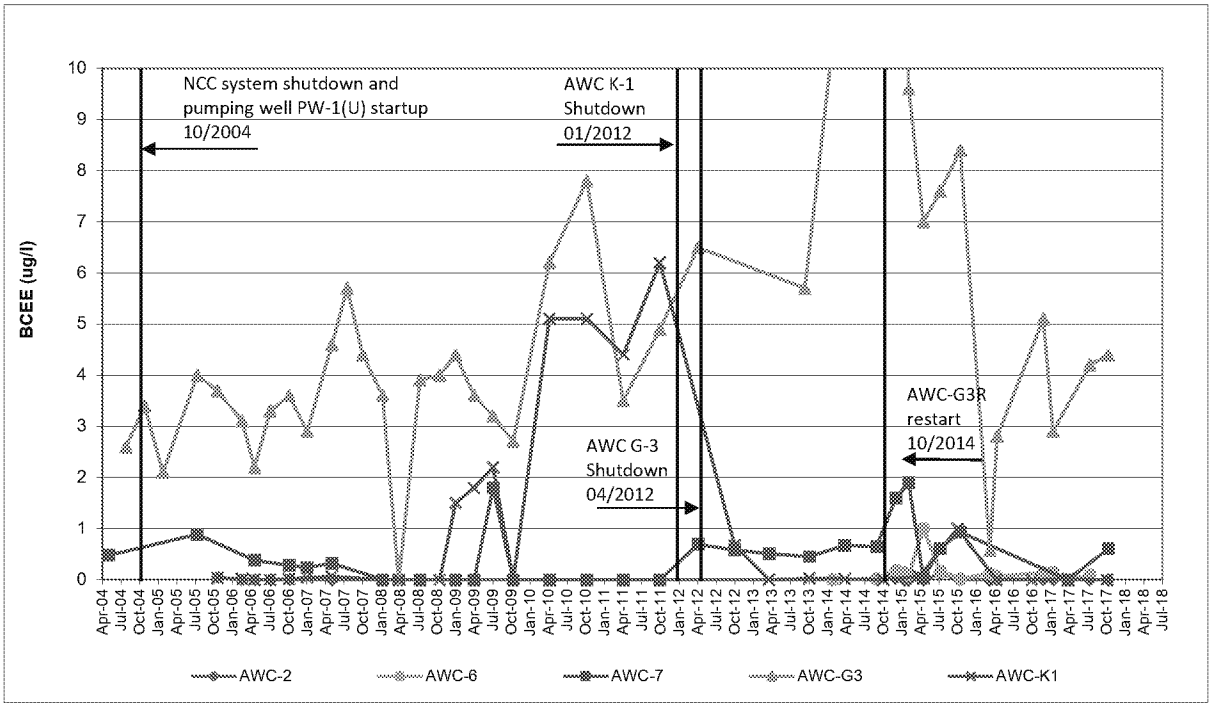

BCEE - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-10A
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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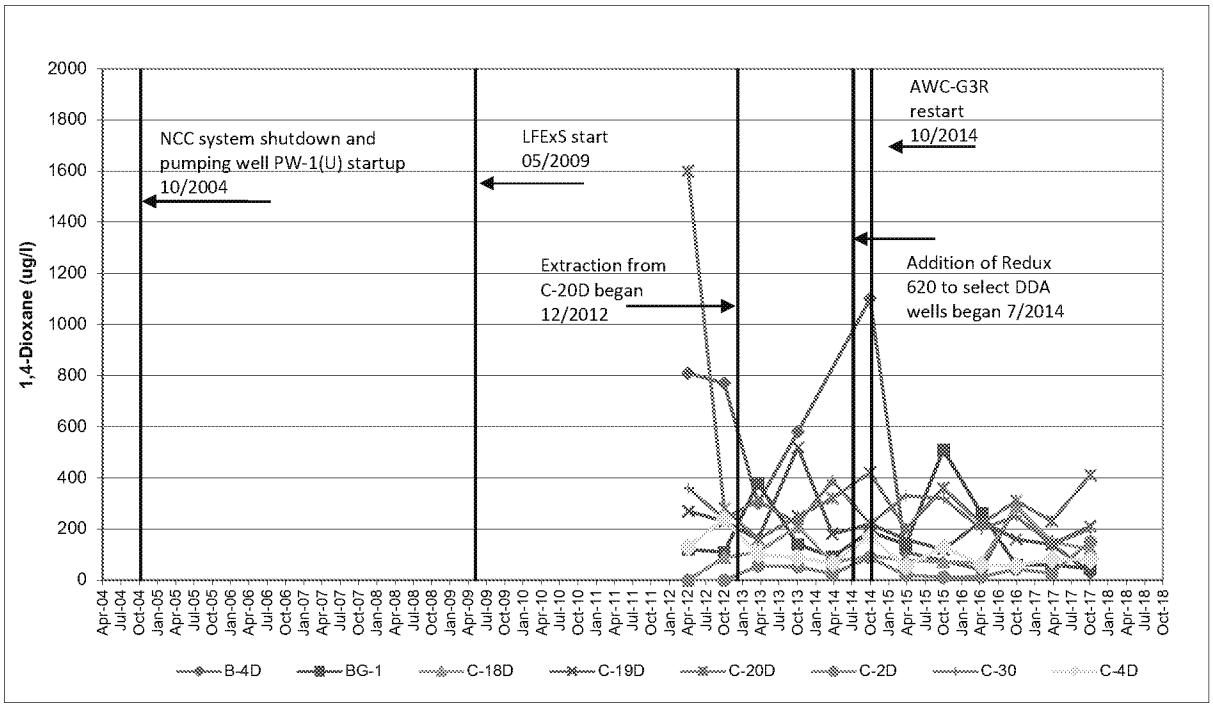

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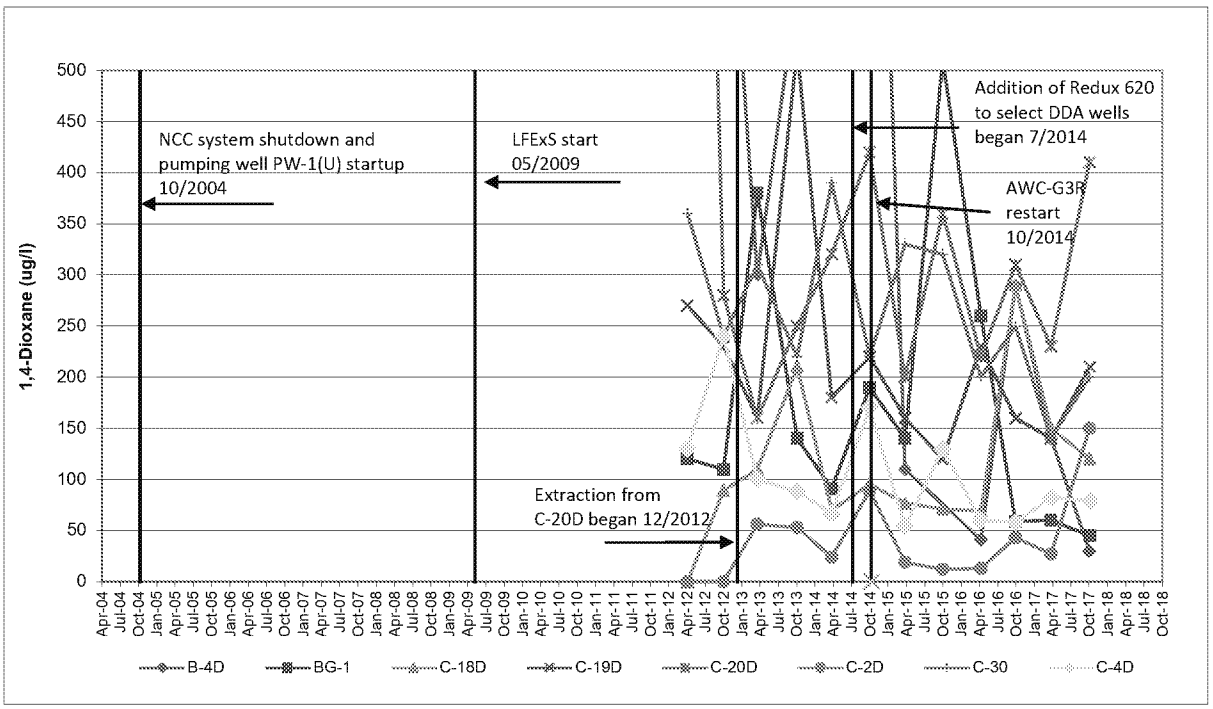

1,4-Dioxane - DDA Groundwater - LFExS Extraction Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-1B
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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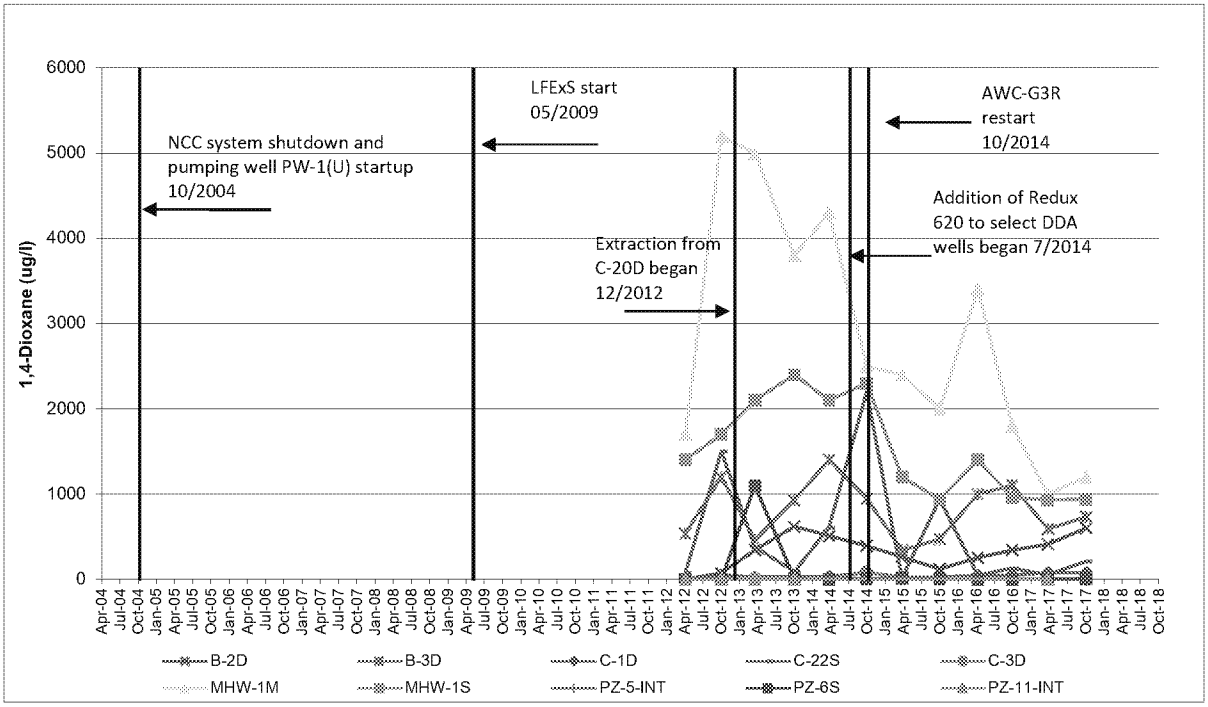

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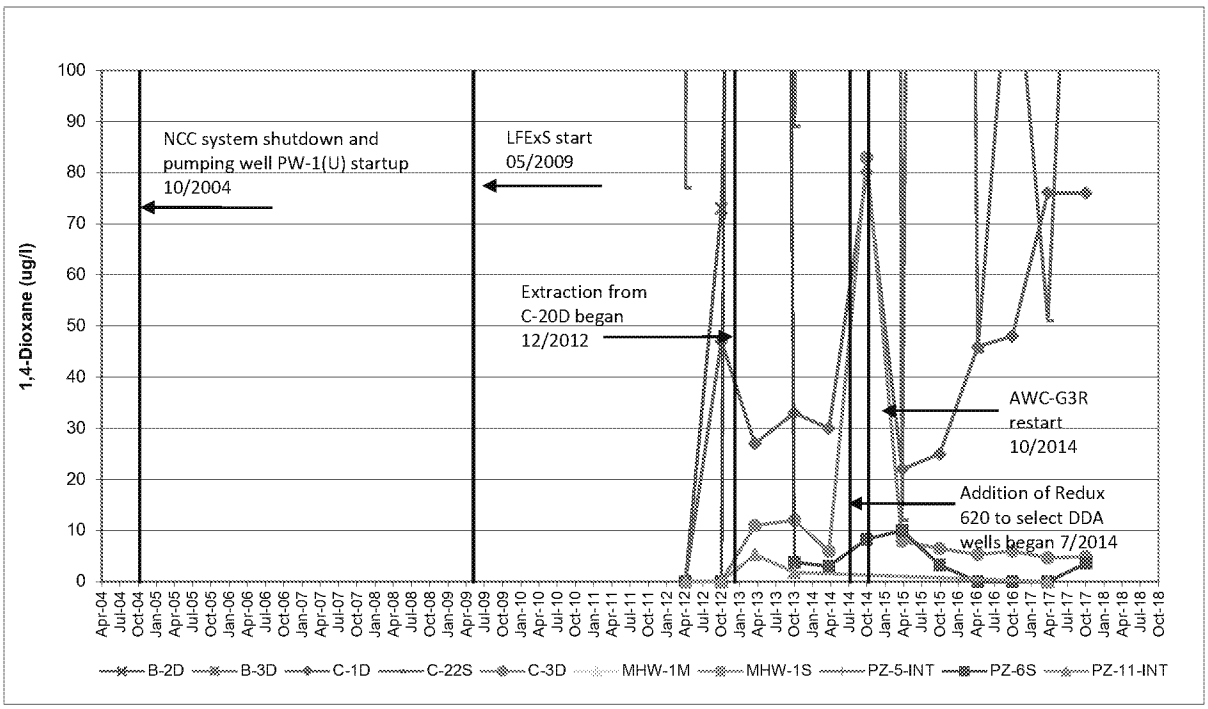

1,4-Dioxane - DDA Groundwater - LFExS Monitoring Well Trends

Golder Associates

Project Number:	013-6052		FIGURE F-2B
Prepared by:	TGB	11/9/2017	
Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/27/2018	

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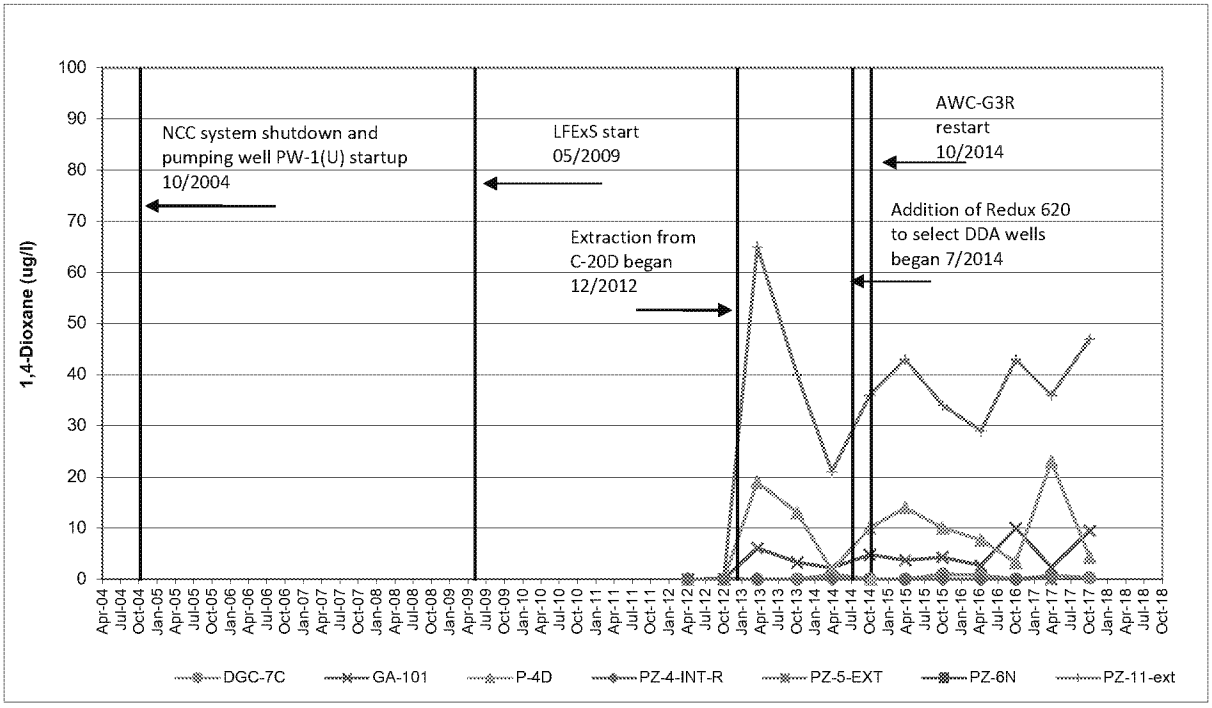

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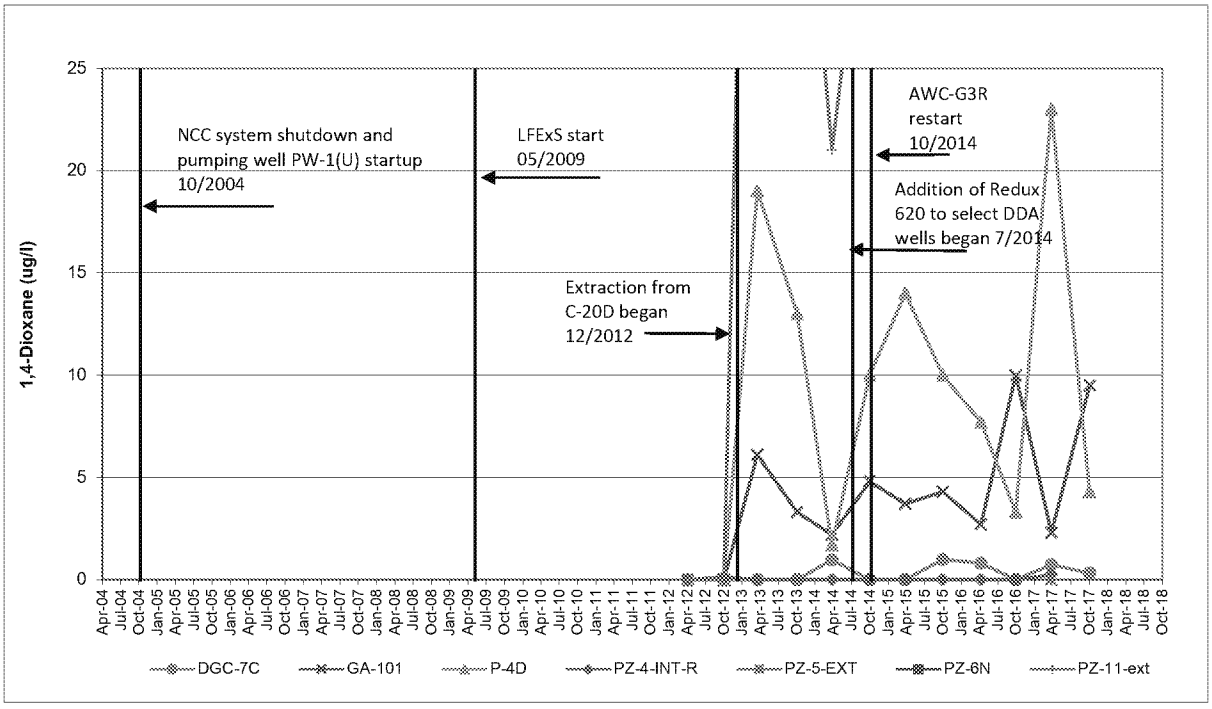

1,4-Dioxane - DDA Monitoring Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-3B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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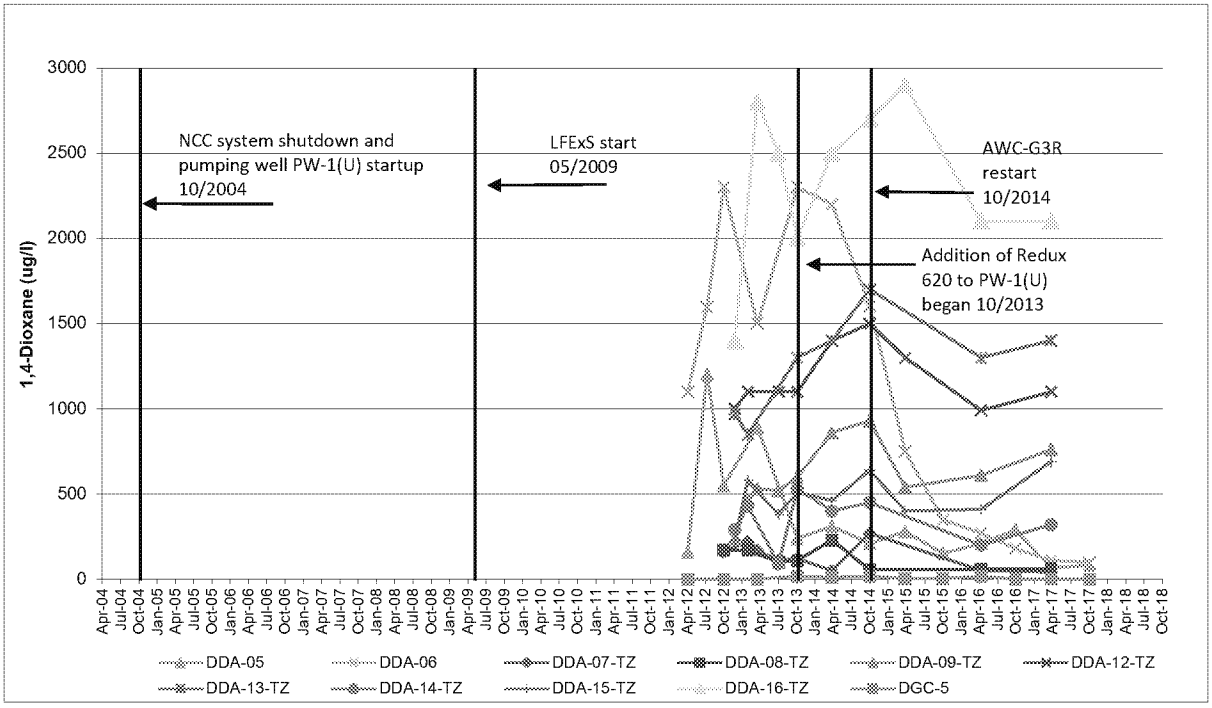

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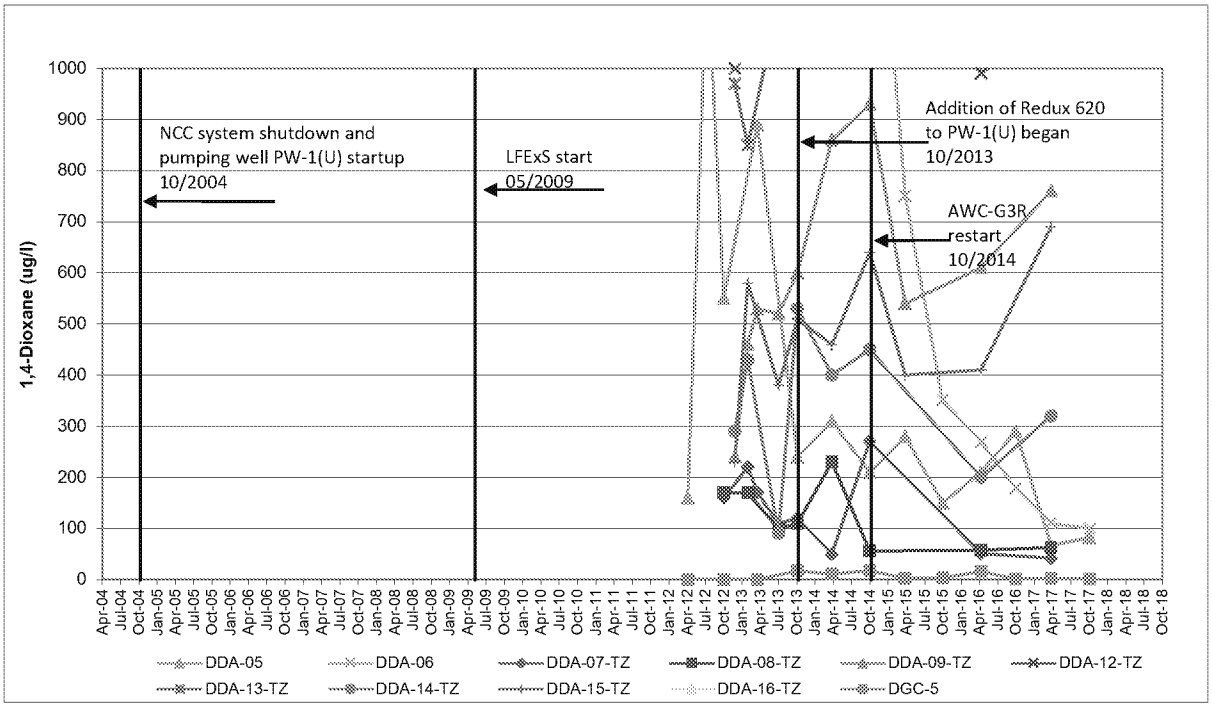

1,4-Dioxane - DDA to Well PW-1(U) UPCU Transition Zone Trends

Golder Associates	Project Number:	013-6052	FIGURE F-4B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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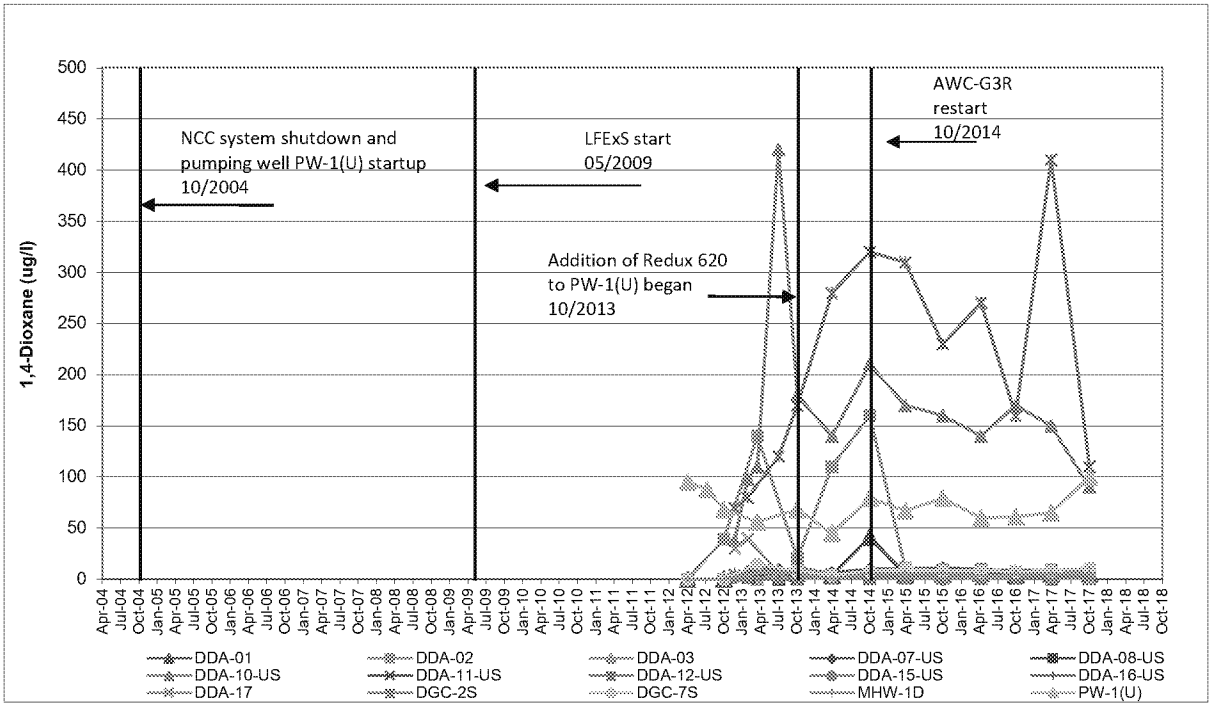

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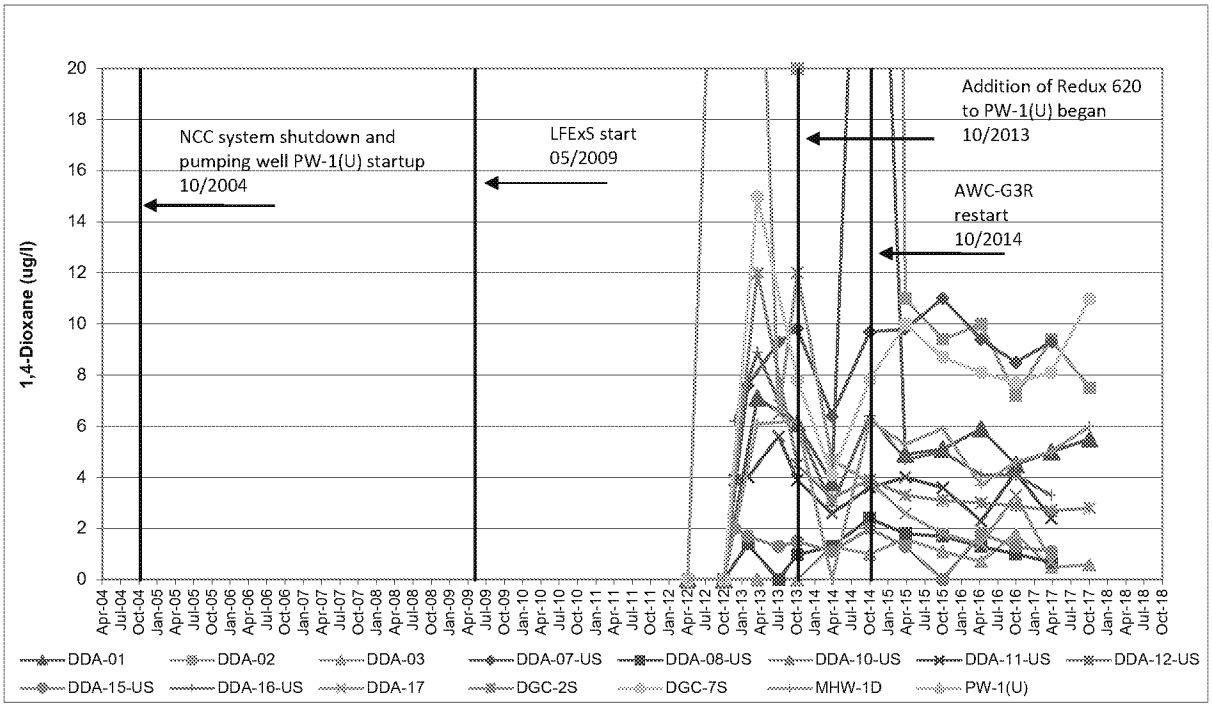

1,4-Dioxane - DDA to Well PW-1(U) UPA Trends

Golder Associates	Project Number:	013-6052	FIGURE F-5B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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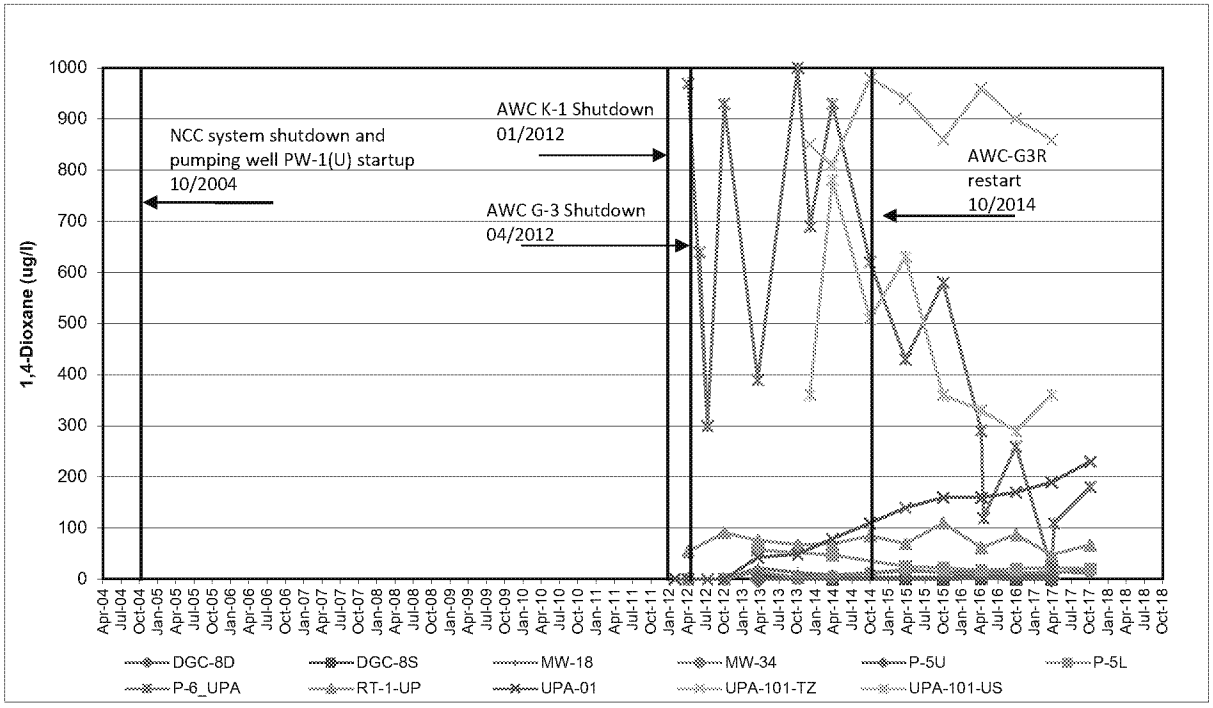

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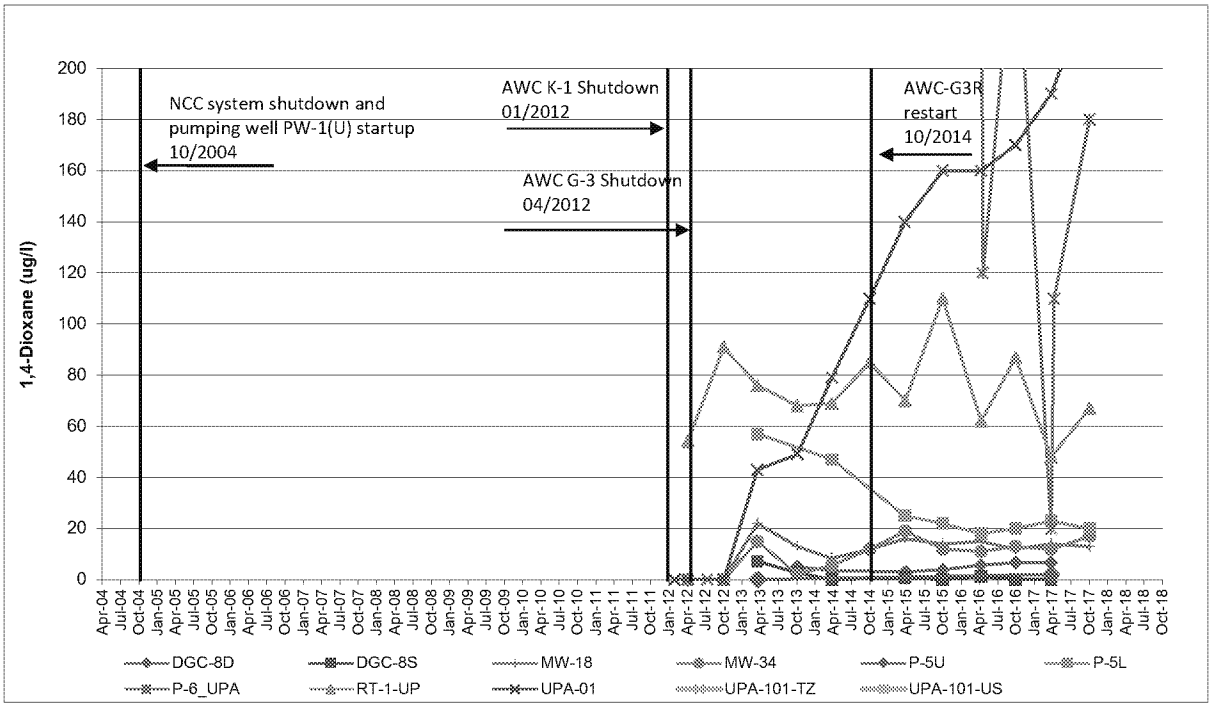

1,4-Dioxane - UPA Downgradient of Well PW-1(U) Trends - Well P-6 Area

Golder Associates	Project Number:	013-6052	FIGURE F-6B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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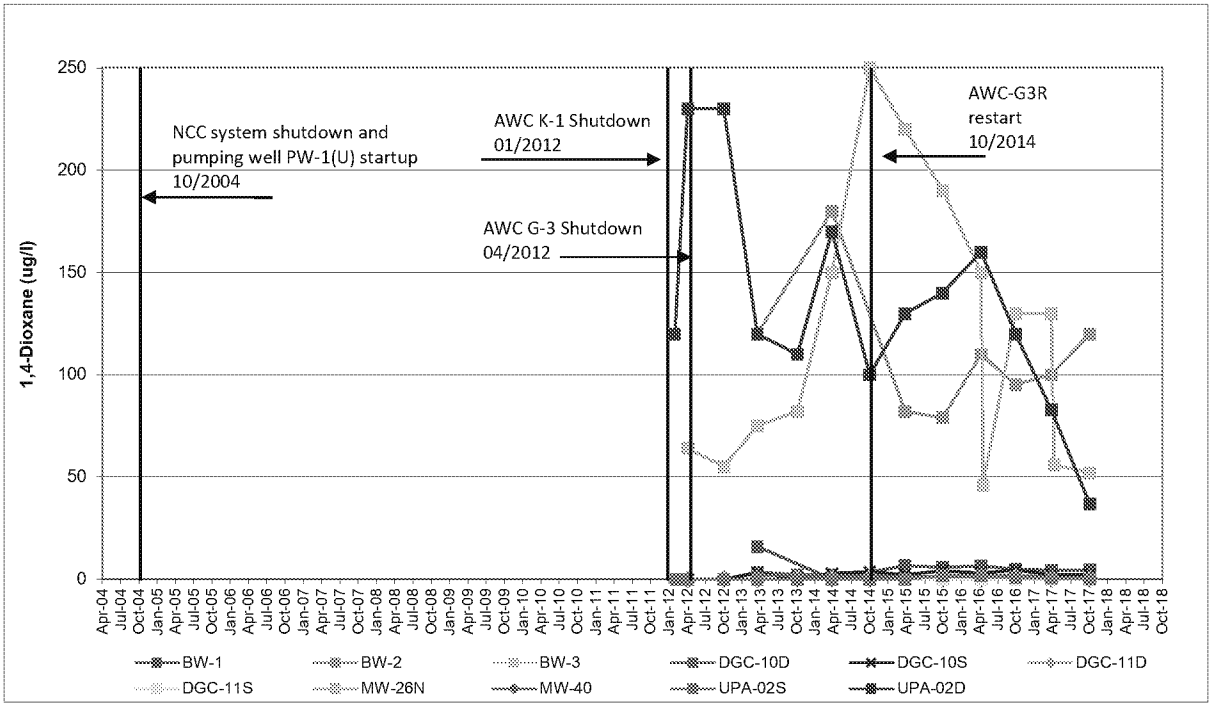

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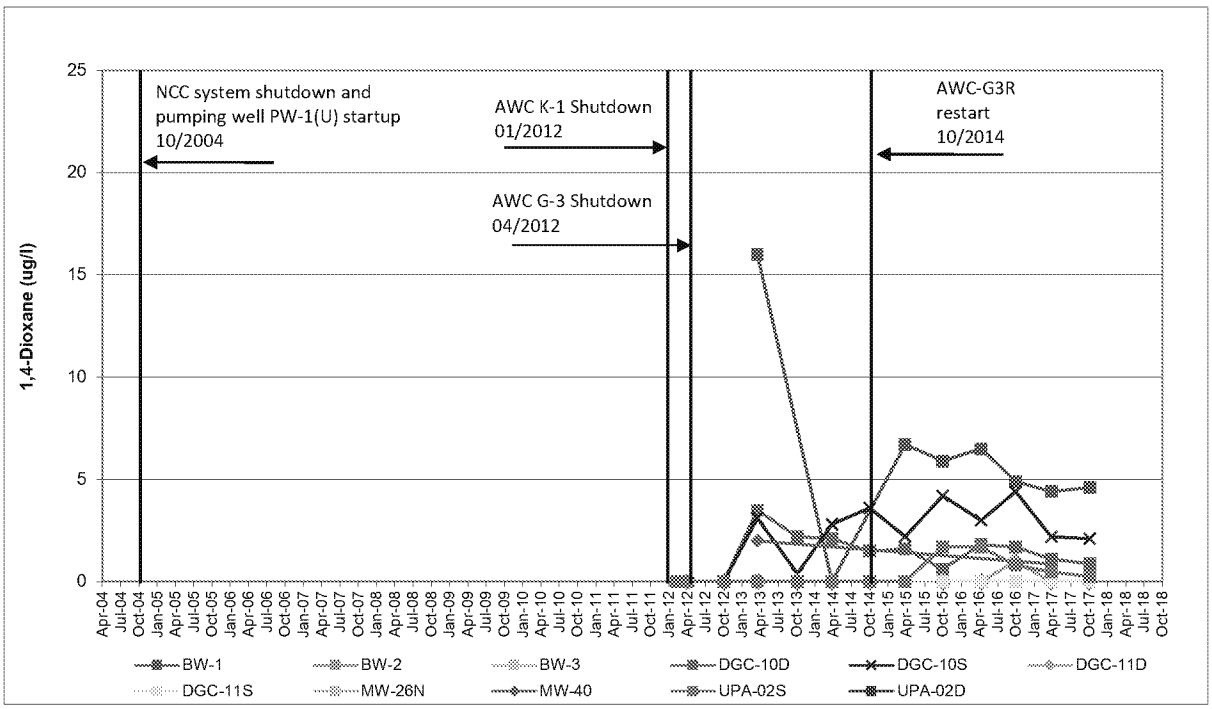

1,4-Dioxane - UPA Downgradient of Well PW-1(U) Trends

Golder Associates	Project Number:	013-6052	FIGURE F-7B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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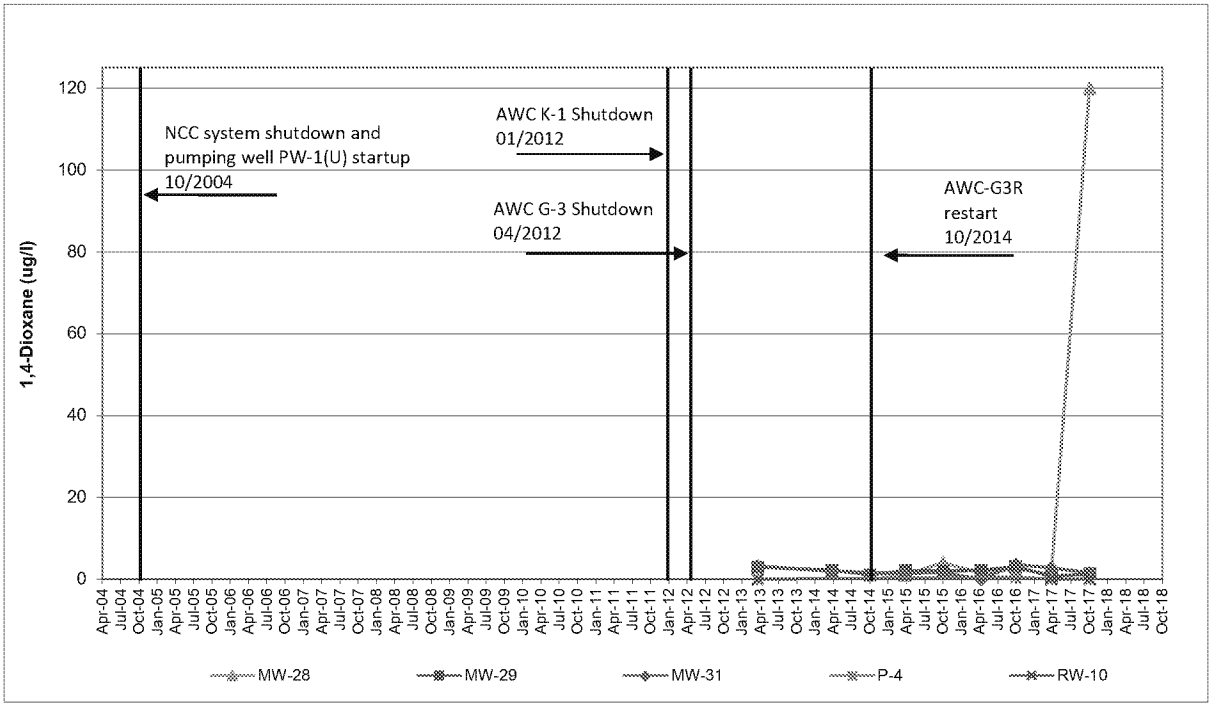

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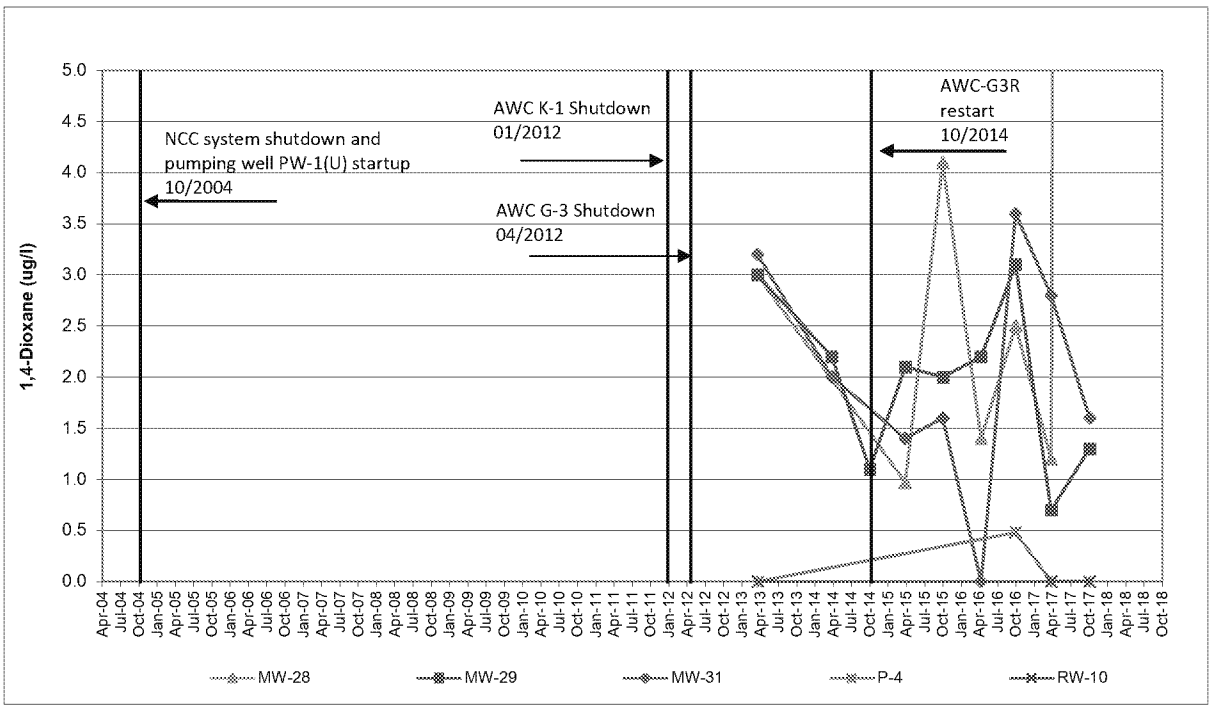

1,4-Dioxane - UPA Downgradient - Western Edge NCC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-8B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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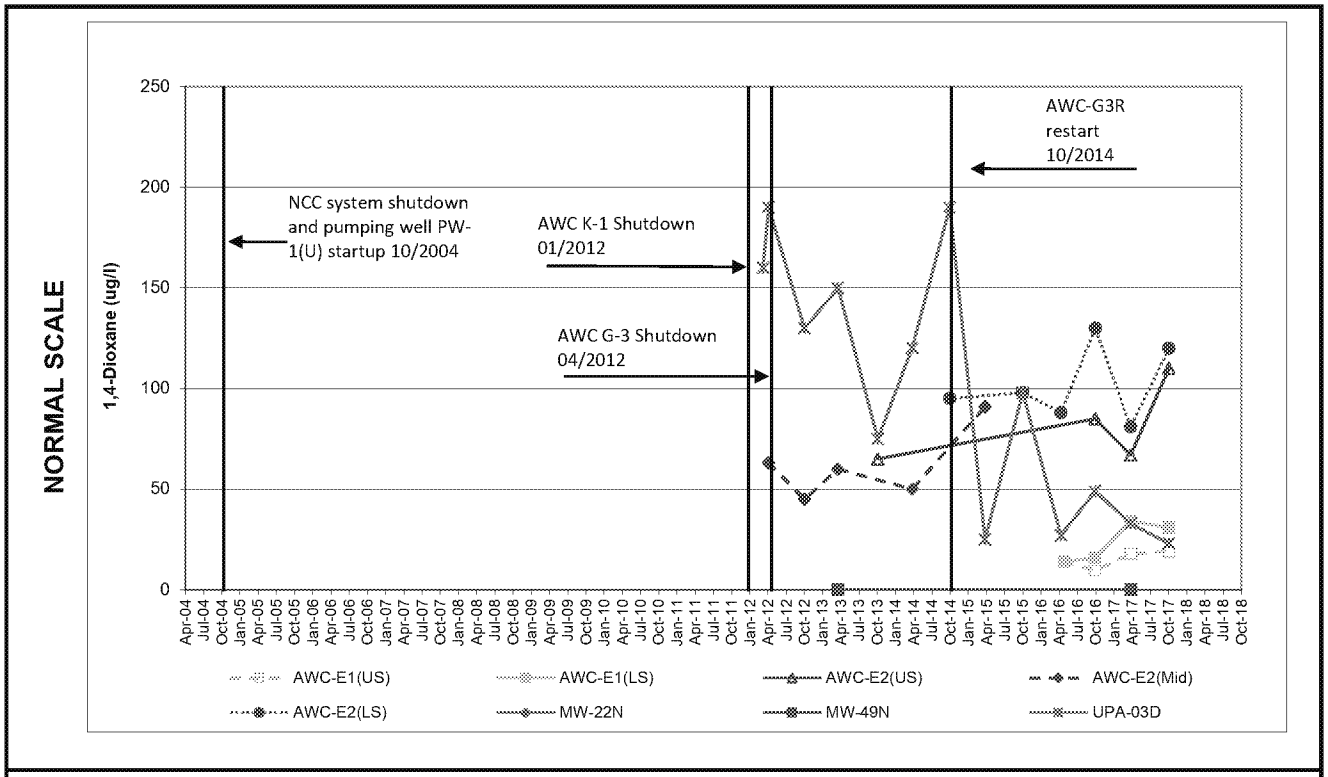

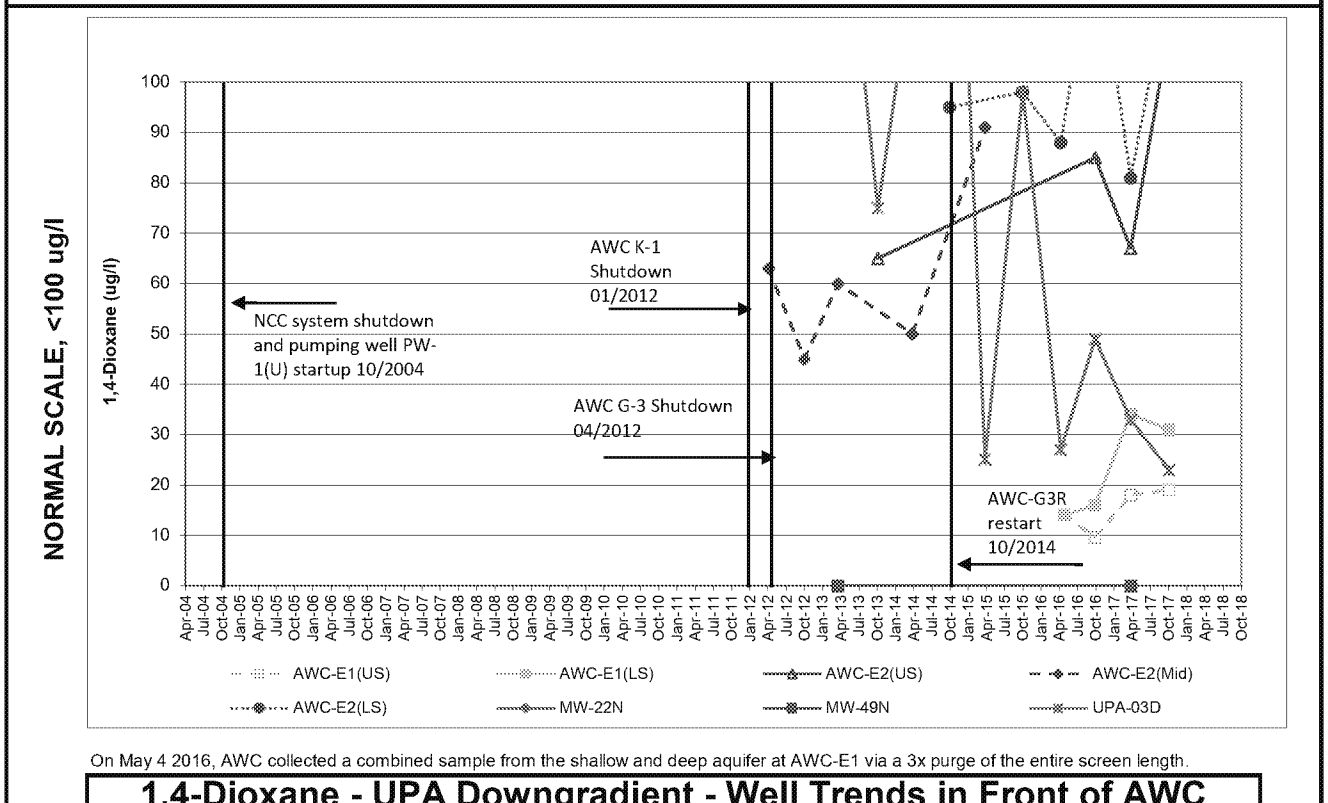

On May 4 2016, AWC collected a combined sample from the shallow and deep aquifer at AWC-E1 via a 3x purge of the entire screen length.

1,4-Dioxane - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052	FIGURE F-9B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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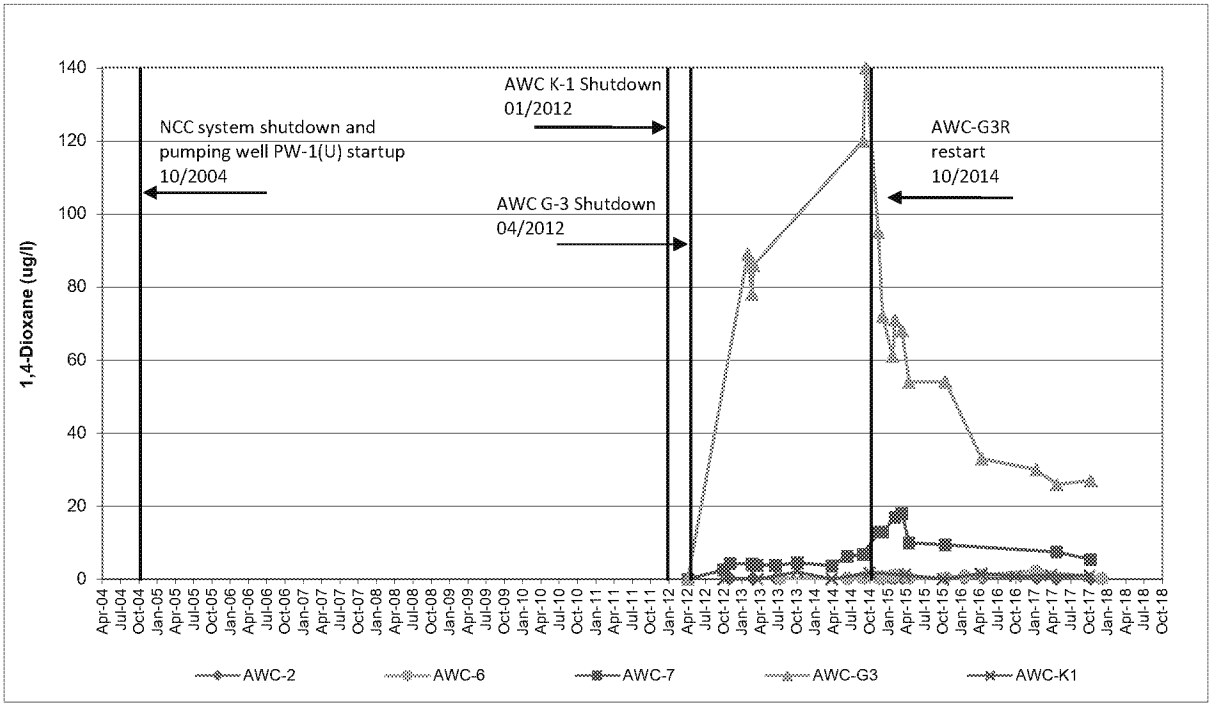

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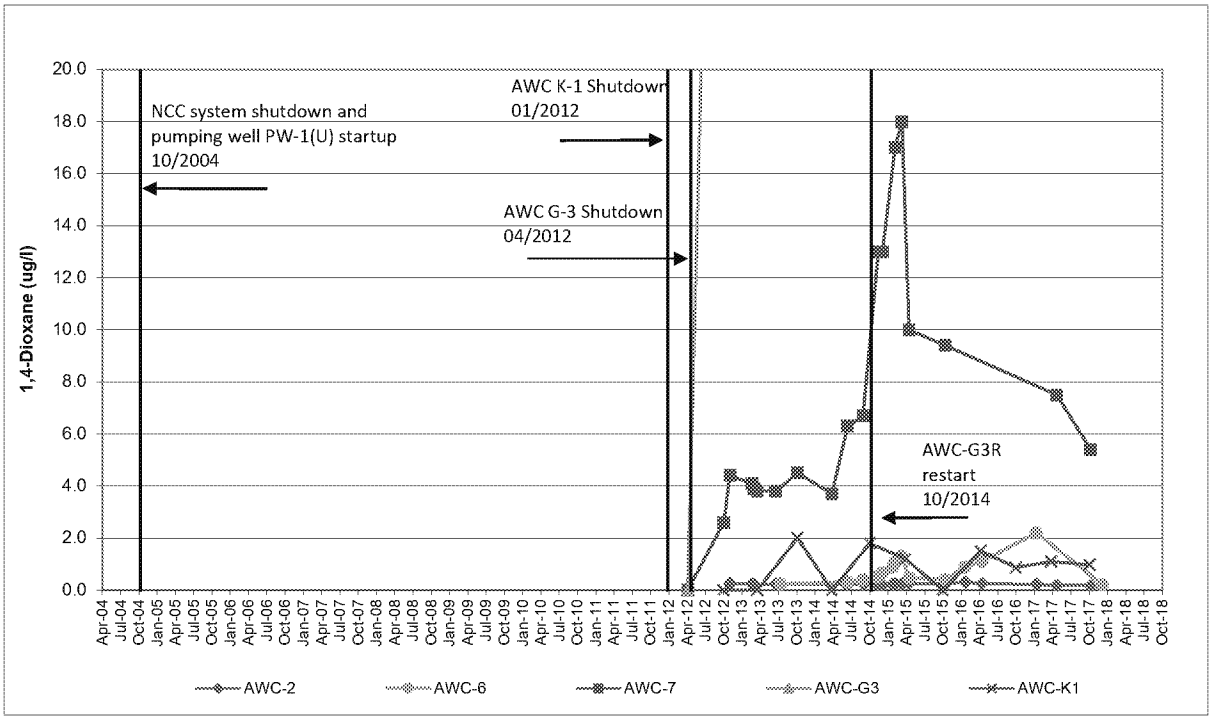

1,4-Dioxane - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10B
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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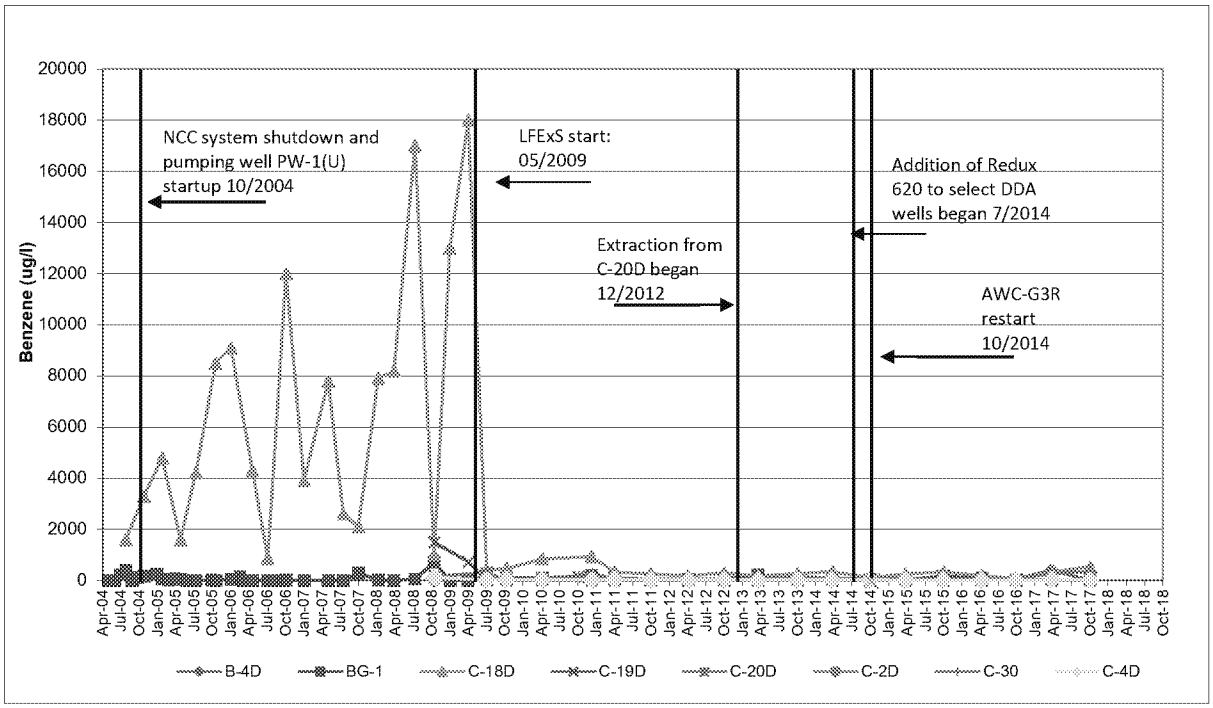

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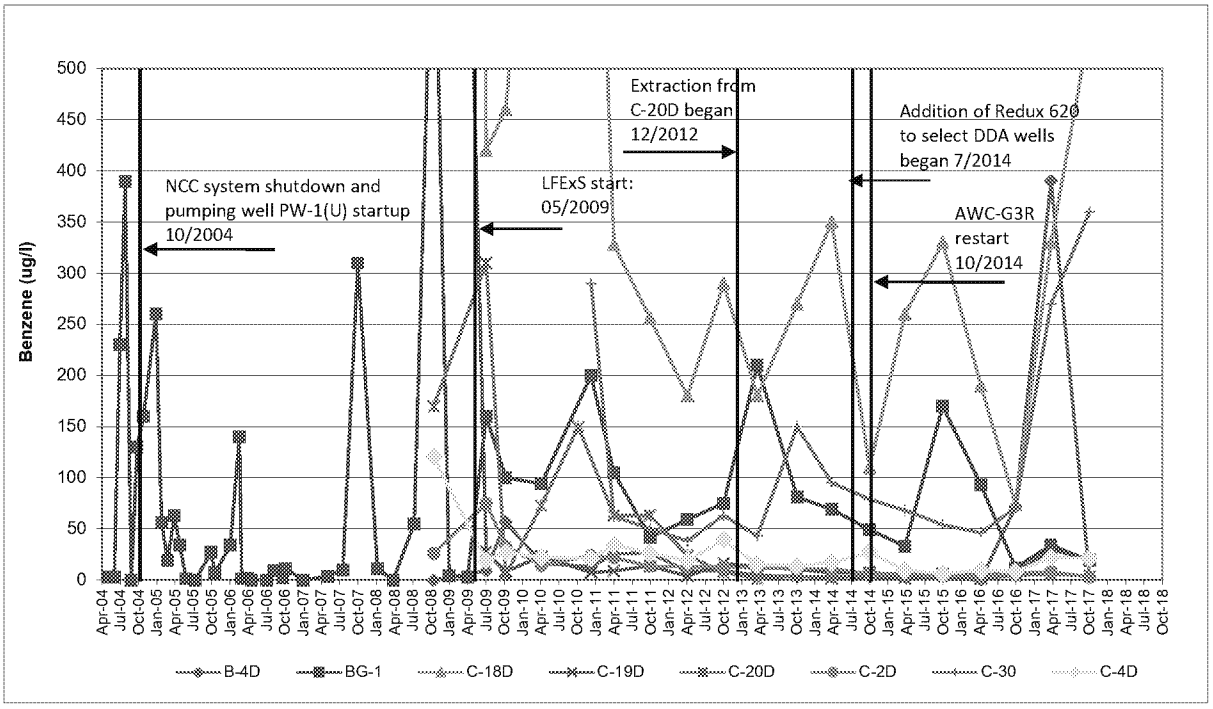

Benzene - DDA Groundwater - LFExS Extraction Well Trends

Golder Associates

Project Number:	013-6052		FIGURE F-1C
Prepared by:	TGB	11/9/2017	
Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/27/2018	

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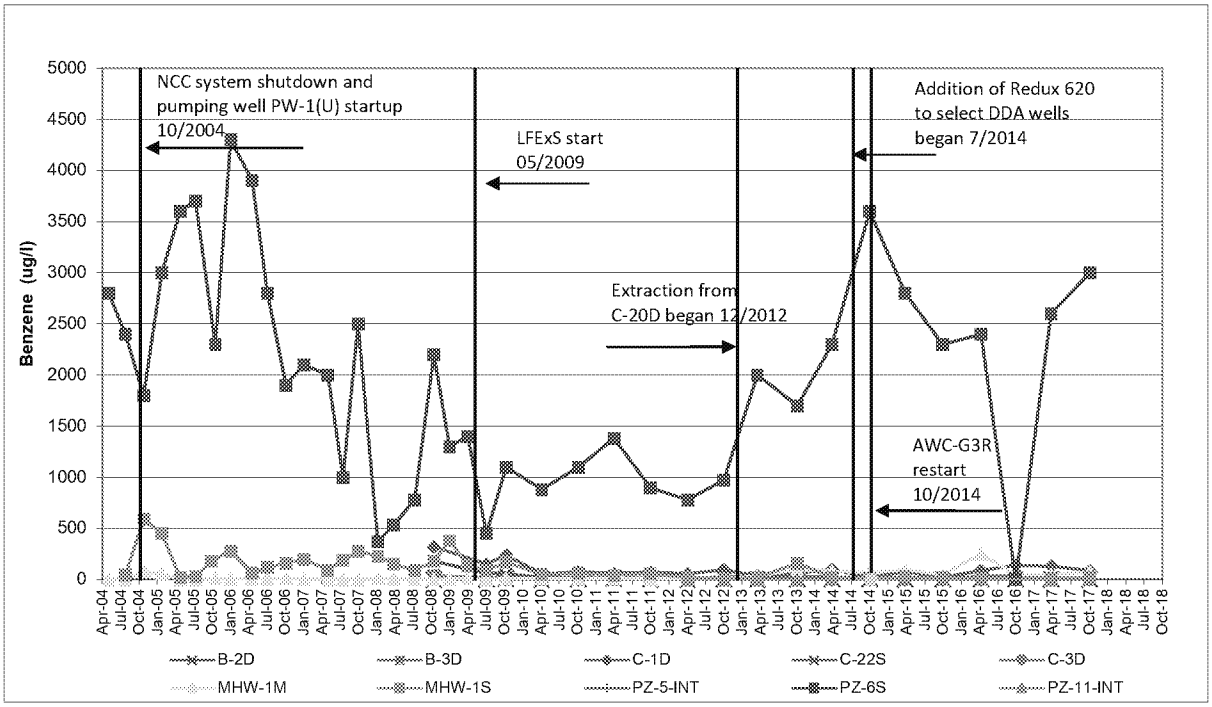

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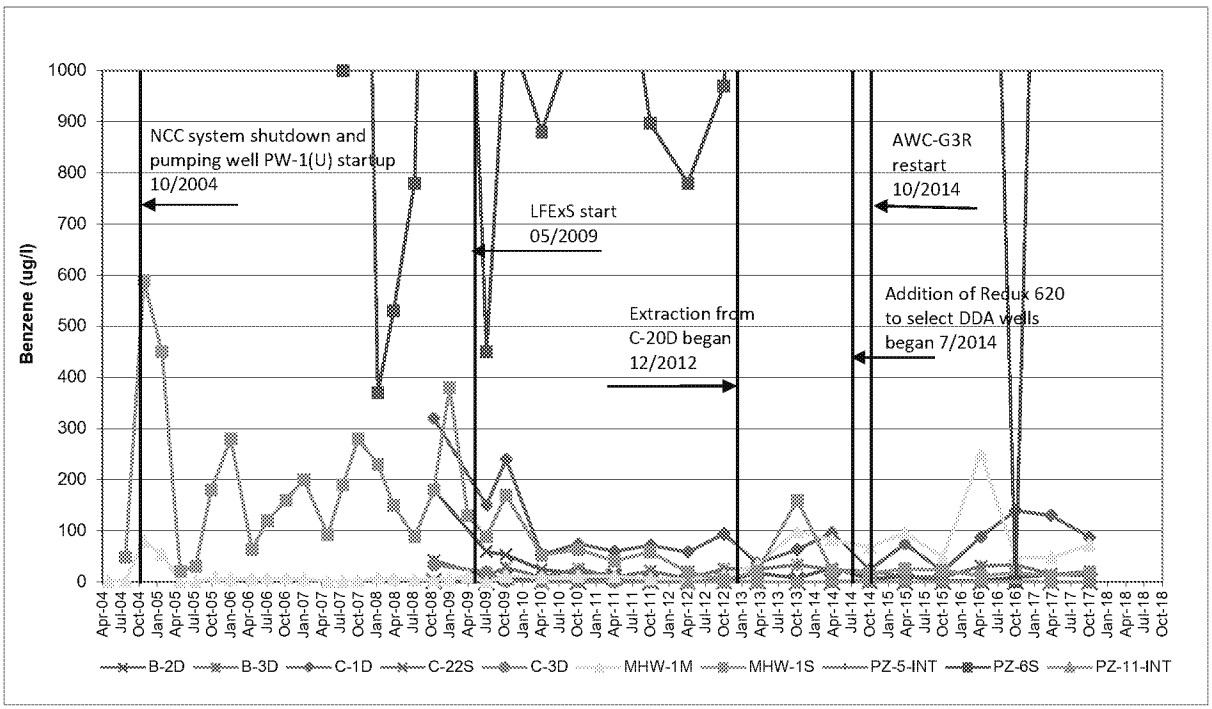

Benzene - DDA Groundwater - LFExS Monitoring Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-2C
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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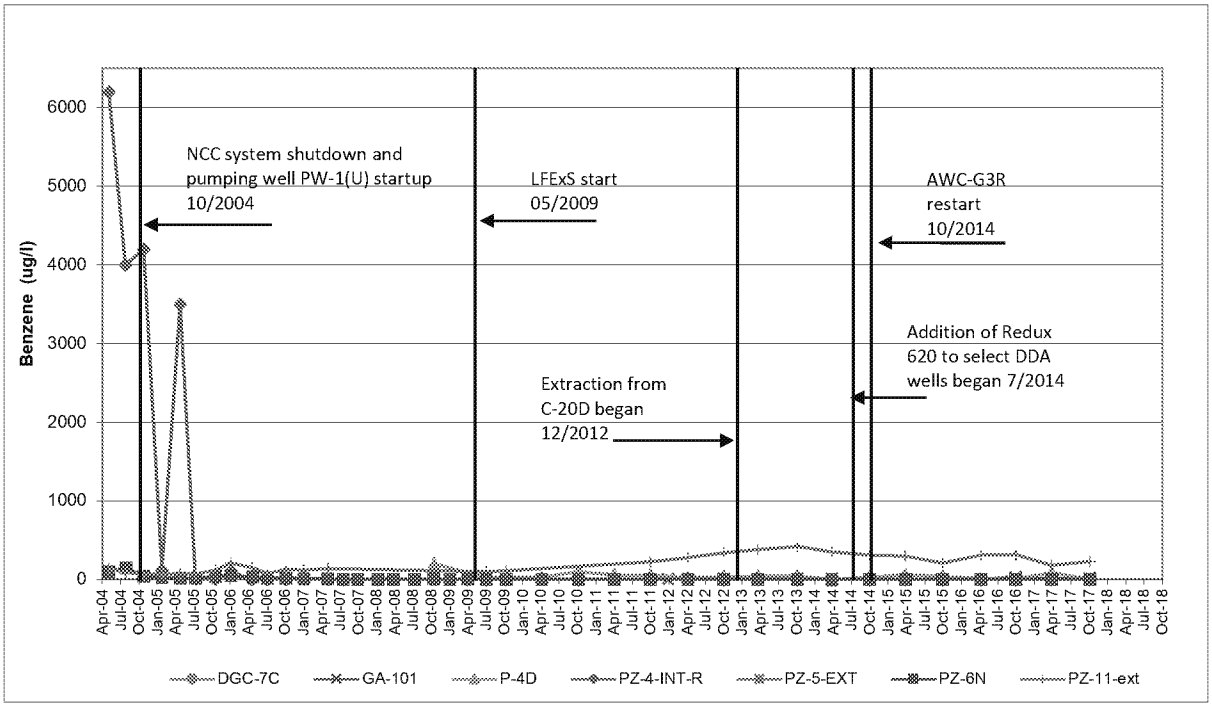

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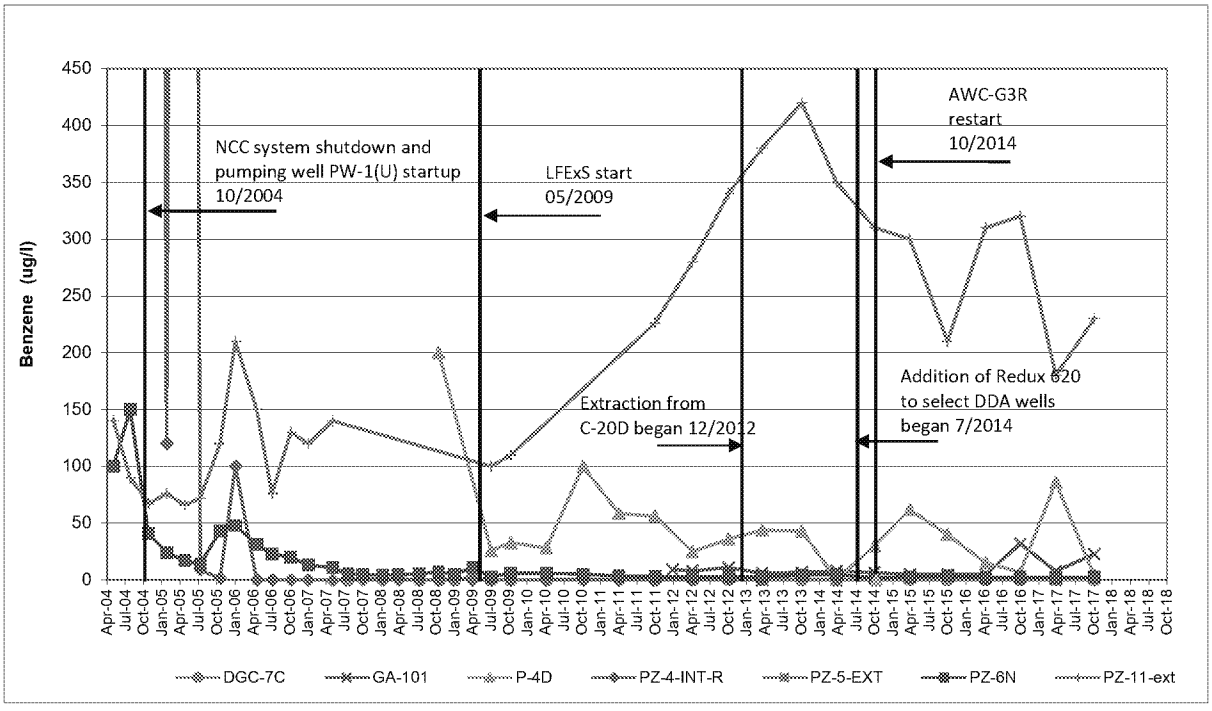

Benzene - DDA Monitoring Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-3C
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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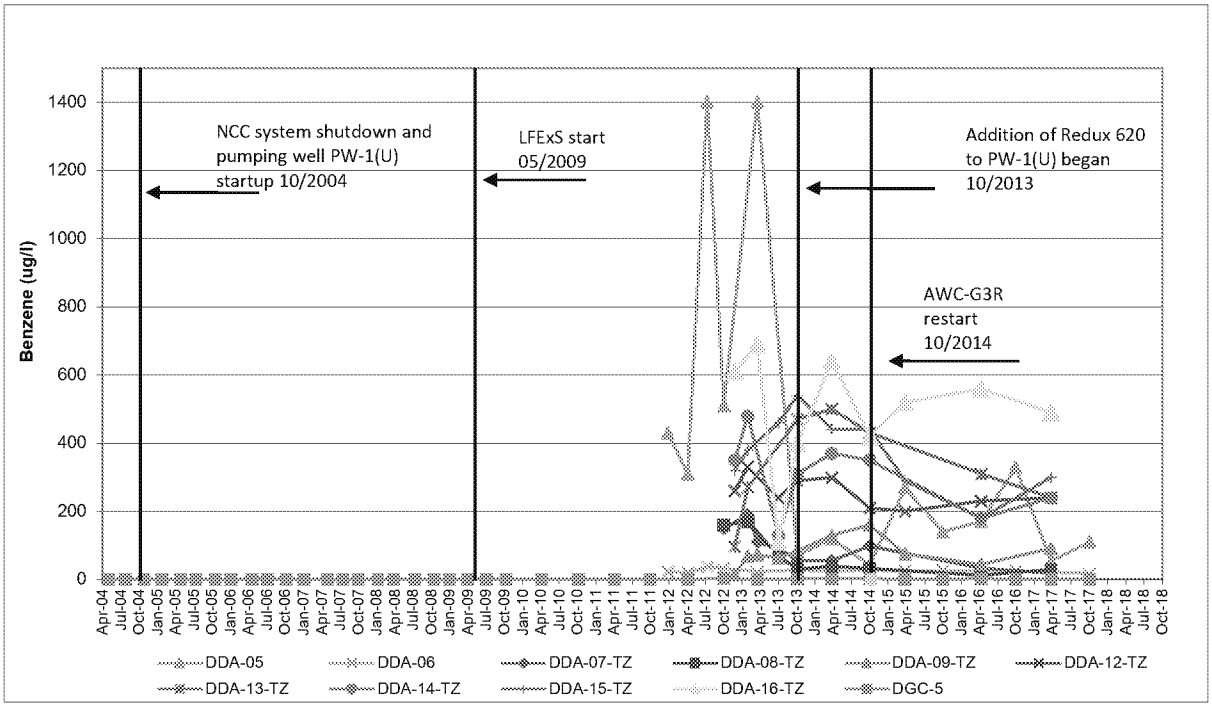

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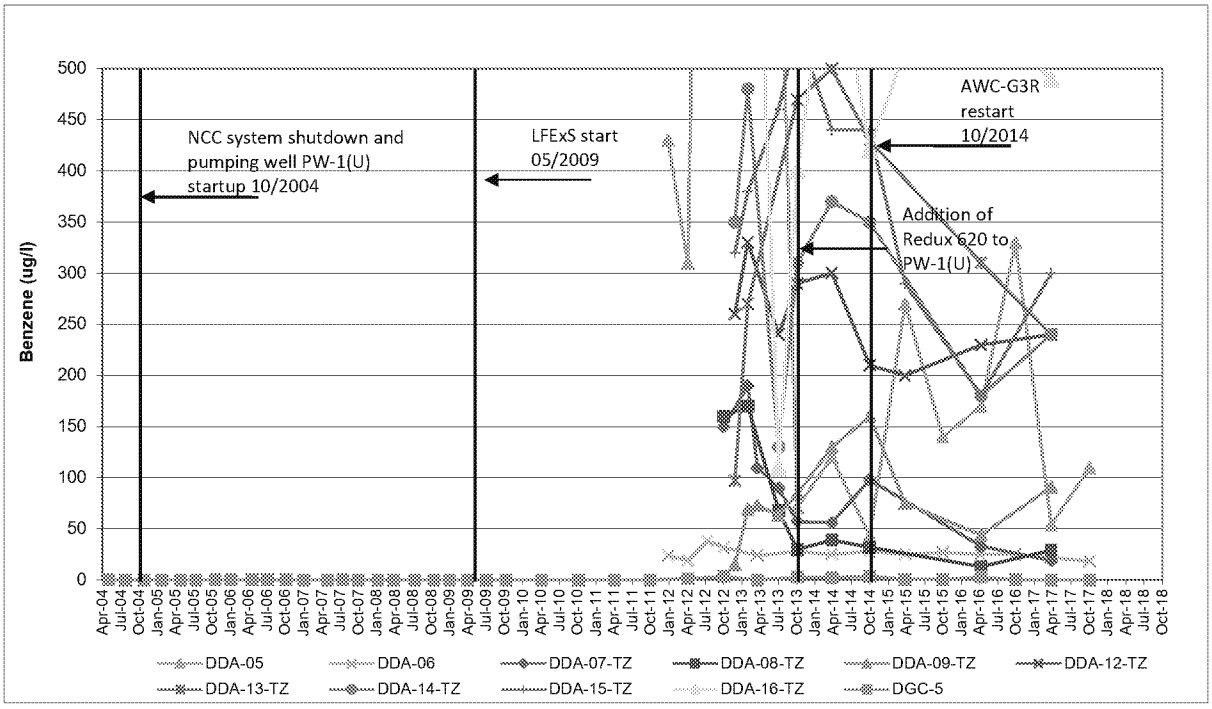

Benzene - DDA to Well PW-1(U) UPCU Transition Zone Trends

Golder Associates	Project Number:	013-6052		FIGURE F-4C
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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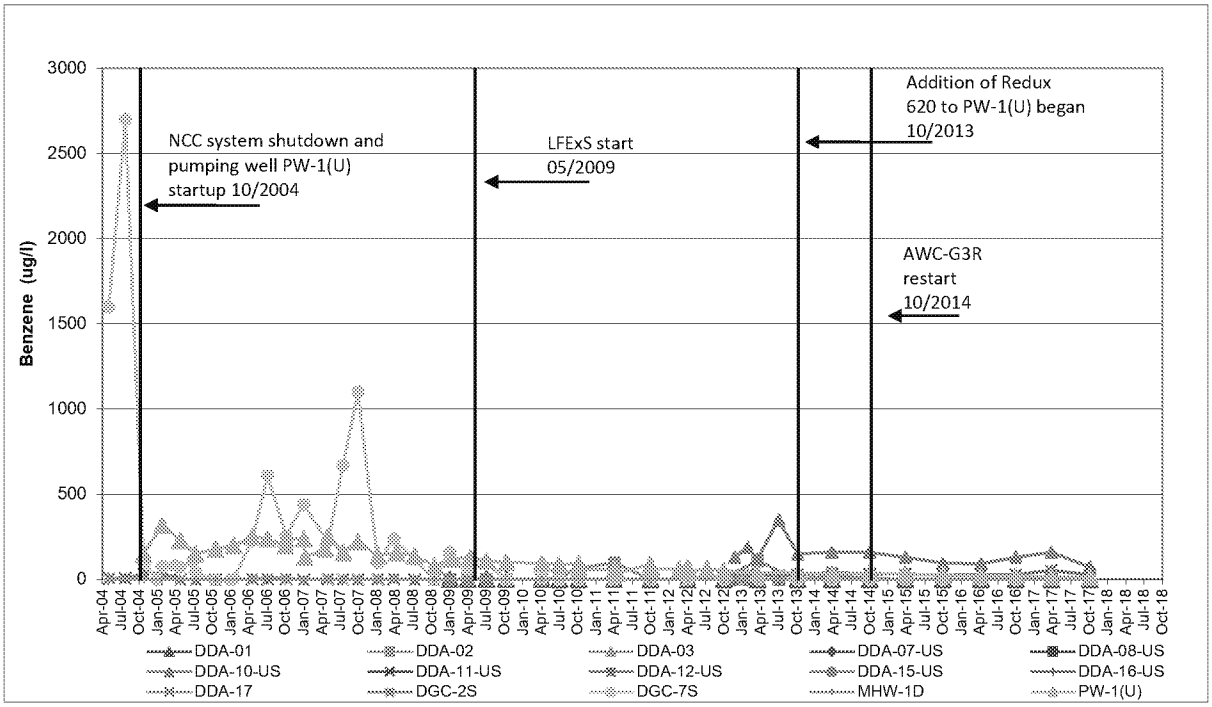

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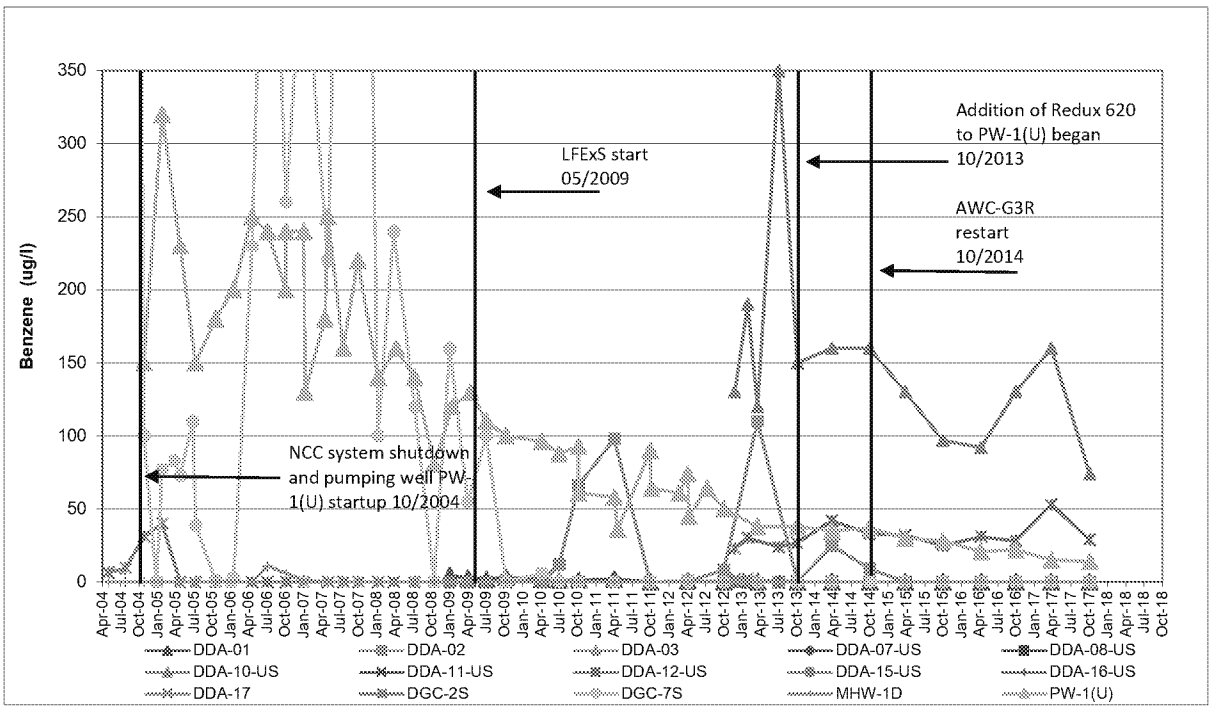

Benzene - DDA to Well PW-1(U) UPA Trends

Golder Associates	Project Number:	013-6052		FIGURE F-5C
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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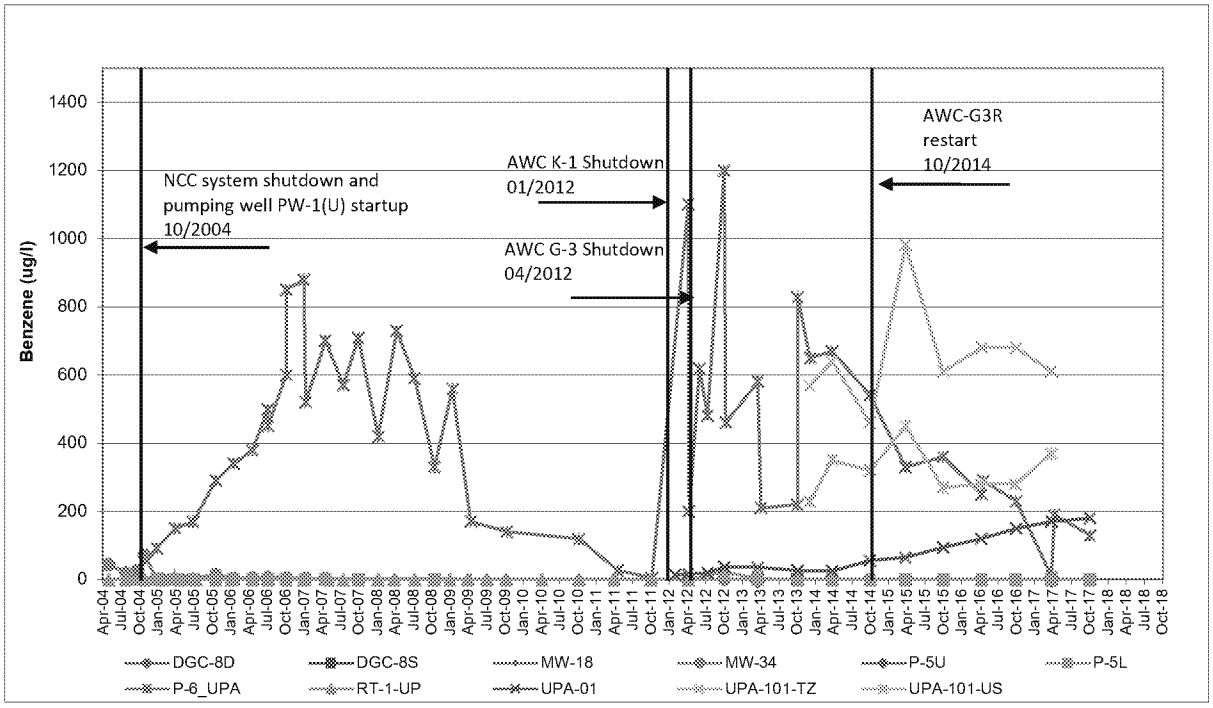

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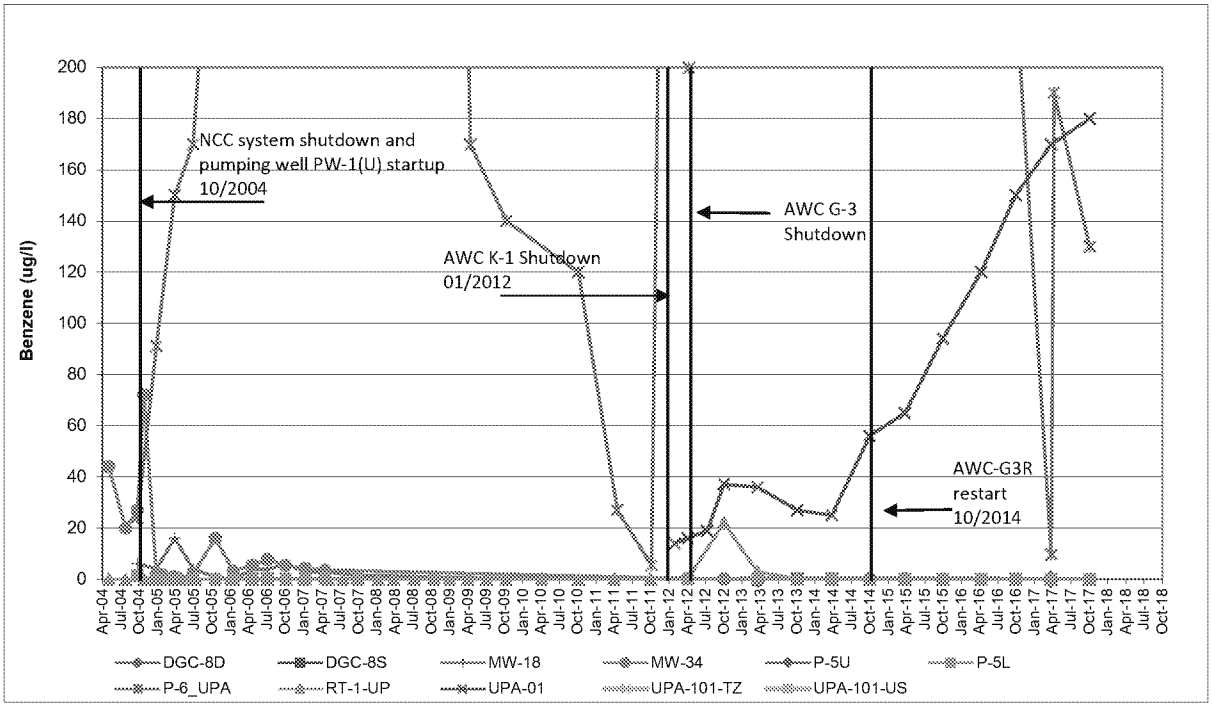

Benzene - UPA Downgradient of Well PW-1(U) Trends - Well P-6 Area

Golder Associates	Project Number:	013-6052		FIGURE F-6C
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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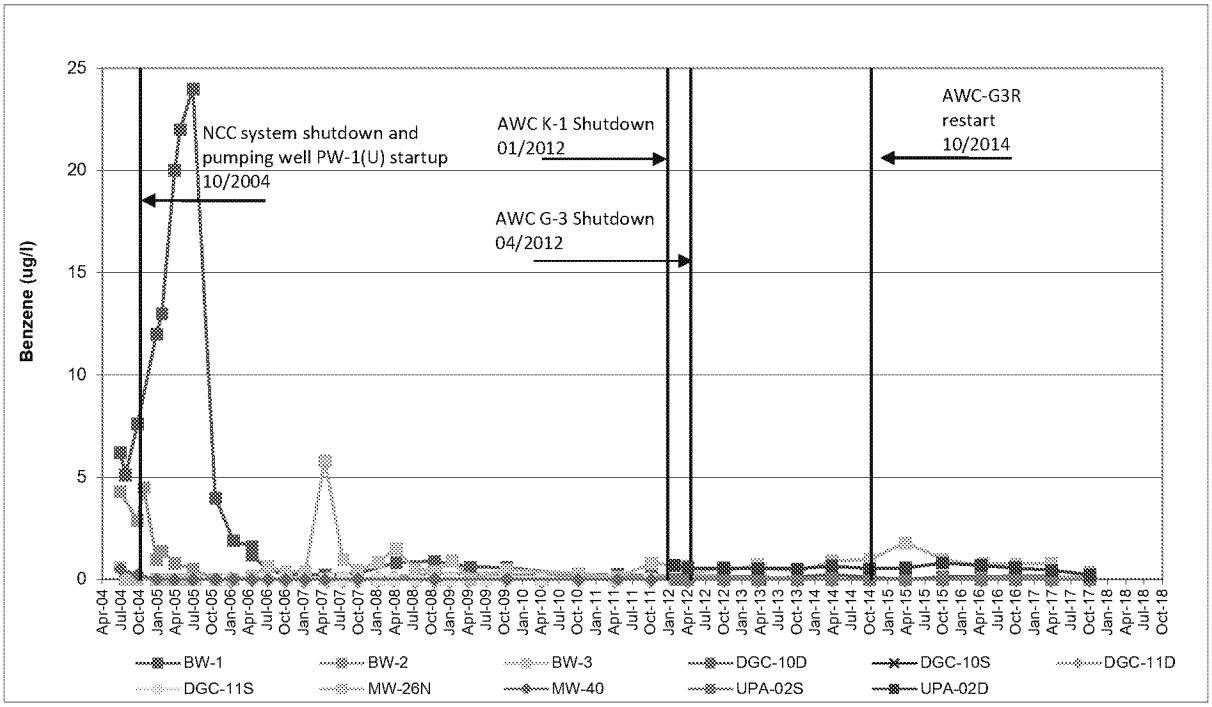

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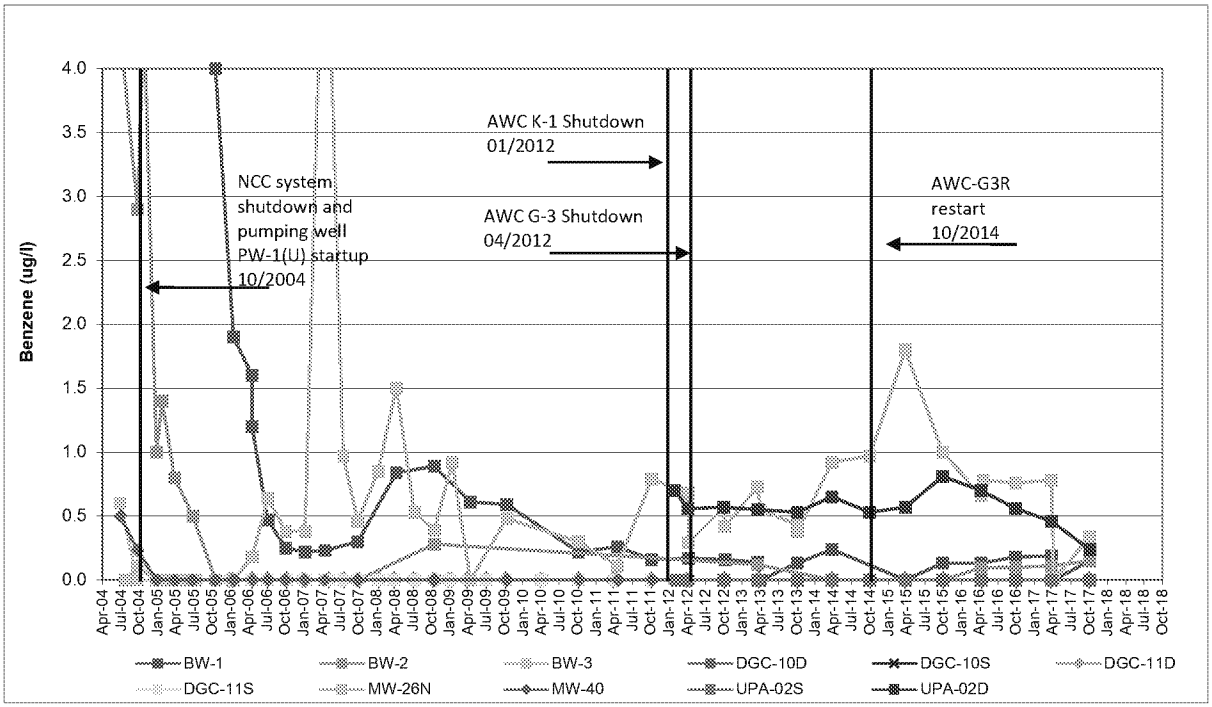

Benzene - UPA Downgradient of Well PW-1(U) Trends

Golder Associates	Project Number:	013-6052		FIGURE F-7C
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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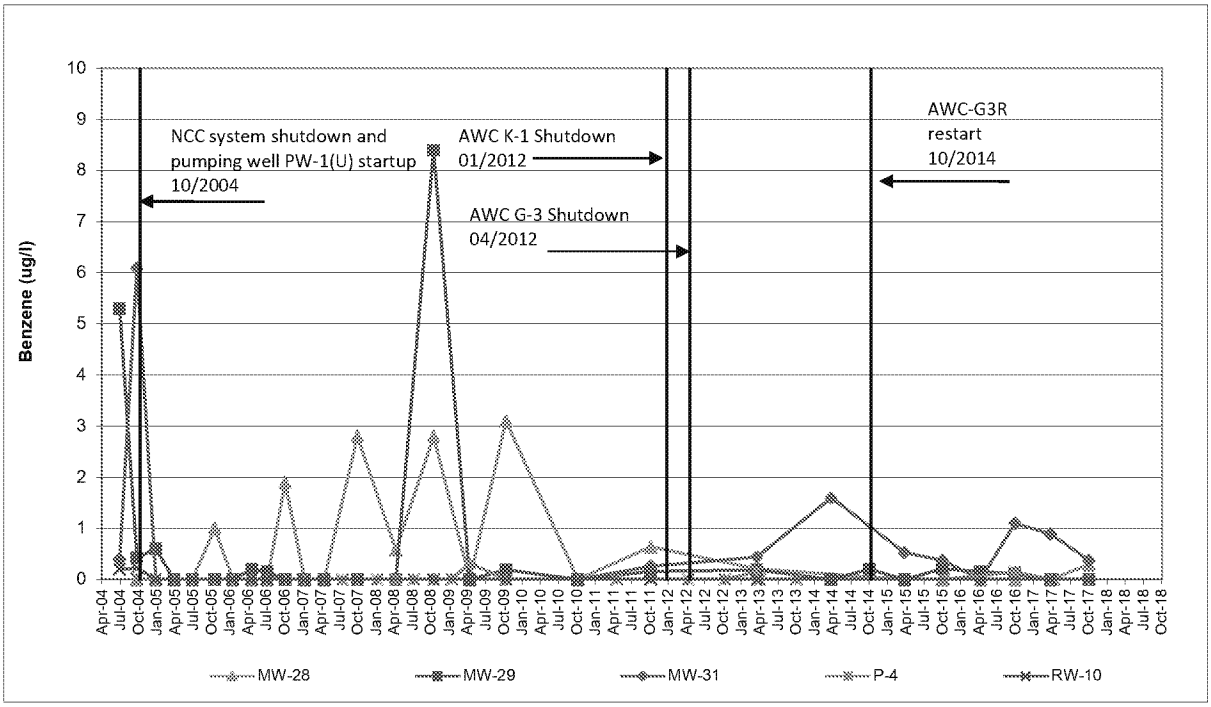

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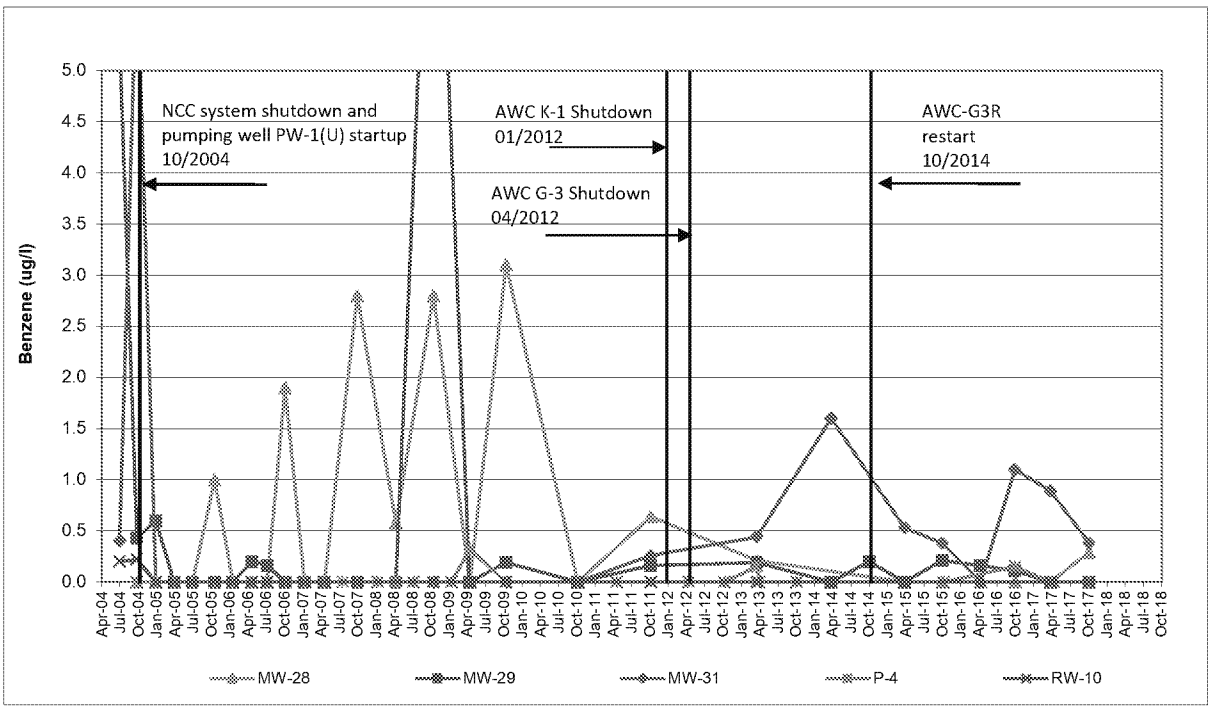

Benzene - UPA Downgradient - Western Edge NCC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-8C
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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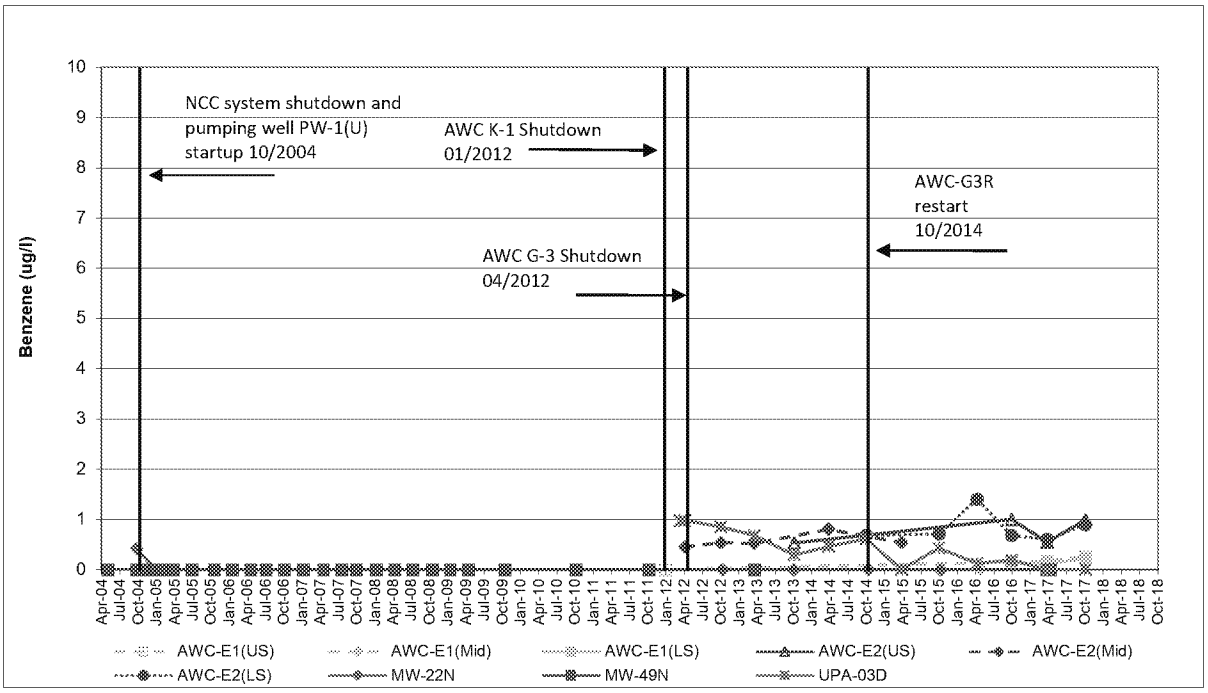

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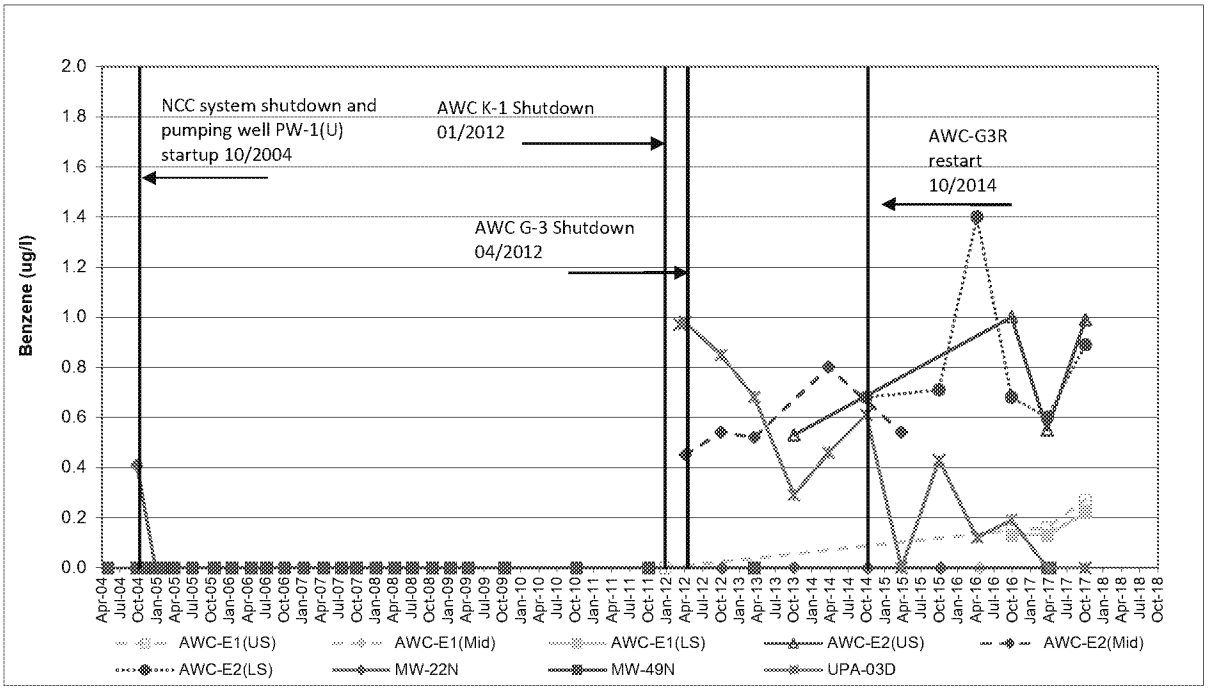

On May 4 2016, AWC collected a combined sample from the shallow and deep aquifer at AWC-E1 via a 3x purge of the entire screen length.

Benzene - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052		FIGURE F-9C
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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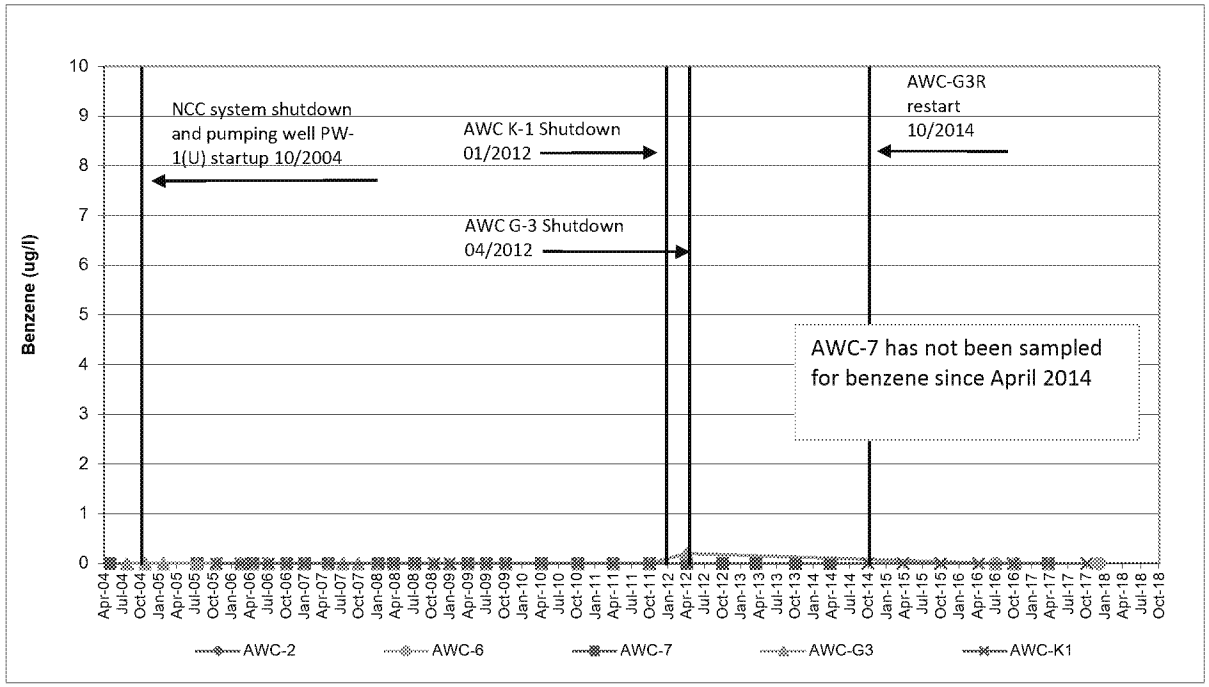

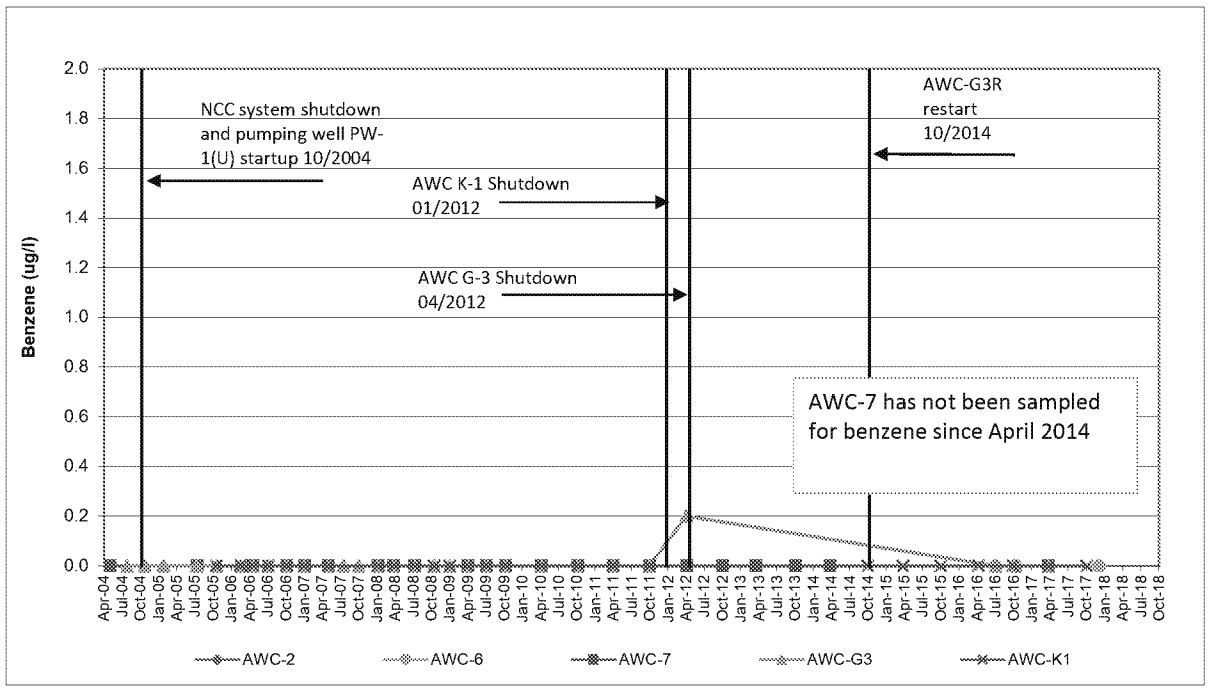

Benzene - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10C
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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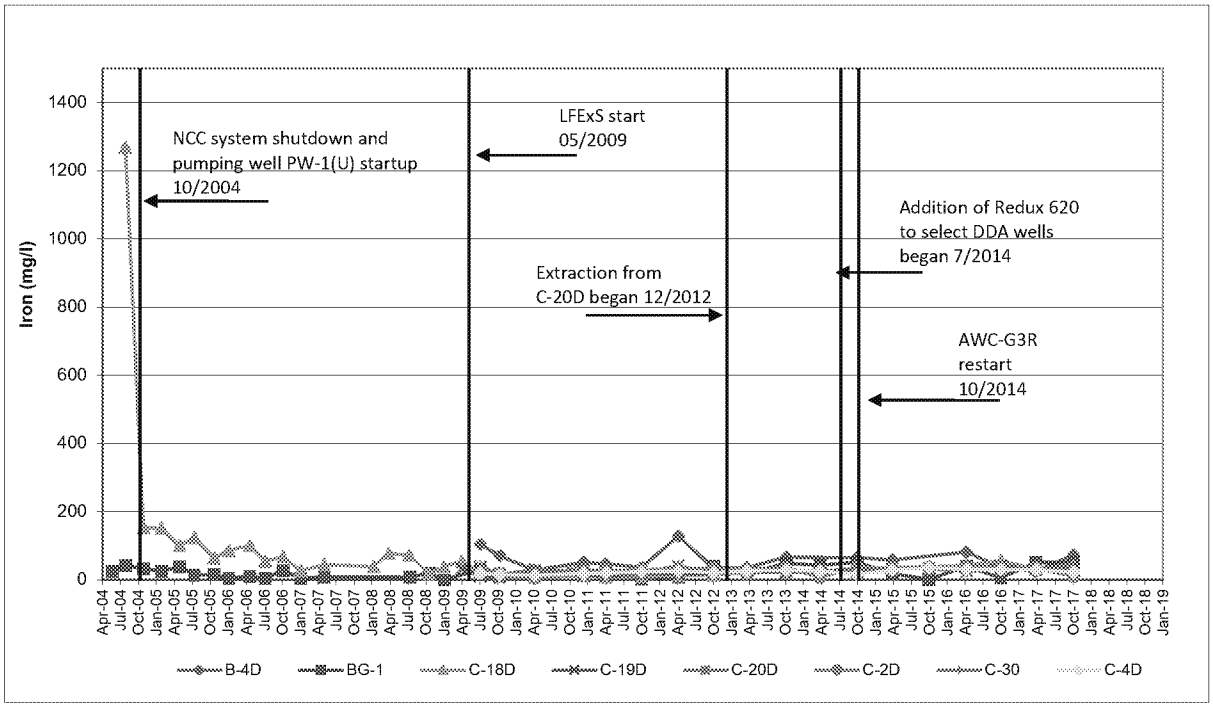
NORMAL SCALE



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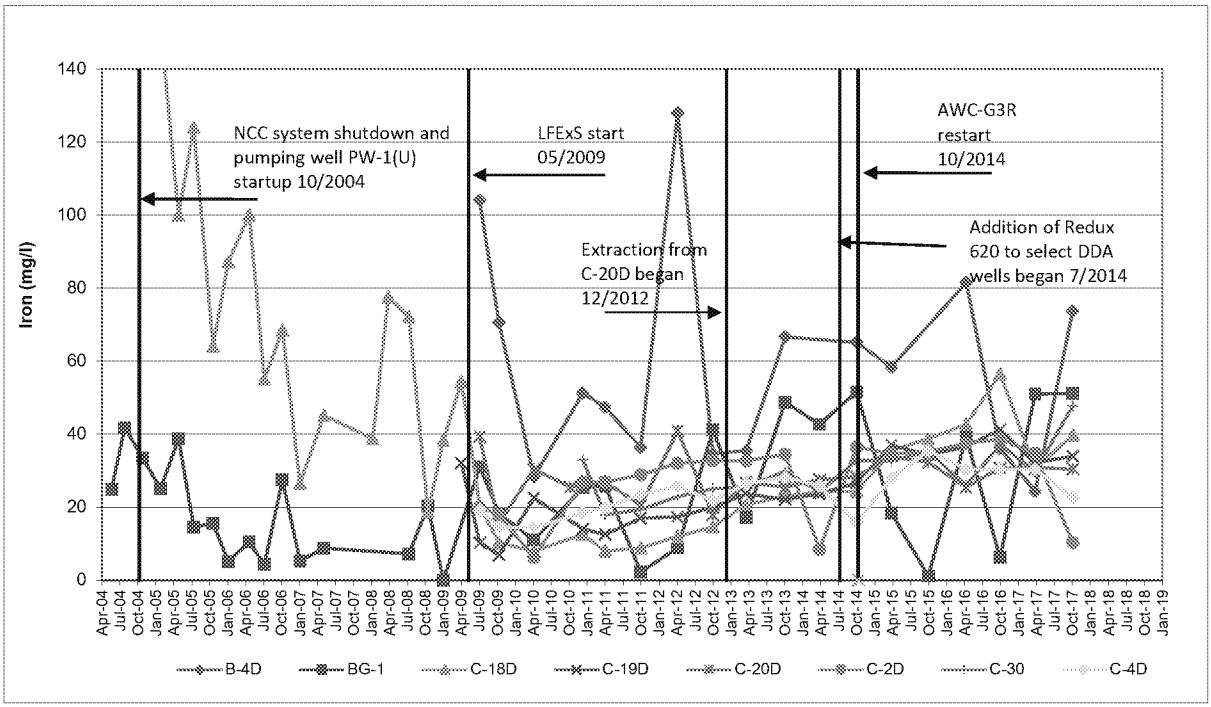

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA Groundwater - LFExS Extraction Well Trends

Golder Associates	Project Number:	013-6052	**FIGURE F-1D**
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/27/2018	

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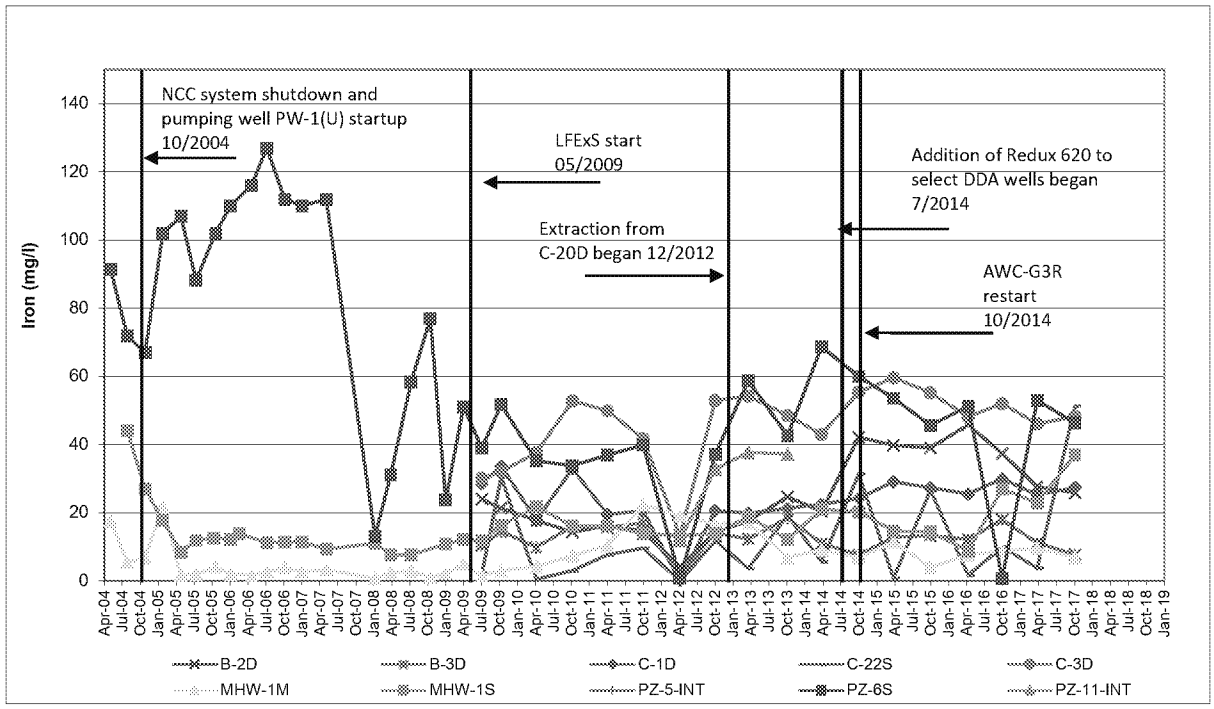

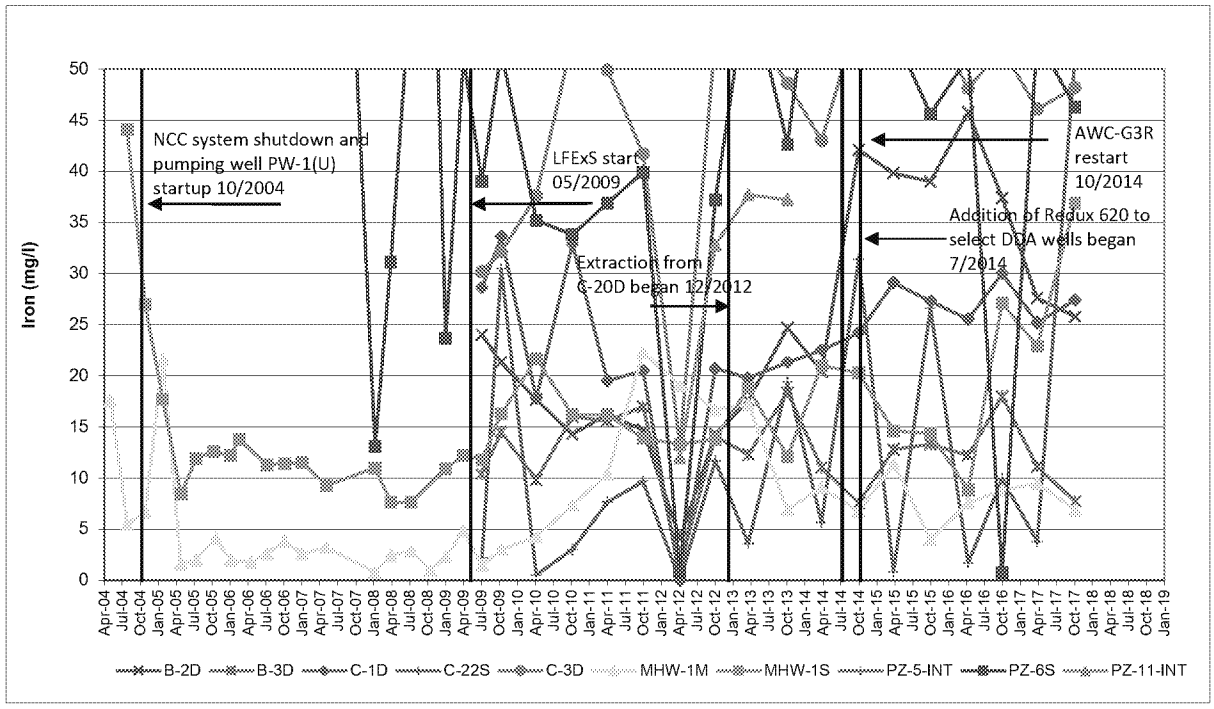

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA Groundwater - LFExS Monitoring Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-2D
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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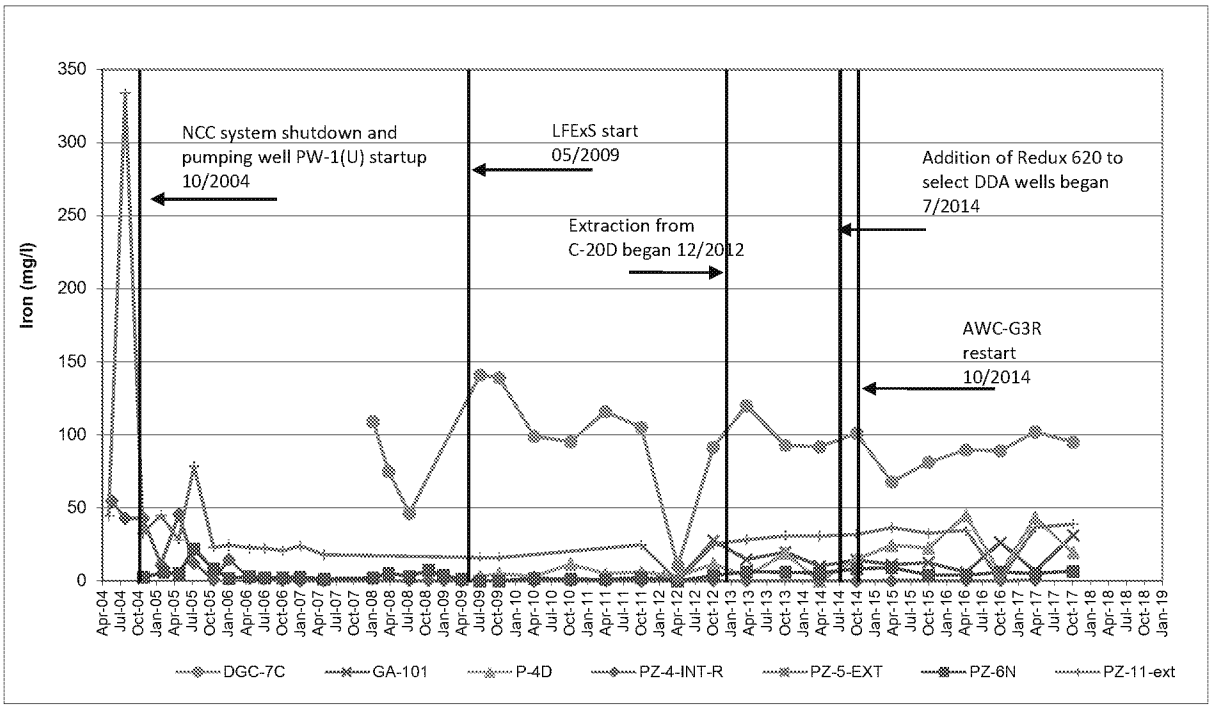

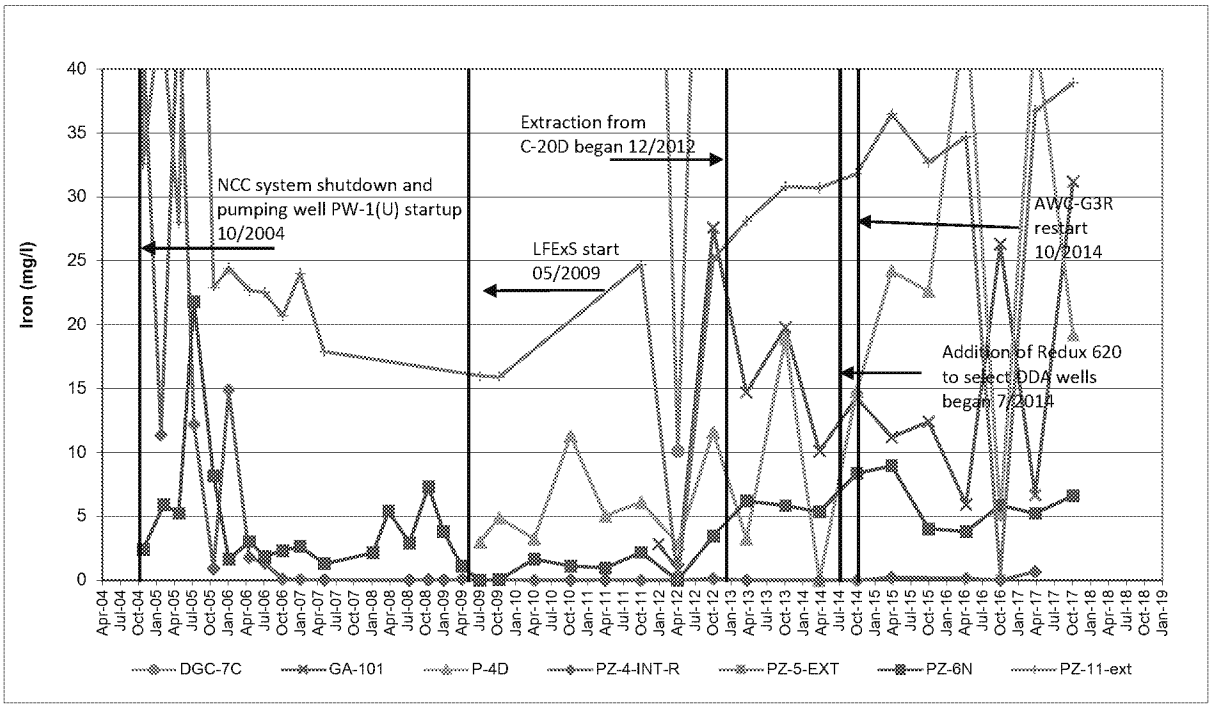

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA Monitoring Well Trends

Golder Associates	Project Number:	013-6052	**FIGURE F-3D**
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/27/2018	

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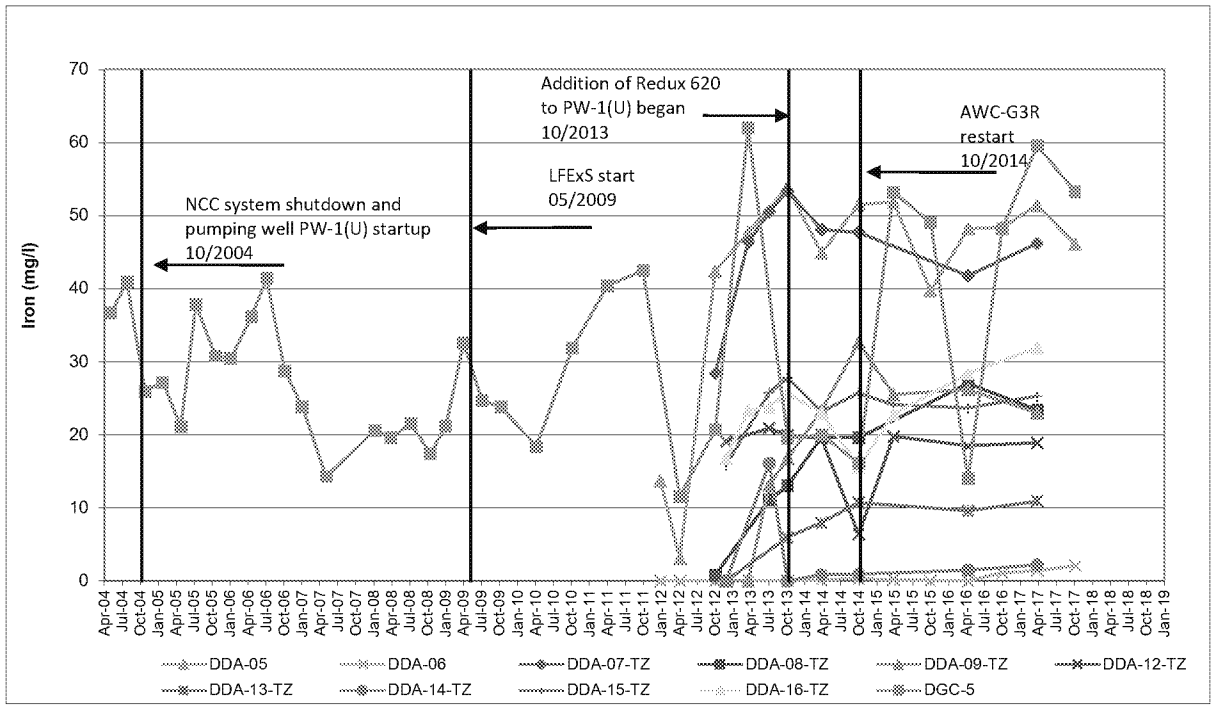

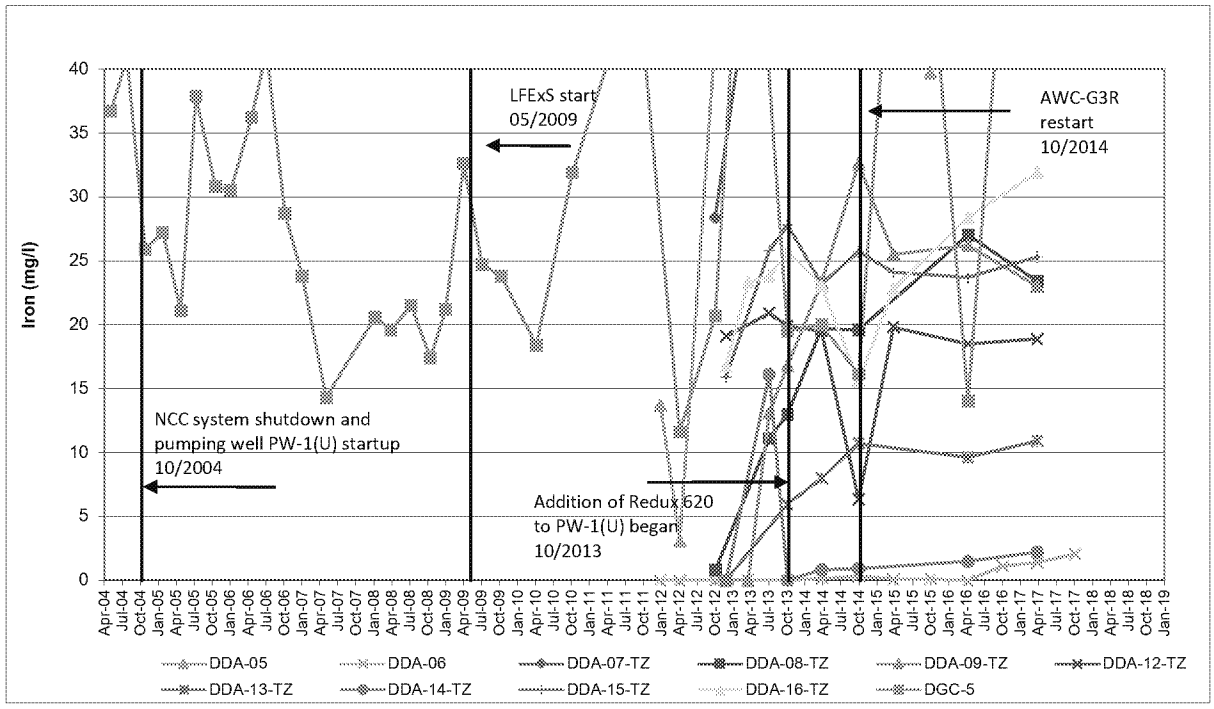

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA to Well PW-1(U) UPCU Transition Zone Trends

Golder Associates	Project Number:	013-6052	FIGURE F-4D
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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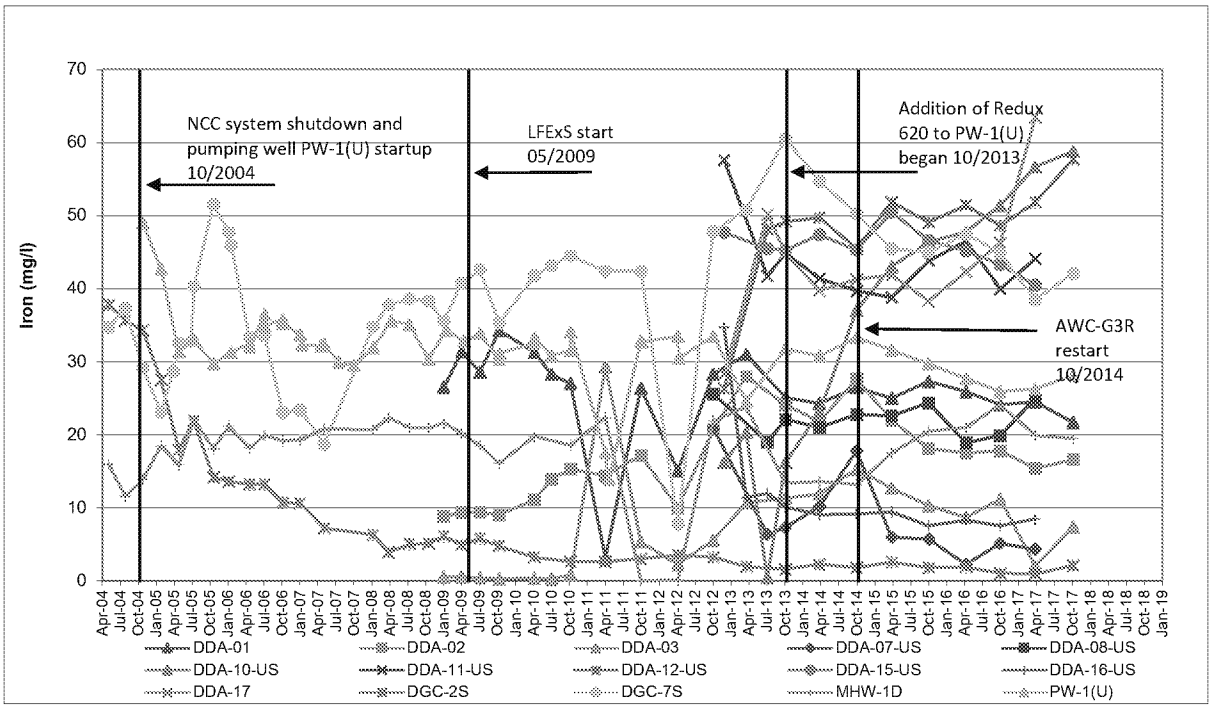

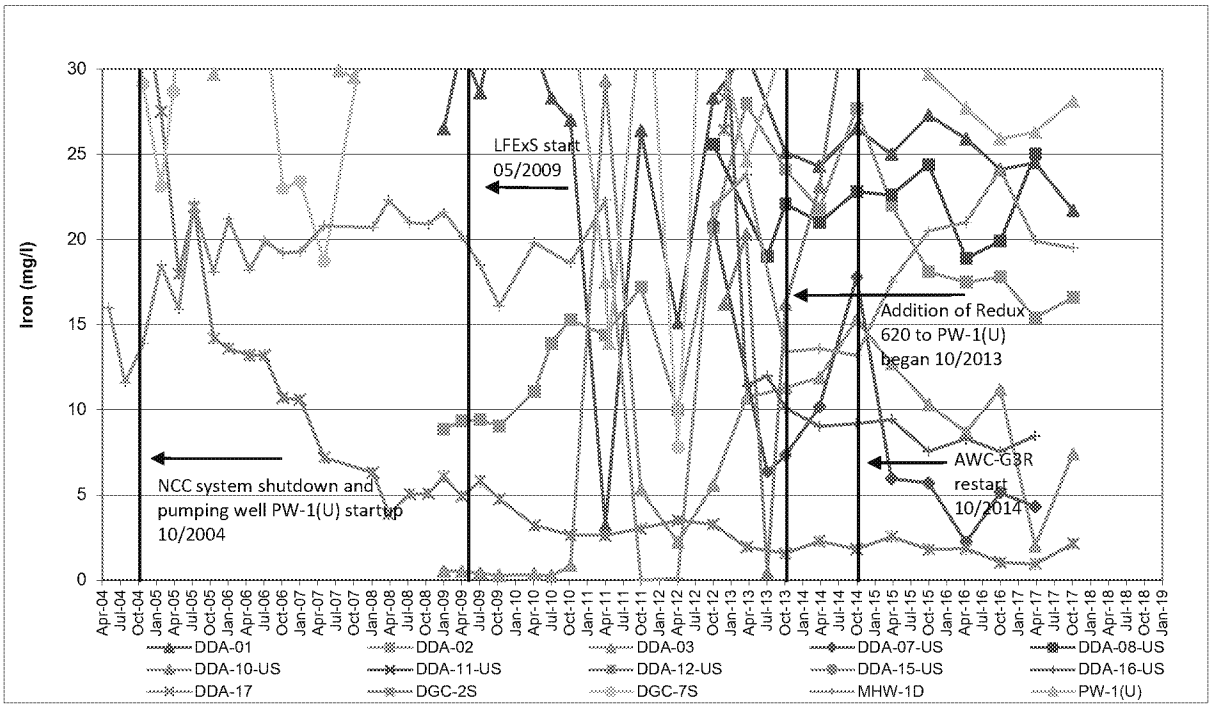

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA to Well PW-1(U) UPA Trends

Golder Associates	Project Number:	013-6052	FIGURE F-5D
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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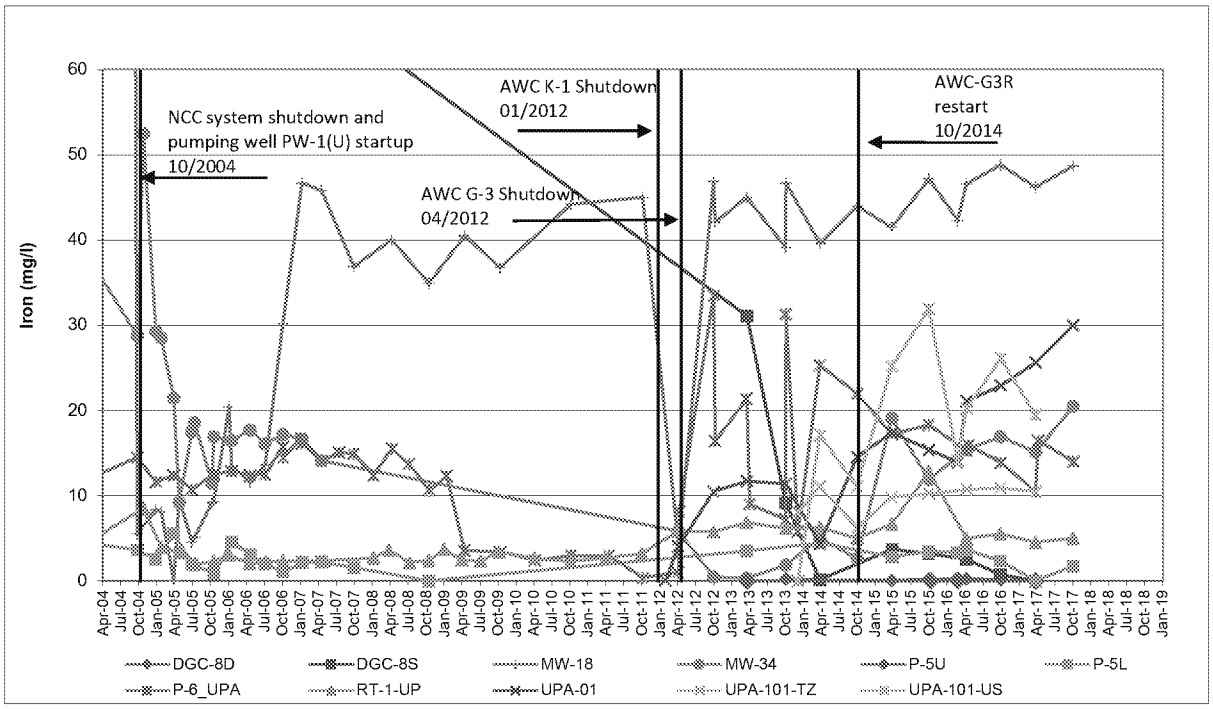
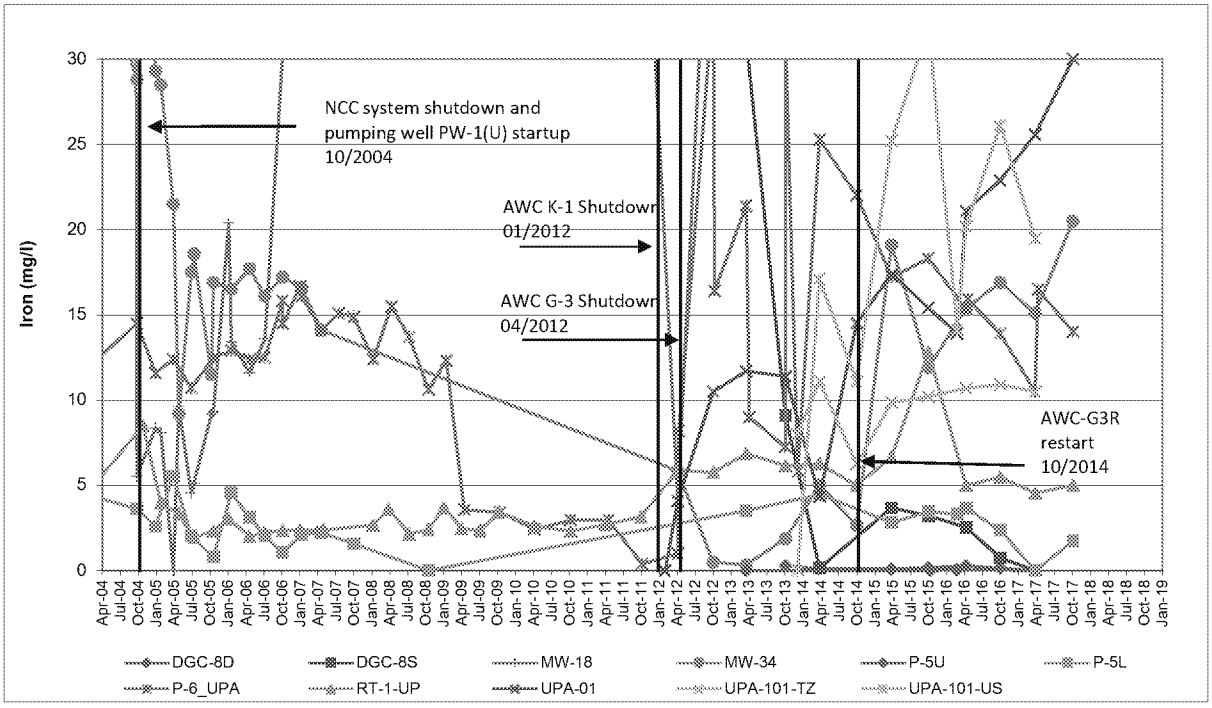
NORMAL SCALE



NORMAL SCALE, <30 mg/l



Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient of Well PW-1(U) Trends - Well P-6 Area

Golder Associates	Project Number:	013-6052	FIGURE F-6D
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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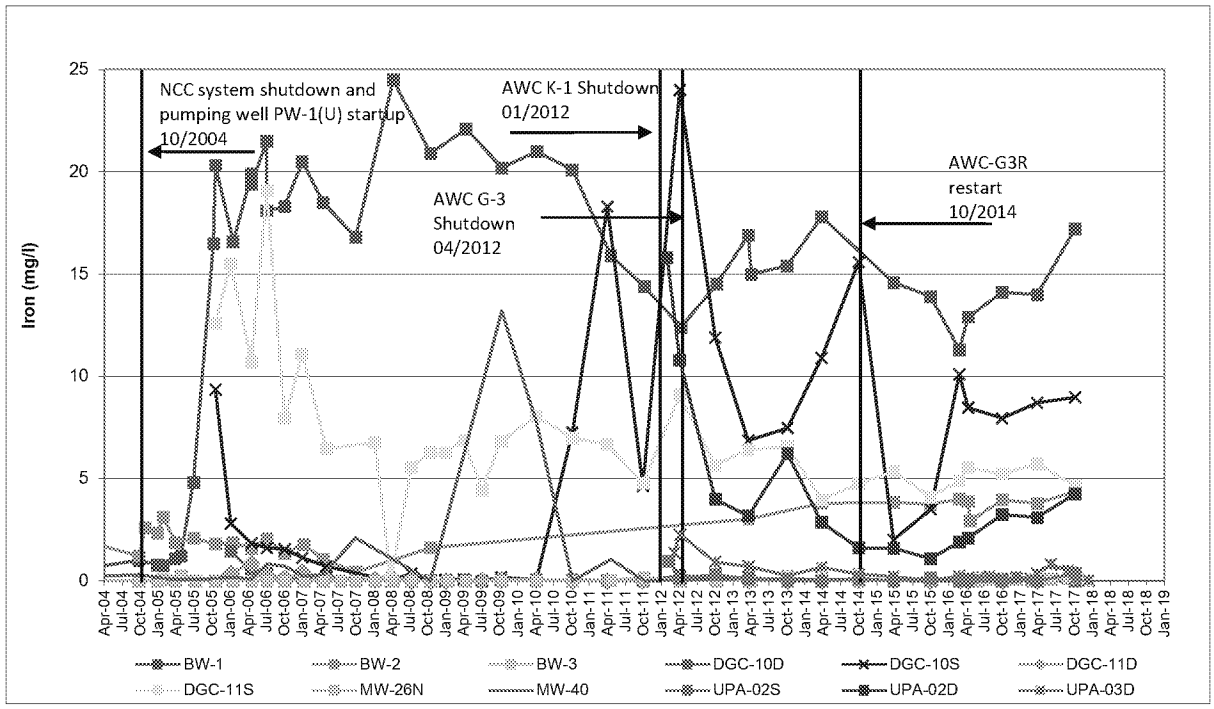

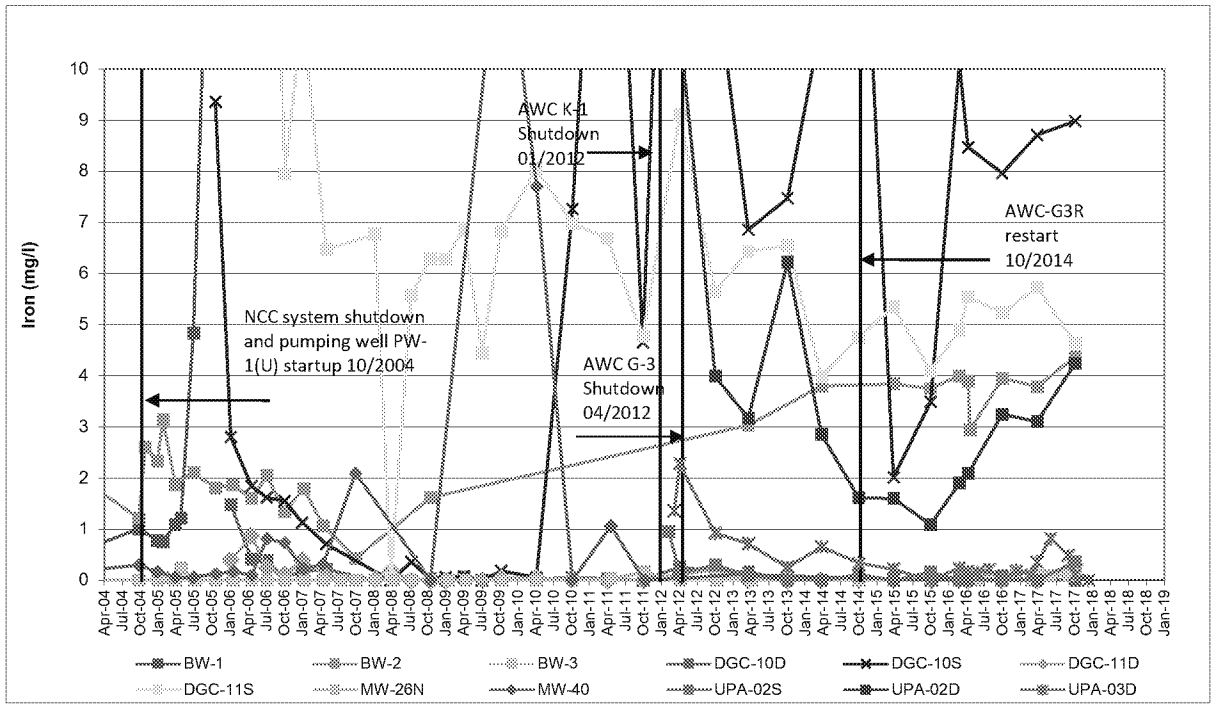

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient of Well PW-1(U) Trends

Golder Associates	Project Number:	013-6052	FIGURE F-7D
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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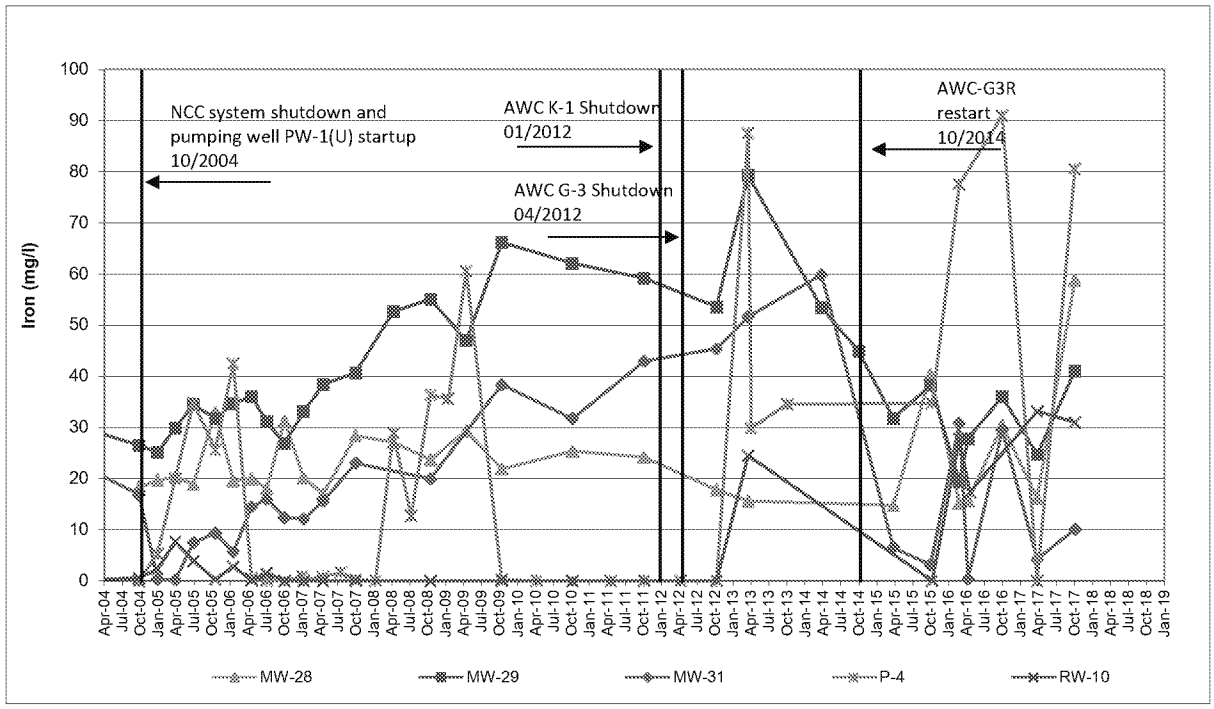

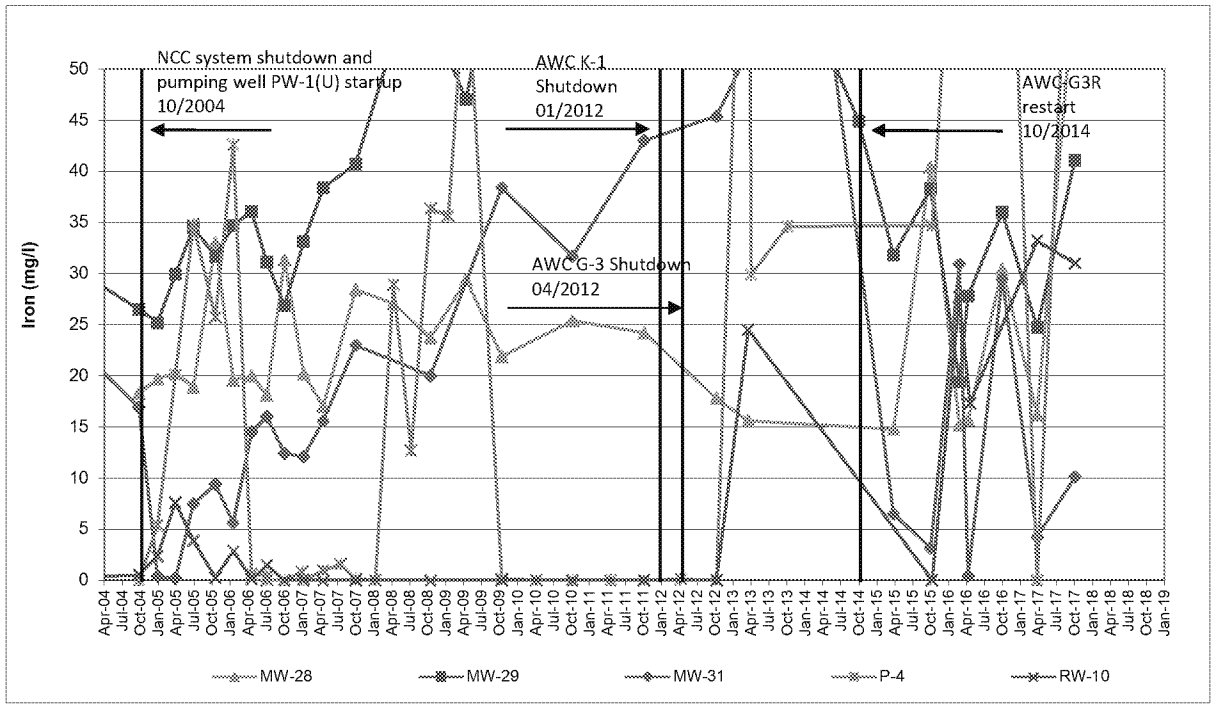

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient - Western Edge NCC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-8D
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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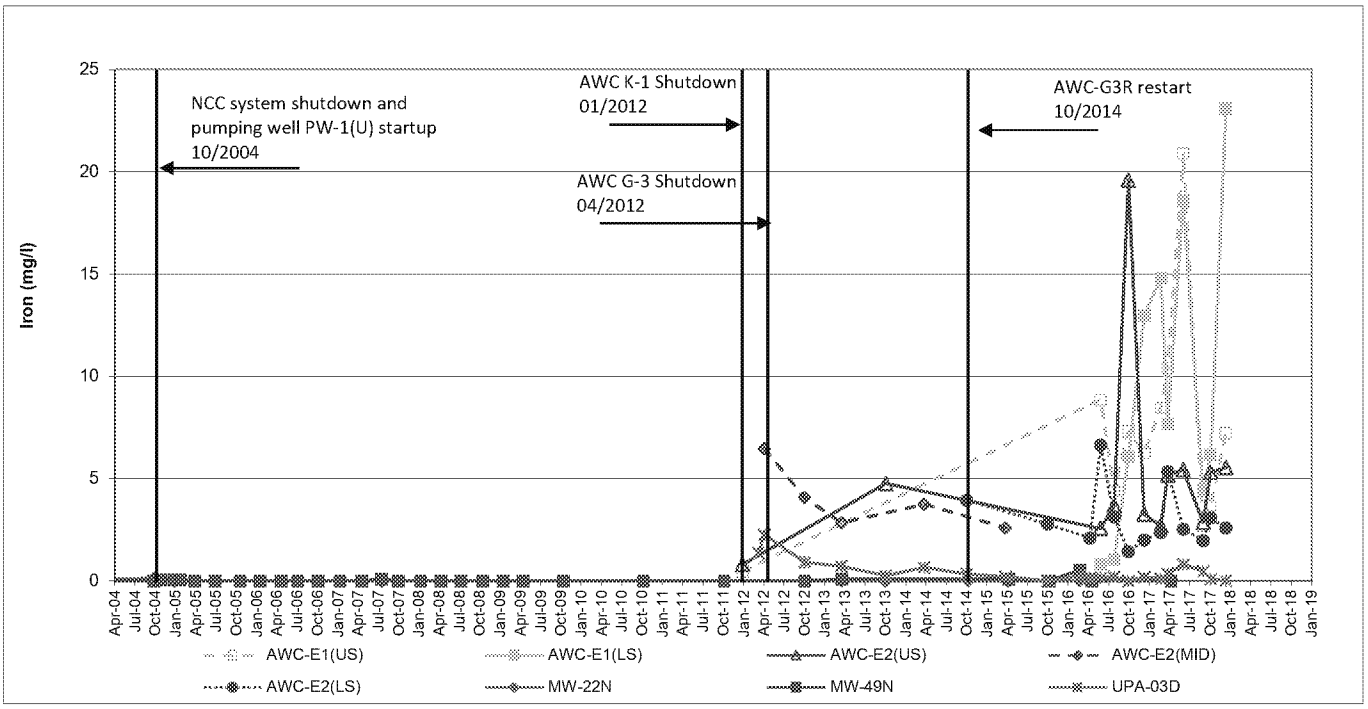

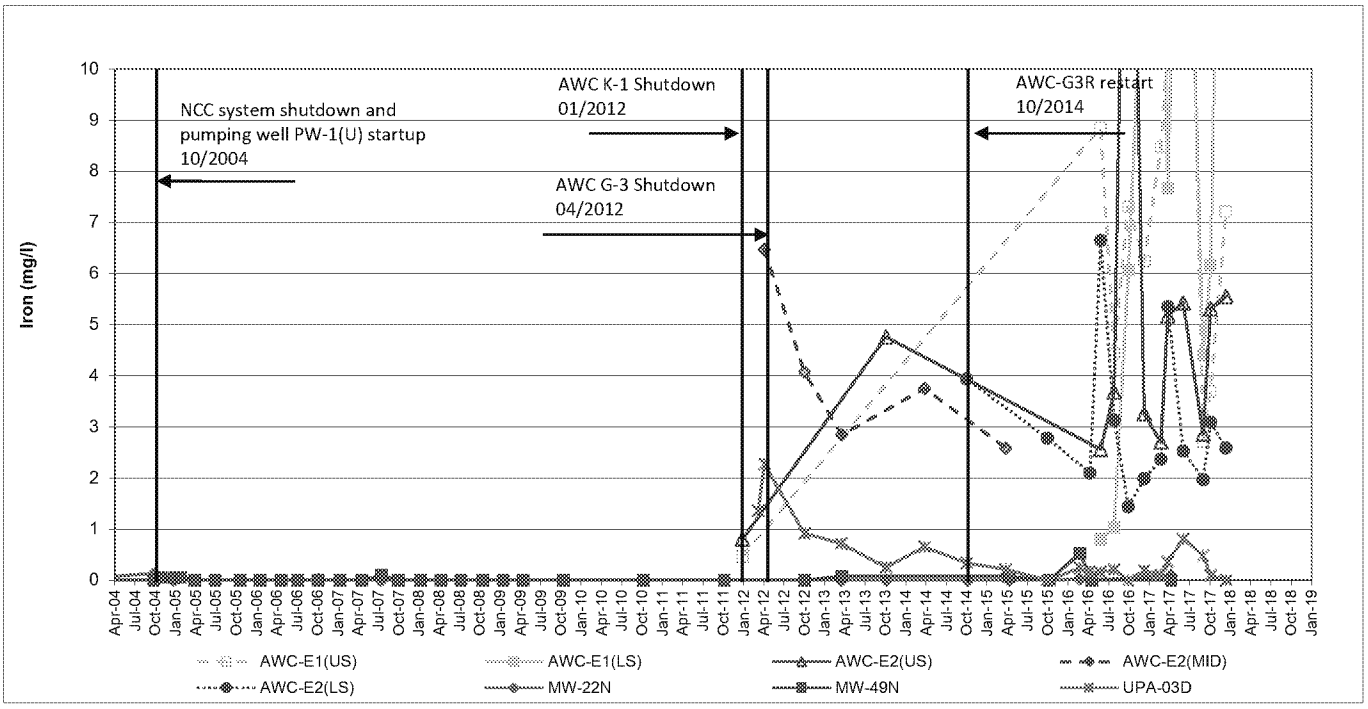

Notes: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052		FIGURE F-9D
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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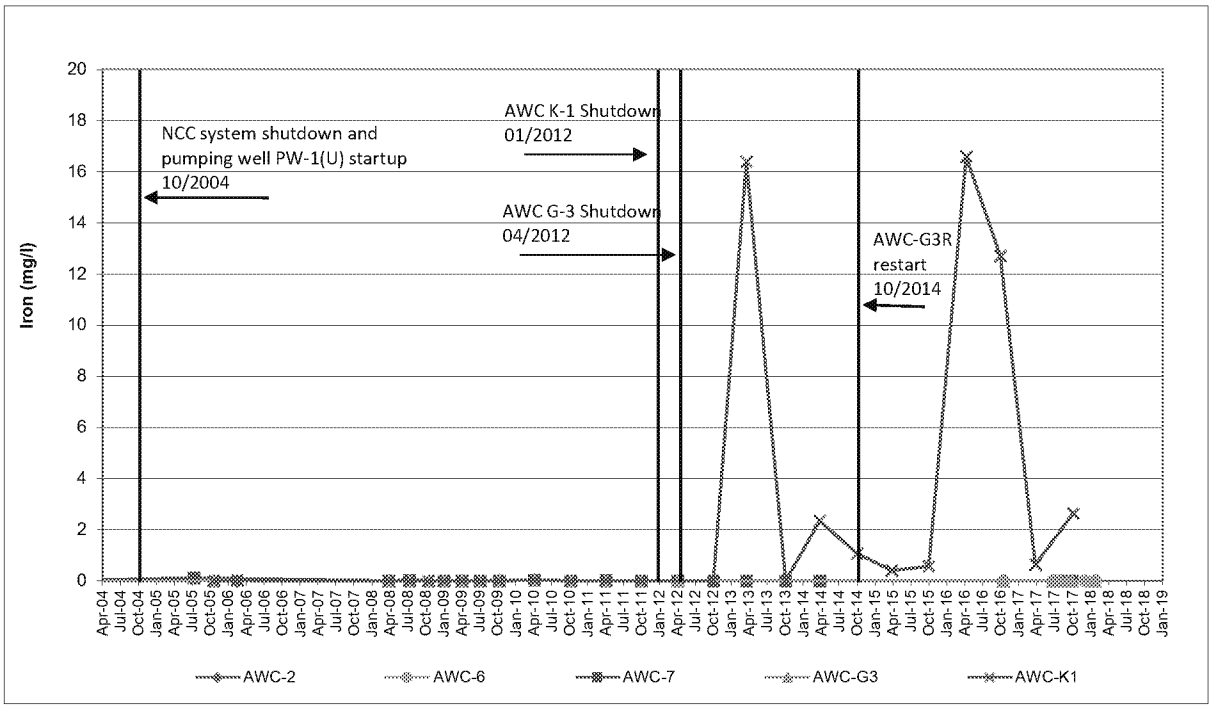
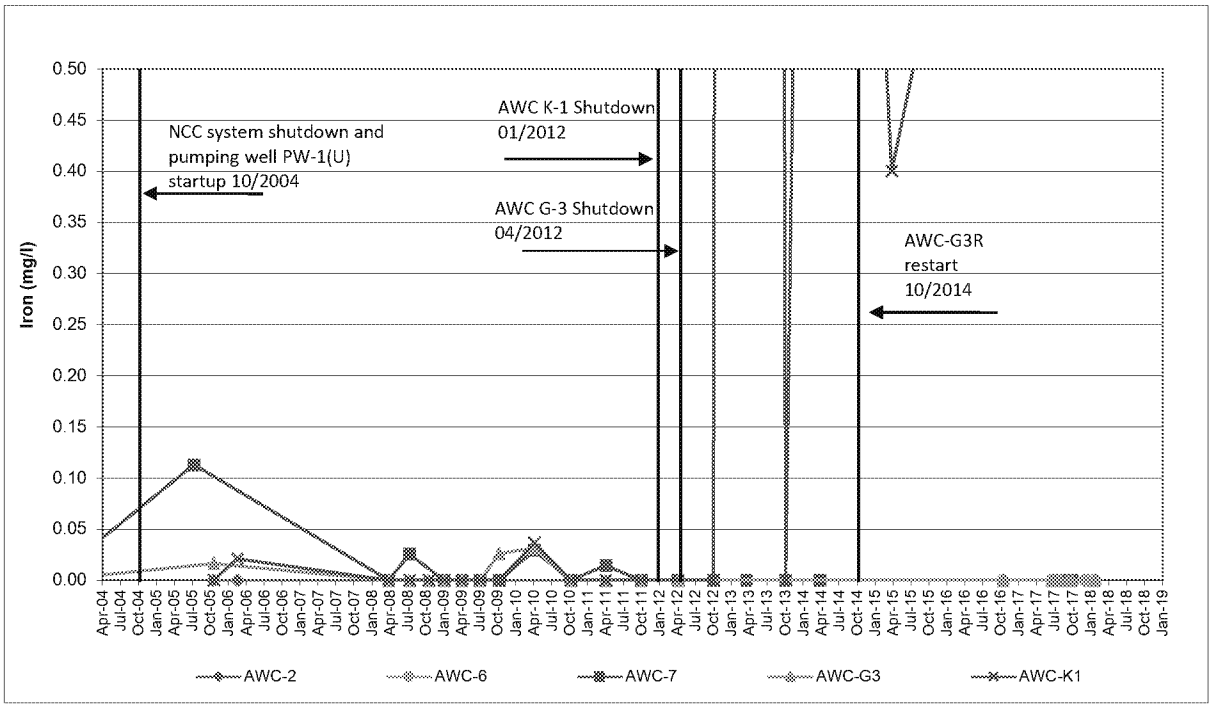
NORMAL SCALE



NORMAL SCALE, <0.5 mg/l



Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10D
	Prepared by:	TGB 11/9/2017	
	Checked by:	BPC 2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/27/2018	

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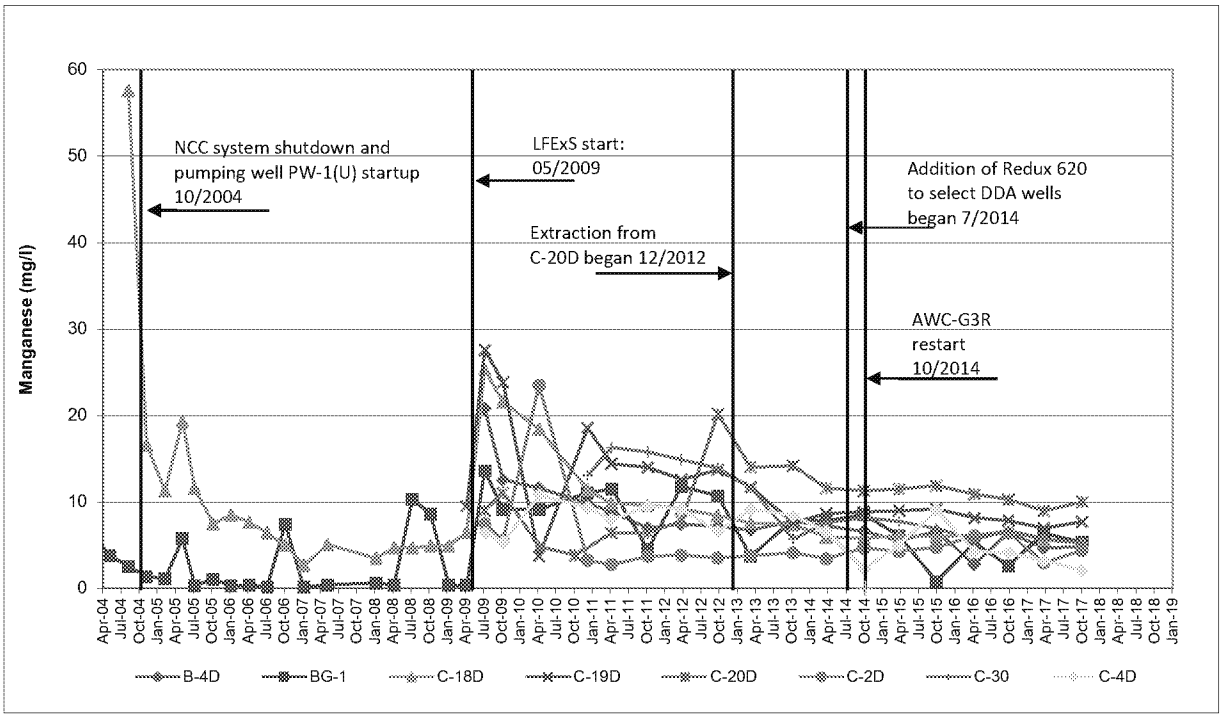

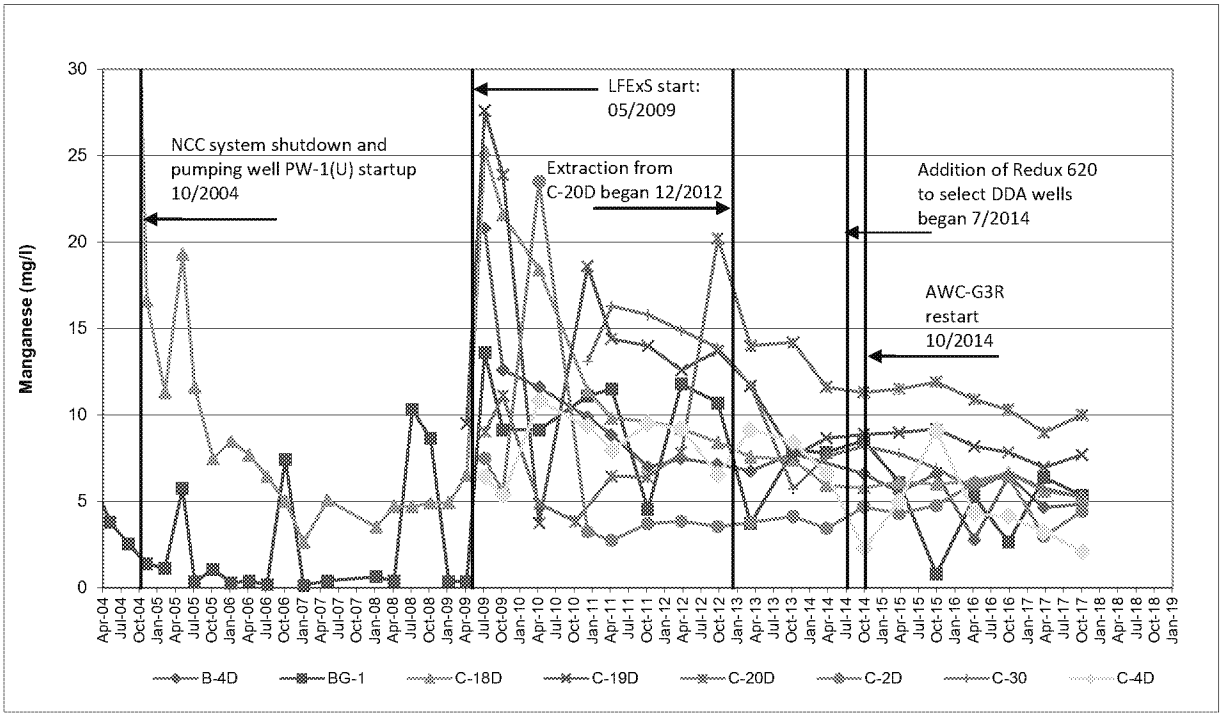

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA Groundwater - LFExS Extraction Well Trends

Golder Associates	Project Number:	013-6052		**FIGURE F-1E**
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM	2/27/2018	

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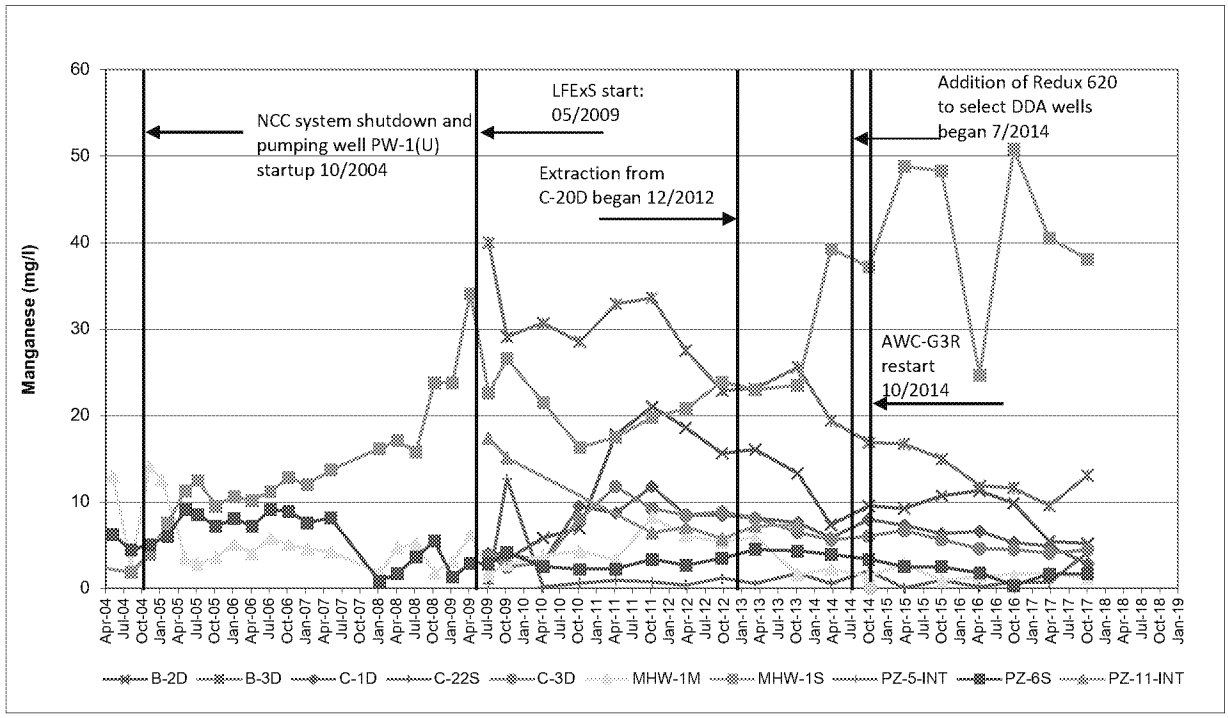

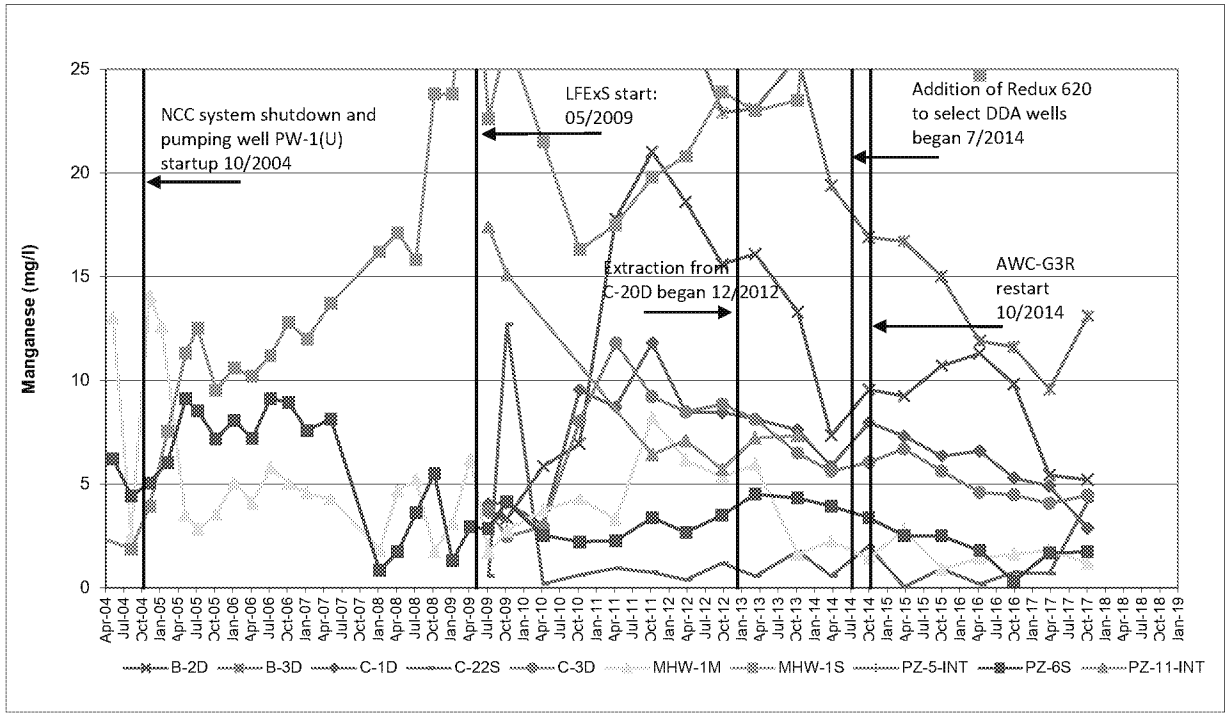

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA Groundwater - LFExS Monitoring Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-2E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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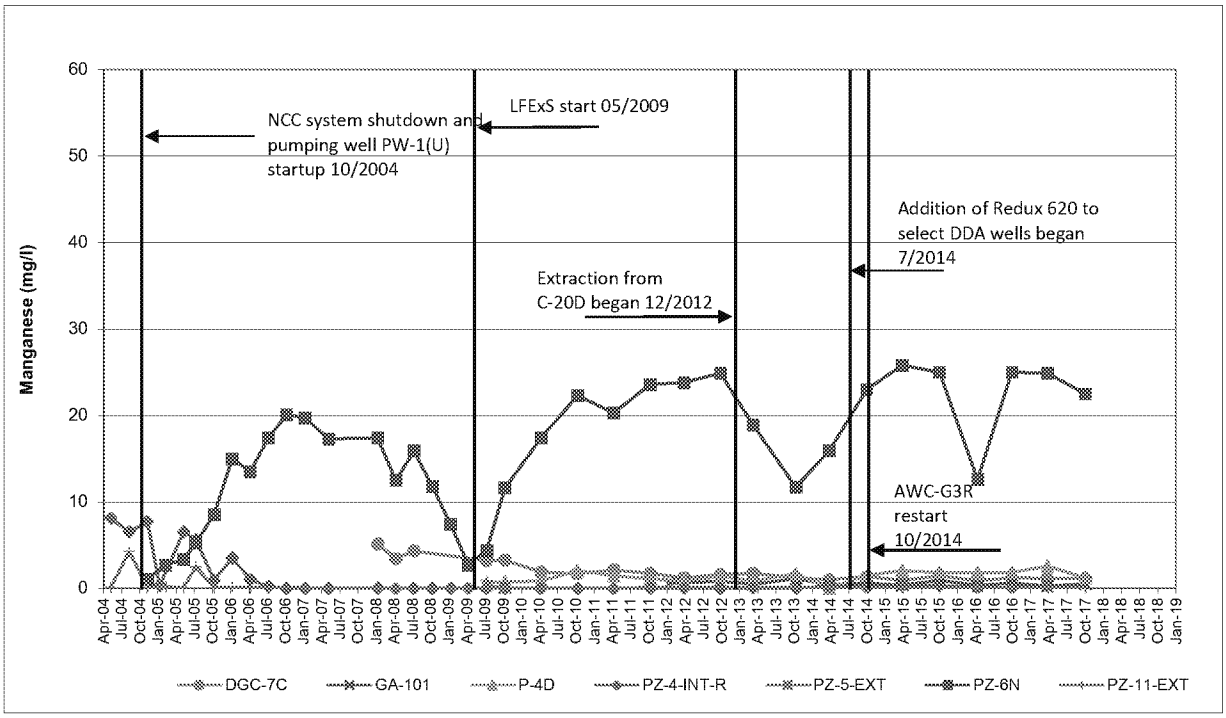

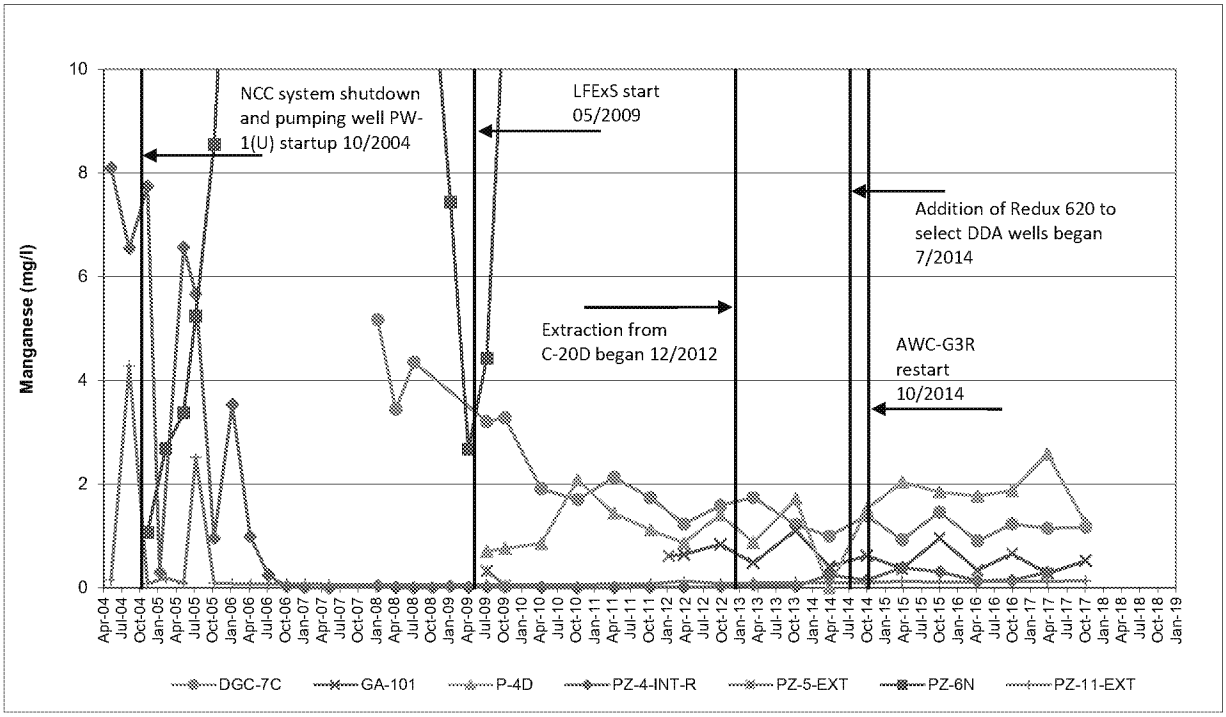

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA Monitoring Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-3E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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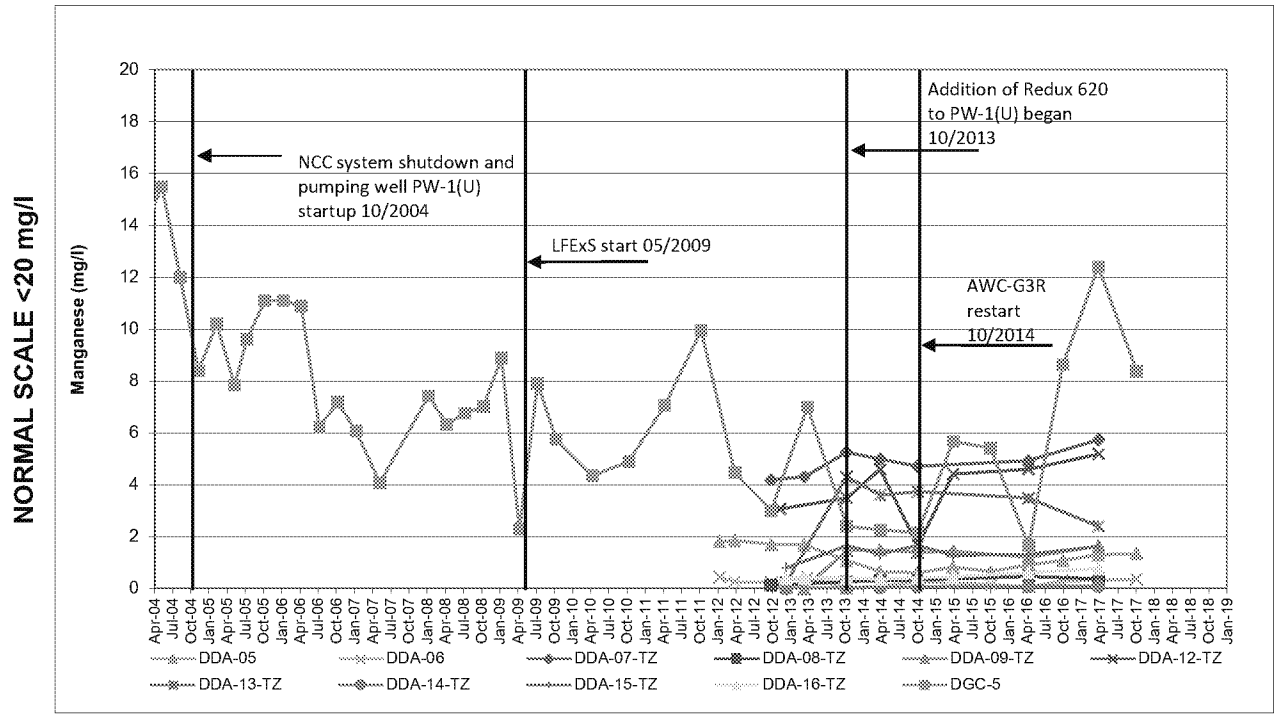

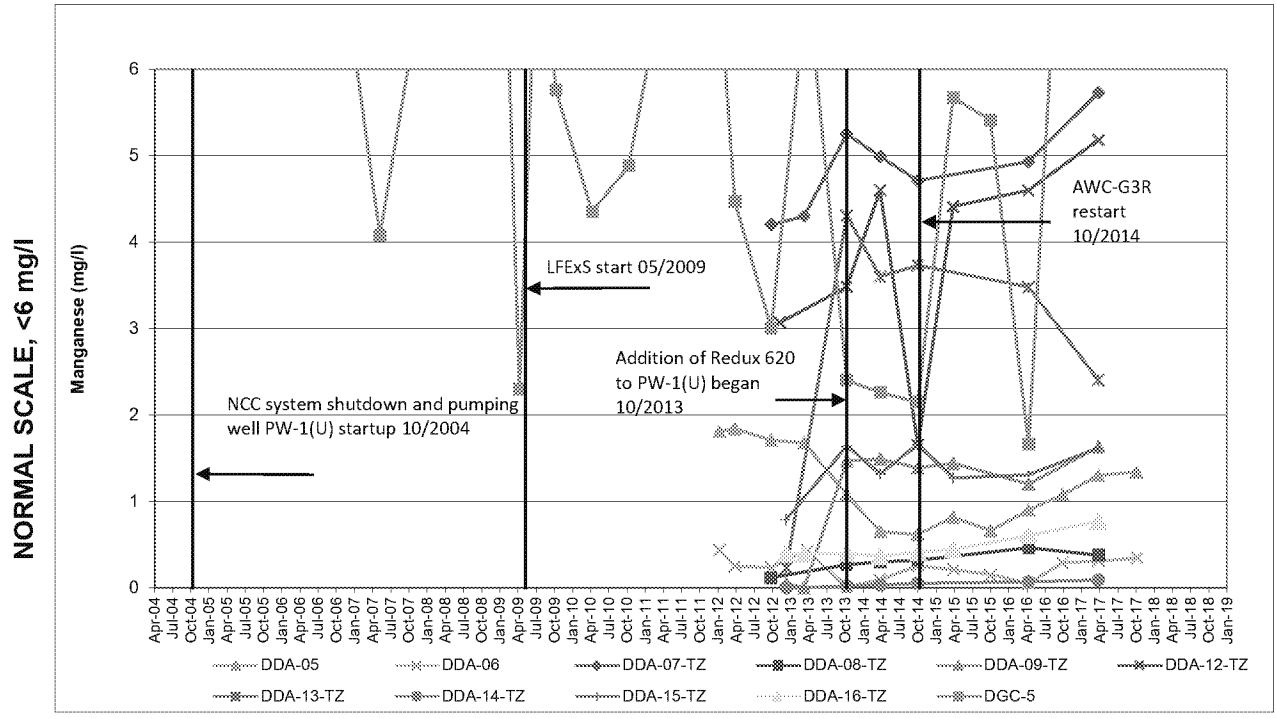

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA to Well PW-1(U) UPCU Transition Zone Trends

Golder Associates	Project Number:	013-6052		FIGURE F-4E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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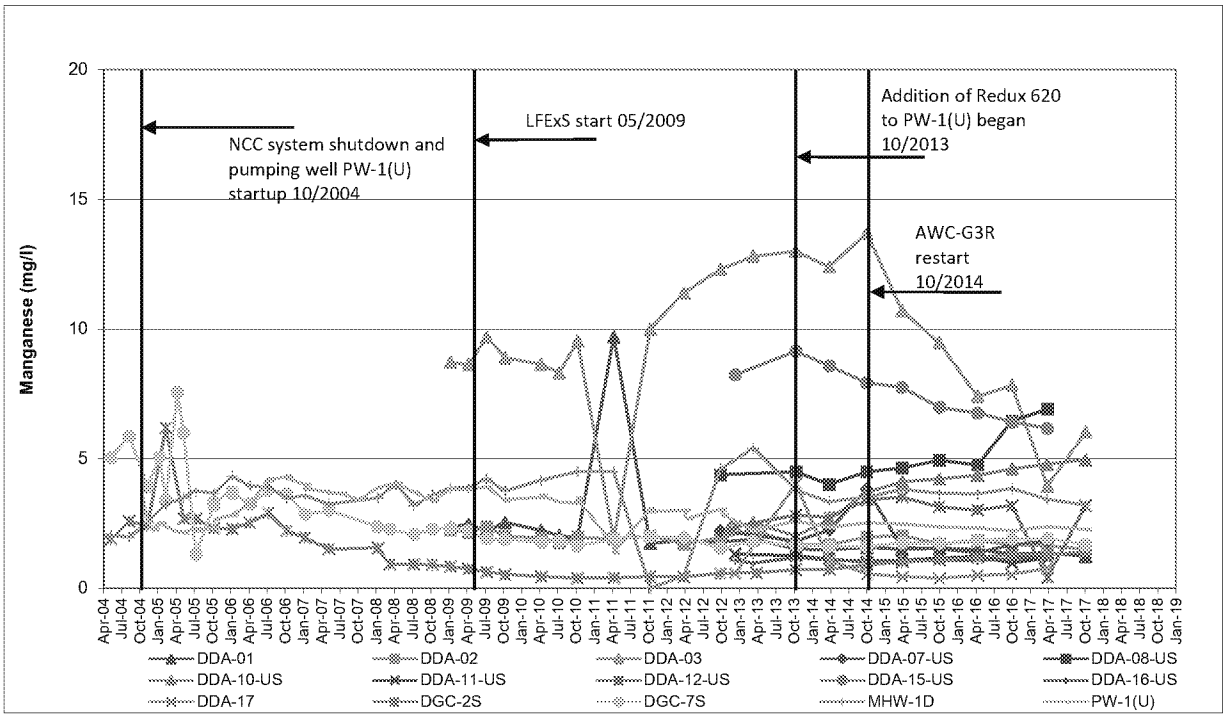

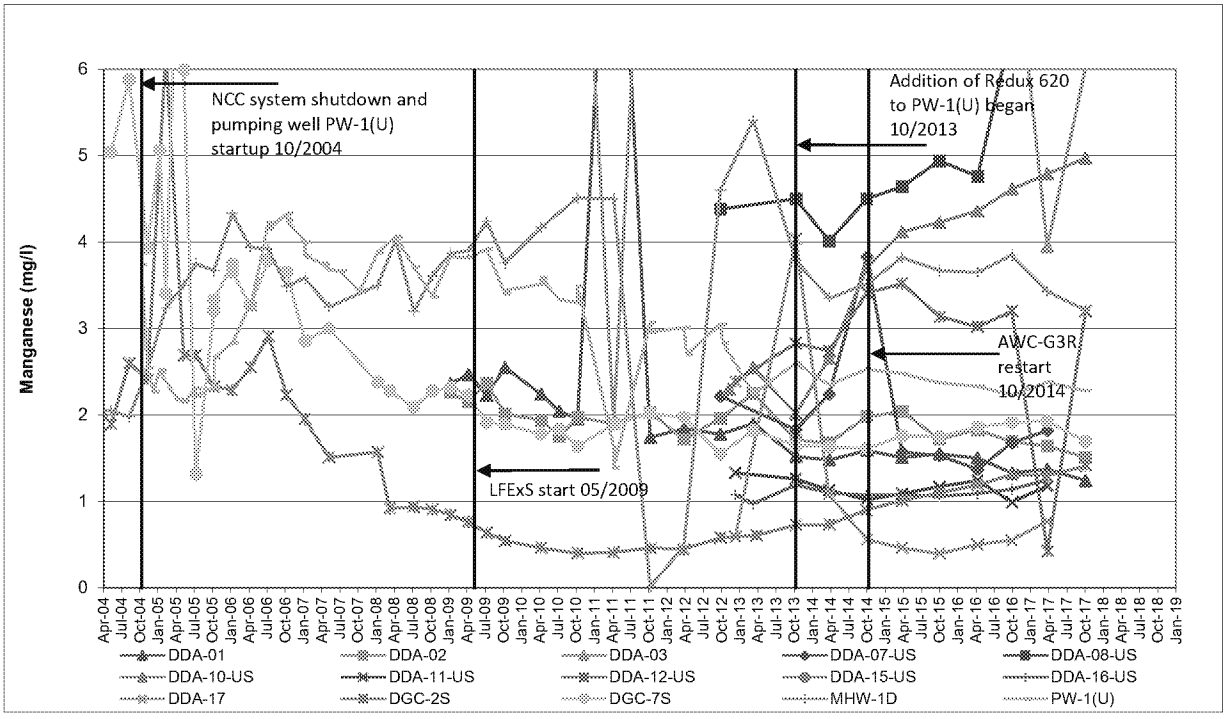

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA to Well PW-1(U) UPA Trends

Golder Associates	Project Number:	013-6052		FIGURE F-5E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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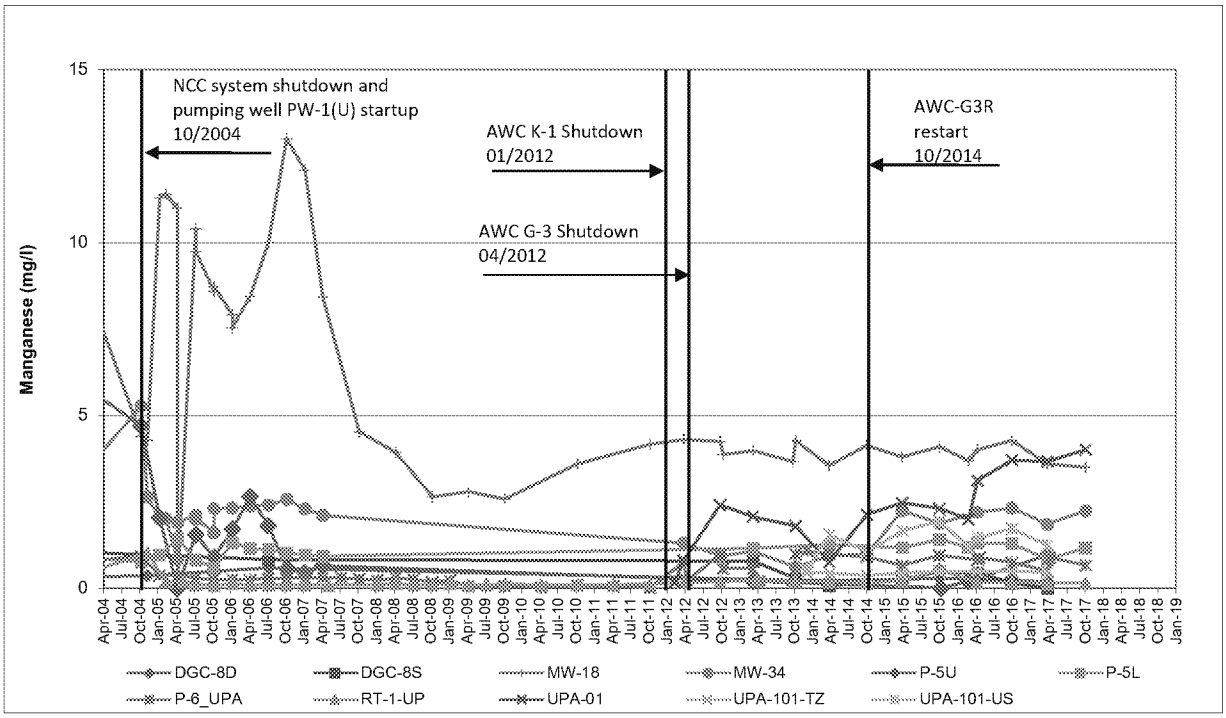
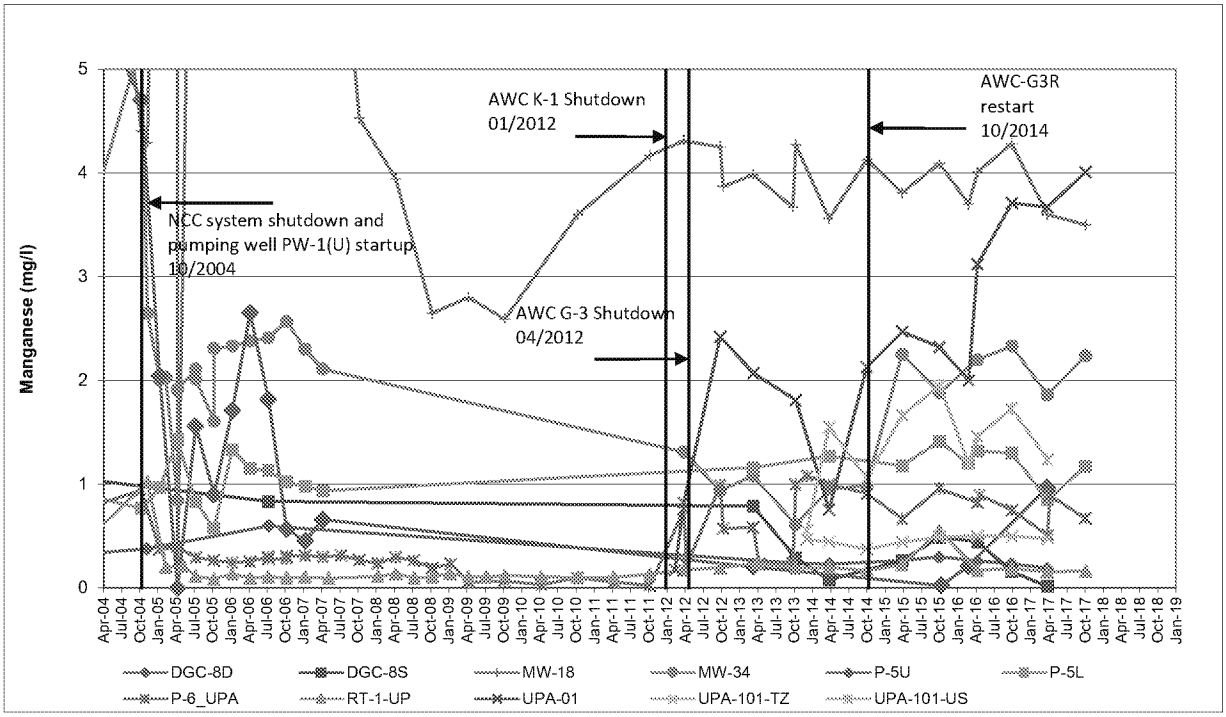
NORMAL SCALE, <15 mg/l



NORMAL SCALE, <5 ug/l



Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - UPA Downgradient of Well PW-1(U) Trends - Well P-6 Area

Golder Associates	Project Number:	013-6052		FIGURE F-6E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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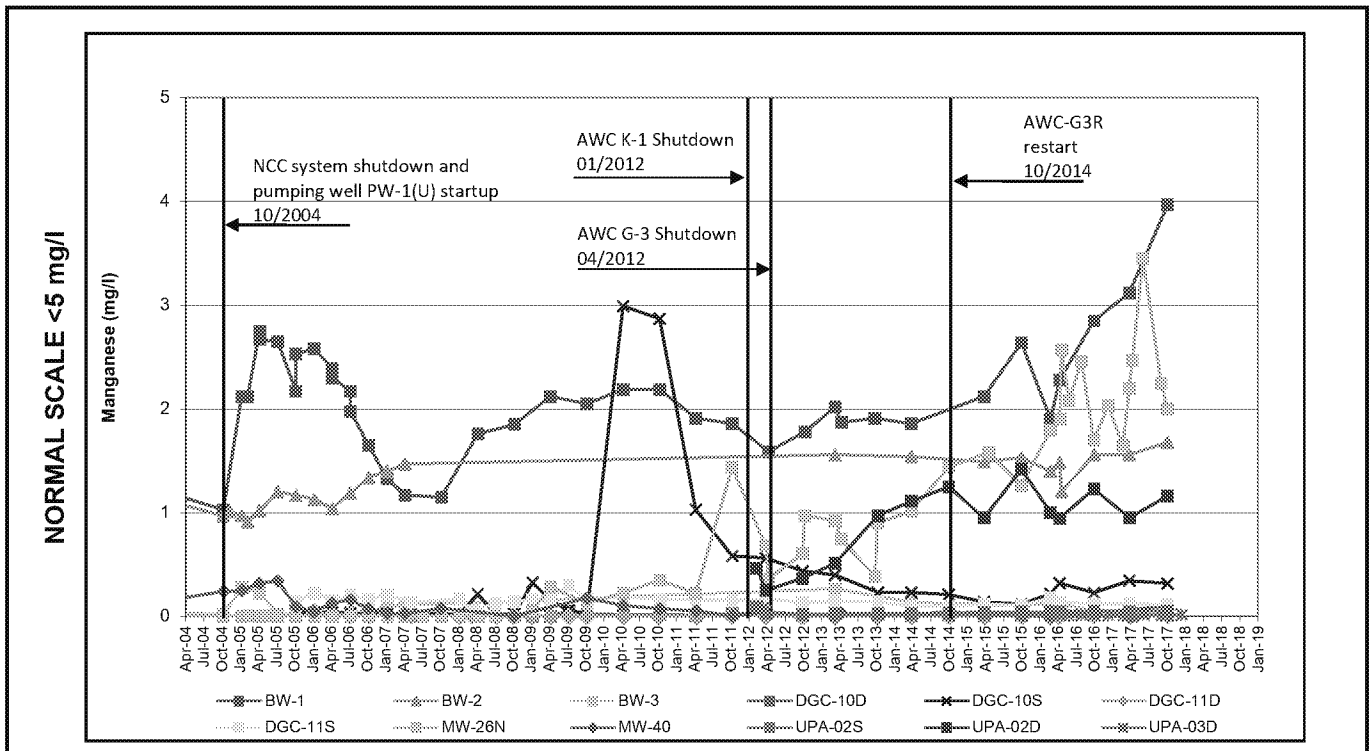

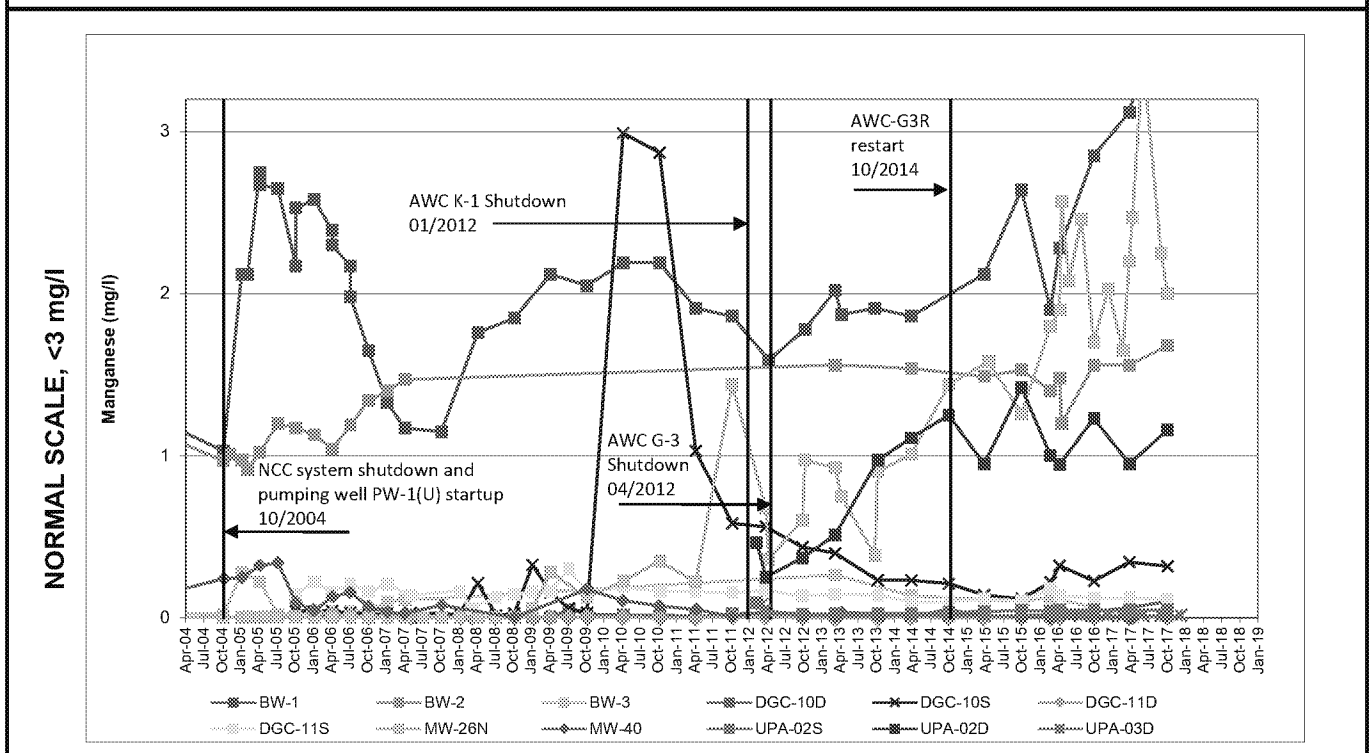

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - UPA Downgradient of Well PW-1(U) Trends

Golder Associates	Project Number:	013-6052		FIGURE F-7E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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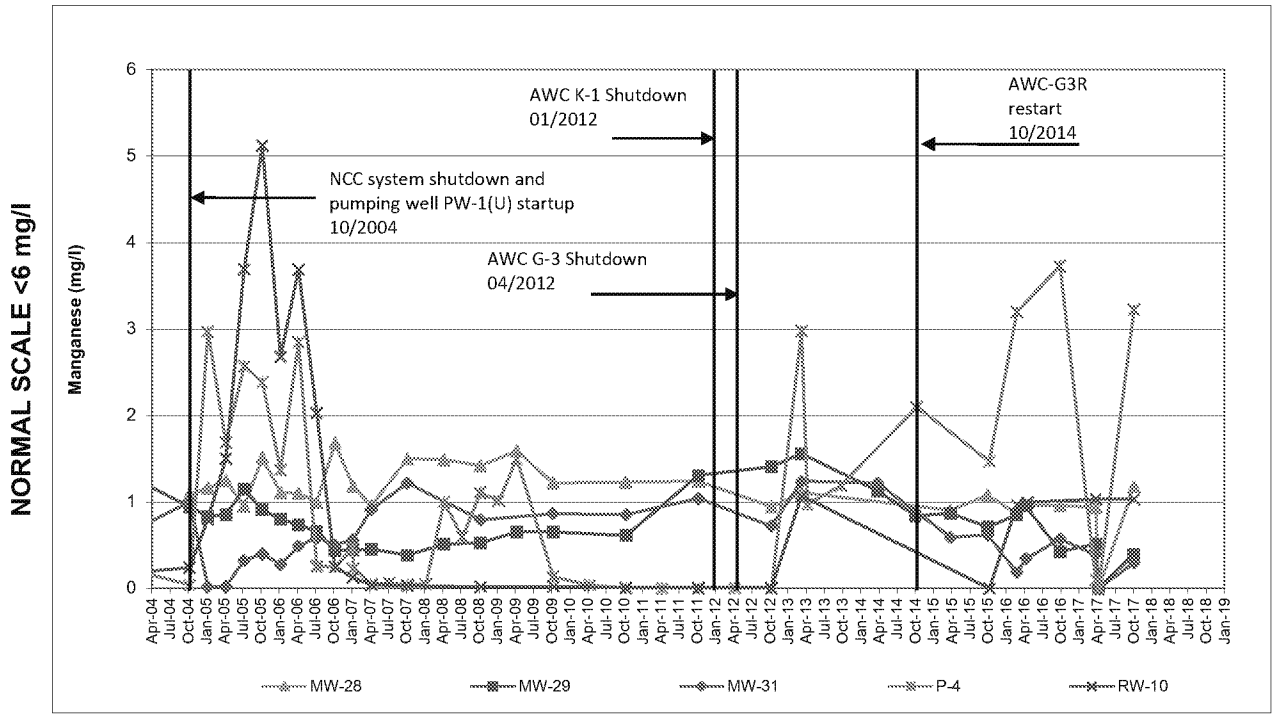

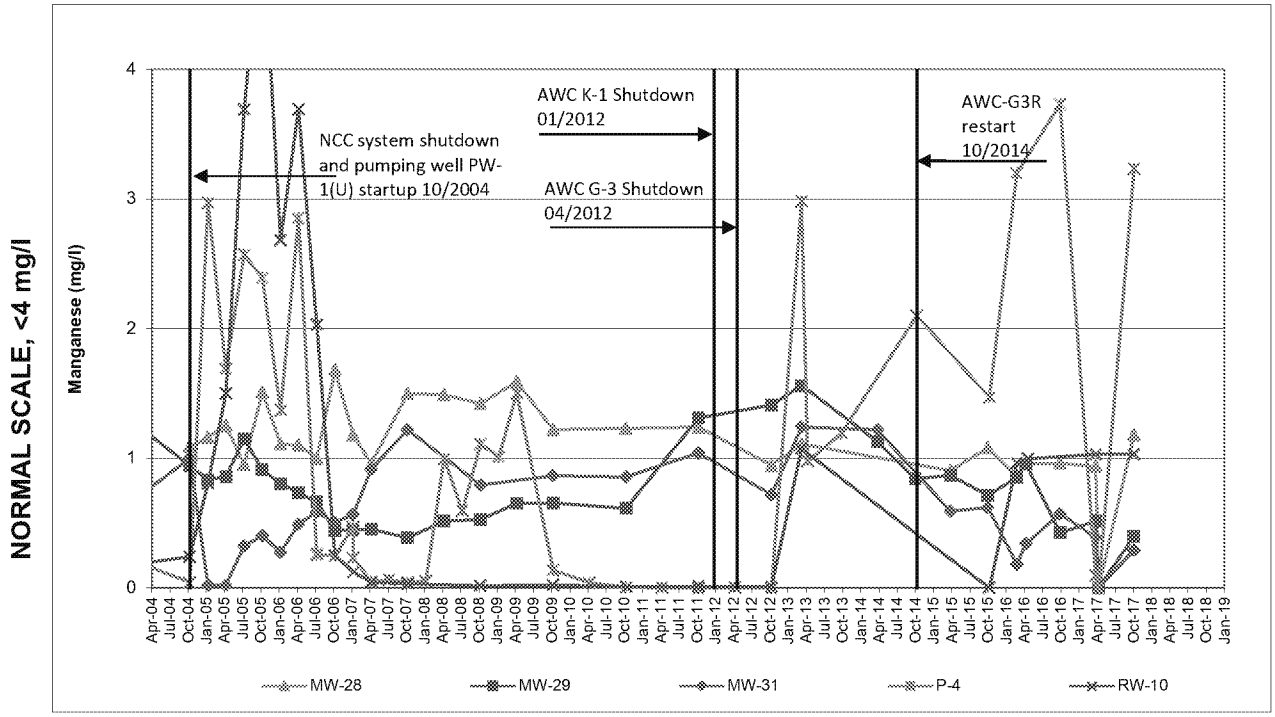

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results..

Manganese - UPA Downgradient - Western Edge NCC Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-8E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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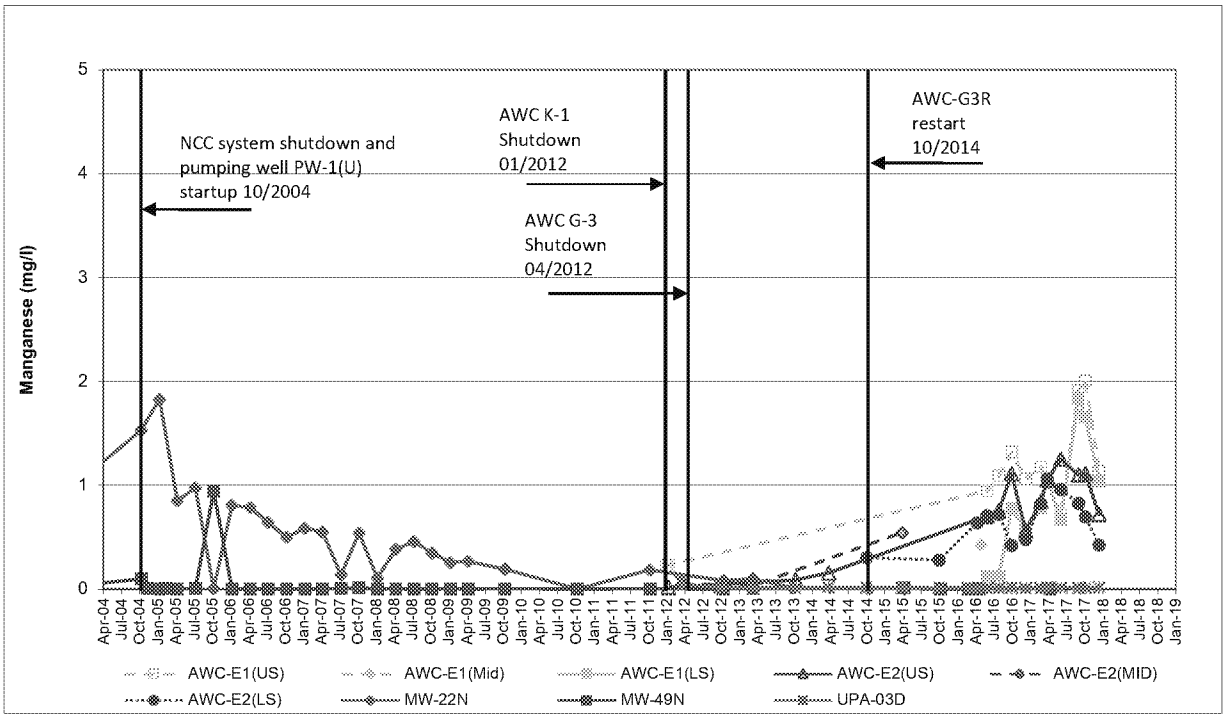

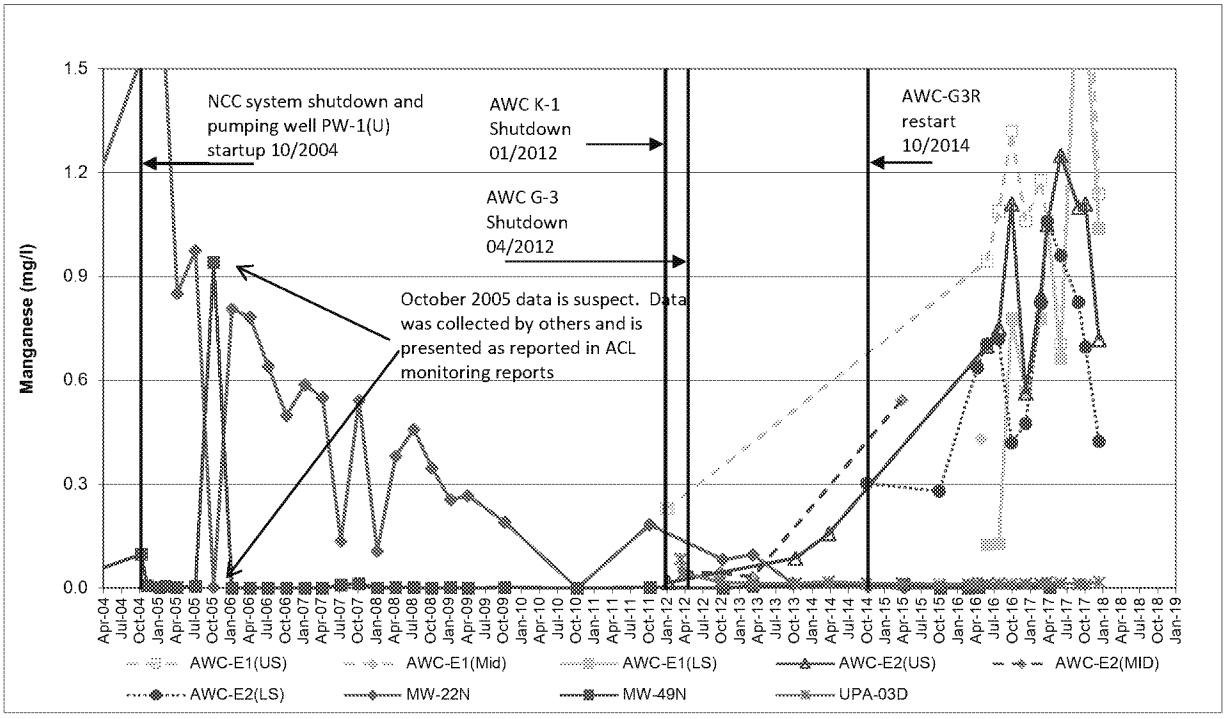

Notes: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

On May 4 2016, AWC collected a combined sample from the shallow and deep aquifer at AWC-E1 via a 3x purge of the entire screen.

Manganese - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052		FIGURE F-9E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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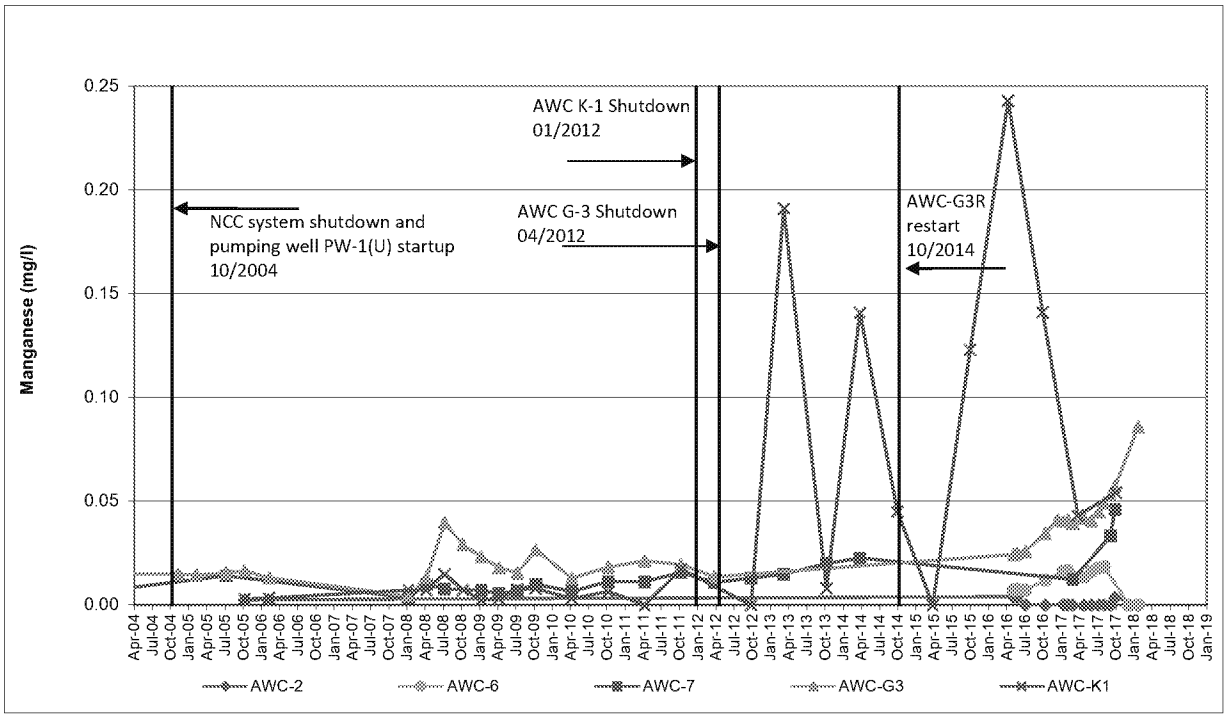

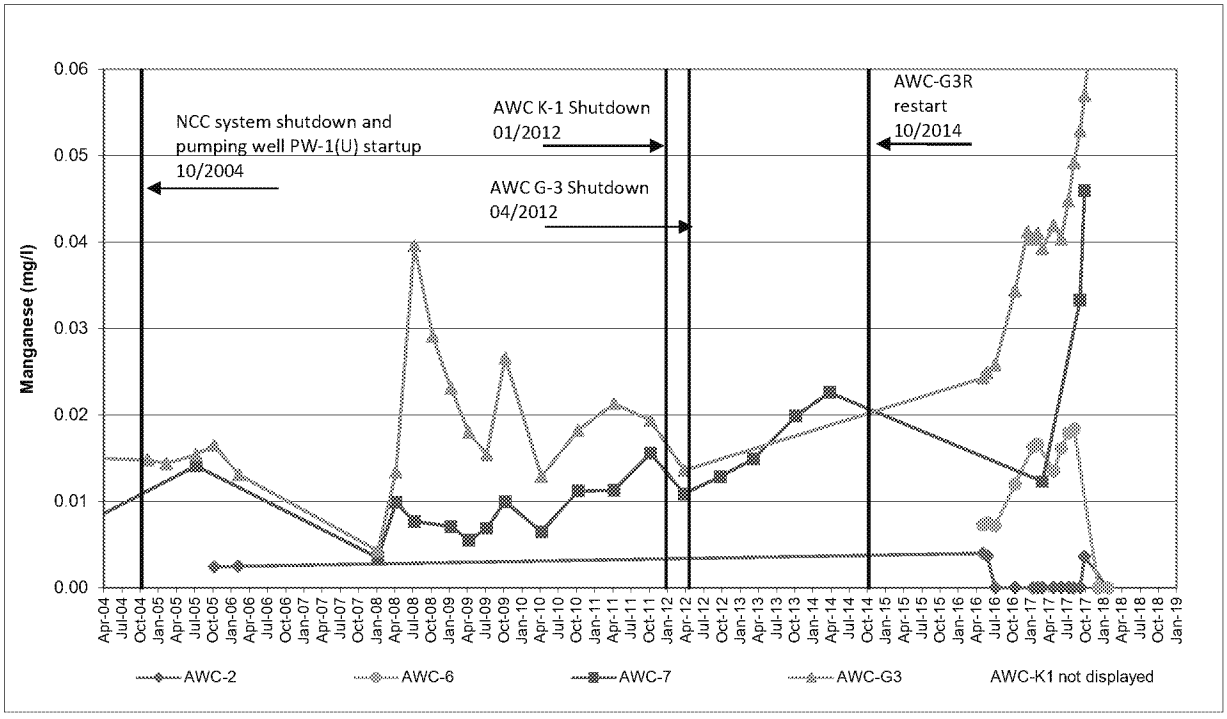

Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-10E
	Prepared by:	TGB	11/9/2017	
	Checked by:	BPC	2/12/2018	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/27/2018	

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APPENDIX G

EFFLUENT ANALYTICAL REPORTS AND MASS LOADING ESTIMATES

Appendix Table G-1
PW-1 (U) and TTO Metals Mass Loading Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

PW-1 (U) DISCHARGE	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (ug/l) Based on Permitted Flow Rate												
		Analytical Date	4/7/2016			9/30/2016			3/27/2017			10/9/2017		
Total Metals (ug/L)	**39**	**Method Number**	**E200.7**	**E245.1**	**ISM01.3**	**E200.7**	**E245.1**	**ISM01.3**	**E200.7**	**E245.1**	**ISM01.3**	**E200.7**	**E245.1**	**ISM02.3**
Arsenic	0.04215	90	<3.1		3.2	<3.1		2.8	<3.1		2.8	<3.1		2.9
Cadmium	0.00141	3	<1.6		<1.0	<1.6		<0.22	<1.6		<0.22	<1.6		<0.15
Chromium	0.02342	50	<4.6		<2.0	<4.6		<0.13	<4.6		<0.13	<4.6		<0.13
Copper	0.04684	100	<5.6		<2.0	<5.6		1.3 J	48		38.7	<5.6		7.9
Lead	0.02295	49	10.1		0.91	<4.3		2.2 B	7.1		4.1	<4.3		1.1
Mercury	0.00014	0.3		<0.14	<0.044		<0.17	<0.044		<0.17	<0.075		<0.17	<0.075
Molybdenum*	0.00000	0.0	<4.5			<4.5			<4.5			<4.5		
Nickel	0.35128	751	<5.5		4.6	<5.5		3.9	<5.5		5.1	<5.5		5.3
Selenium	0.23419	500	<4.6		4 J	<4.6		3.4 J	<4.6		3.9 J	<4.6		3.4 J
Zinc	0.08197	175	<5.2		21.5	14.5 J		11.5	58.1		62	<5.2		22.4

LFExS Discharge TTO	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (ug/l) Based on Permitted Flow Rate								
		Analytical Date	4/7/2016		9/30/2016		3/27/2017		10/9/2017	
Total Metals (ug/L)	**12**	**Method Number**	**E200.7**	**E245.1**	**E200.7**	**E245.1**	**E200.7**	**E245.1**	**E200.7**	**E245.1**
Arsenic	0.012970	90	6.8		6.8		4.3 J		7.1	
Cadmium	0.000432	3	<1.6		<1.6		<1.6		<1.6	
Chromium	0.007206	15	<4.6		<4.6		<4.6		<4.6	
Copper	0.014412	31	6.7		12.4 J		15.7 J		<5.6	
Lead	0.007062	15	12		6.9		<4.3		4.7 J	
Mercury	0.000043	0.1		<0.14		<0.17		<0.17		<0.17
Molybdenum*	0.000000	0.0	<4.5		<4.5		<4.5		<4.5	
Nickel	0.108086	231	12		15.5 J		11.9 J		8.6 J	
Selenium	0.072058	154	<4.6		<4.6		<4.6		<4.6	
Zinc	0.025220	54	14.5		10.8 J		17.2 J		8.4 J	

Notes:
lb/day = pounds per day
gpm = gallons per minute
ug/L = micrograms per liter
NA = Not Available
Detection limits use method detection limit (MDL) values
Detection limits exceed permit limit
J = estimated result
B = Blank Contamination
TTO = total toxic organics
* Permit limit for molybdenum confirmed to be '0.000000 lb/day' based on review of discharge permit titled "Wastewater Discharge Permit WDP 04-107, Permit Revision 5" dated July 1, 2014

Prepared by: BPC
Checked by: TGB
Reviewed by: TAM

Appendix Table G-2
PW-1 (U) and TTO Wet Chemistry Mass Loading Estimate
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

PW-1 (U) DISCHARGE	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (mg/l) Based on Permitted Flow Rate				
Wet Chemistry (mg/L)	39	Analytical Date	4/7/2016	9/30/2016	3/27/2017	10/9/2017
Cyanide, Total	0.2295	0.49	<2.0	<0.01	<0.01	0.0019 J
Ammonia (SM4500-NH3)	16.393	35	0.61	0.65	0.6	0.49
Biochemical Oxygen Demand (SM5210B)	234.187	500	<0.87	4.1	3.5	3.2
Total Suspended Solids (SM2540D)	234.187	500	4.2	13.5	17	13.1

LFExS Discharge TTO	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (mg/l) Based on Permitted Flow Rate				
Wet Chemistry (mg/L)	12	Analytical Date	4/7/2016	9/30/2016	3/27/2017	10/9/2017
Cyanide, Total	0.070616	0.49	<0.004	0.0036 J	<0.01	<0.002
Ammonia (SM4500-NH3)	5.044	35	0.87 B	1.3	1	0.54
Biochemical Oxygen Demand (SM5210B)	72.058	500	2.9	2.1	3.1	1.8
Total Suspended Solids (SM2540D)	72.058	500	35.2	55.6	58.8	56.4

Notes:
lb/day = pounds per day
gpm = gallons per minute
mg/L = milligrams per liter
Detection Limits use reporting limit (RL) values
J = estimated result
B = blank contamination
TTO = total toxic organics

Prepared by: BPC
Checked by: TGB
Reviewed by: TAM